ProAge

Preparation for Active Ageing

Up to the Net!

The World Wide Web is not Only for Youngsters!

Curriculum

Alsómocsolád Local Government

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Introduction

The demographic turn and the age paradoxon

The social view on older age has significantly changed in Europe and North-America in the second half of the XXth century. The honour and respect, the taken for granted attitudes of earlier historical periods towards the elderly, was replaced by a radically different new social phenomenon appearing in the modern era of the globalized world and its welfare societies. In 1970 in her monumental work „ La Vieillesse", (The Coming of Age" in English version) Simone de Beauvoir intentionally broke the „conspiracy of silence" concerning the conditions and position of old people. She pointed out that „Old age is something like a shameful secret for the current society, it is not the subject of a polite discussion. It is not just the guilt of negligence but direct crime against the elderly. Old people are treated as outcasts of society behind the myth of economic development and abundance."[1] (Beauvoir 1972:6)

The answers for a basic question, whether the old age is a treasure or burden for societies and families are becoming more complicated in the XXI. century. The respect of the parents *(Honour your father and your mother)* was already written in the Ten Commandments of the Bible. The Indian culture and Chinese Confucian values, as well as the Islamic traditions also give great respect to the elderly. In the value system of the big religions old people and their life experiences are regarded with esteem. In the Greek and Roman culture the wisdom of the elderly was also highly appreciated. (Barabás 2013)

In this era, the loneliness, nuclear family, the single parenting, the single way of life, poverty, illnesses and the reverse socialization - when the younger teaches the older for the necessary digital knowledge and orientation, are the signs and symptoms of the changed environment around elderly people.

Well known facts are what the demography reflects: in modern societies citizens are getting older and older. The share of people over the age 60 has reached 25-34% in some "ageing societies".The statistical indicators underpin, that within these societies the share of old people increasing, as well as the average age of people, and most importantly, the increase of those years, in which old people can live in good health.

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[1] It is translated into English from the Hungarian publication so it may differ from the English translation of the French origin.

From an economic and social policy point of view these demographic figures mean a serious headache for decision makers. By whom and how the resources can be created for the increasing and longer living of the elderly generation?

Viewing the eldely age from the individuls'perspective, it is not easy for the old person to retire after a long active life. The paradox of ageing is well described by Beauvoir: „Each human is subject to death and each of them think about it. Many of them are getting old but almost none of them are willing to face this embarassing change calmly. Nothing should be wanted more than retirement and yet, nothing is wanted least than old age."[2] (Beauvoir 1972:10)

In the process of ageing, the moment of retirement represents a dramatic event, because the former active years from one moment to an other, have to be replaced by a different way of life. In this new situation the share of duties and responsibilities is shrinking, the financial position is changing and the former personal contacts are becoming less frequent. This new situation could lead to depression, loneliness and to different mental and physical illnesses. The elderly age perceived by the majority of the societies is still a kind of undervalued stage of life.

Nevertheless, retirement could bring a new opportunity for the given generation. The seniors cannot be regarded as a homogeneous group. By the World Health Organisation's (WHO) grouping, between the age of 60-74, a person is considered to be elderly; between 75-89 years we talk of old age; between 90-99 years the very old age comes; and over 100 years one enters the age of Methuselah. Based on the definition of the WHO, the time of retirement in European societies coincides with the elderly age - as in the states of the continent the completion of labour market activity takes place between 60-67 years of age.

The process of getting old takes place in various ways and 'routes'. Elderly people themselves have different strategies in their new period of life. One is set to build a new career. The other possible option is a gradual withdrawal but still remaining active. The third one is giving up, a kind of drifting with life events. The last one is still a frequent pattern, many people cannot find their place in the family and in their communities after retirement. (Füzesi et al. 2013).

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[2] See the previous footnote

Understanding elderly age

At the beginning of the 20th century, the way of scientific approach about ageing and older generations has gone through some significant changes. An often cited model was the deficit model – which explained ageing not as a process but rather as a state of decline, and focused on the loss of abilities and skills of the elderly, both in the field of physical and of mental functions. This approach has become considerably marginalised in our day but the stereotypes pertaining to the model may still be encountered in ageing policies and in the communication concerning the elderly.

Another approach which has real significance and influence these days is the activity theory. It claims that after finishing the active period of their lives, elderly people are still in need of finding certain roles in their societies, communities and families. In order to be able to do that and to realise an active ageing they must preserve as many of their previous activities as possible. Activity and social participation are essential elements in the lives of the elderly.

The concept of active ageing gained a new sense in the WHO (World Health Organization) document - titled 'Active Ageing - Policy Framework' - prepared for the United Nation's Madrid World Assembly on Ageing in 2002. The document interprets active ageing as an opportunity for all the members of the retired generation to attain a physical, mental and social well-being, and to participate – according to their needs -, in all areas of social, economic, cultural and community life as well as in the support of their families, their immediate and extended environments. According to the approach of the WHO, the services and care improving the elderly's quality of life and actualising their safety are indispensable in order to attain the goal. (WHO, 2002)

The international political discourse on old age

The increasing number of elderly people, as well as the dilemmas related to ageing have been present in the political discourses of Europe and in the international organisations for more than 30 years.

The universal principles for elderly people (United Nations Principles for Older Persons 1991) lay down the protection of indenpendence during their whole life, the provision of social participation aiming at keeping the older adults integrated in society, the provision of care enabling them living in dignity and security and the value of self-fulfillment during their whole life. In the new century the UN has already adopted 5 world reports and several other updated presentations and forecasts on this theme. (World Population Ageing).

The EU declared the year 2012 as the European Year for Active Ageing and Intergenerational Solidarity. Other world organizations like the World Bank or the OECD put into the focus the emploment possibilites for older people with the provision of a flexible framework and non-discrimination environment. By the research of the EUROBAROMETER in 2012 one in every five european adult personally experienced ageism and age discrimination in the labour market. (Eurobarometer 2012).

During the last decades, several professional programs, action plans were born to influence the way of life in older age on local and national and international level. Each of them considers this period of life as valuable, worth developing both for the individual and the society. Preferred learning forms of the old people like elderly clubs, reading circles, learning circles, summer universities, folk high schools, camps, workshops, third age univerisites, community planning actions all built into the traditional practice of humanistic adult education. (Kleisz 2016)

Research on the old population covers several fields and themes: dementia and alzheimer, healthy diet, preventing falling down, supporting technologies and robots, loneliness, ageing on the countryside, social involvement of the elderly, poverty, discrimination, adequate elderly friendly living environment, etc. In the EU the Horizon 2020 programme and its subprogram, the Health, Demographic Change and Wellbeing targets the sustainability of healthy way of life and the elderly care system. Research programs get support from the program to develop digital technologies to support the independent way of life of elderly people, permanent monitoring of their health status, the control of their food intake and provide personalized advice and care service for elderly.

Briefly about the ProAge „Preparation for Active Ageing" Erasmus+ project

Our project aimed to formulate a non-formal learning curriculum which presents good practices and innovative solutions for conscious preparation for active aging. These practices and activities are increasingly needed in ageing societies and are not - or hardly - accessible in formal learning materials. The project partners created a complex curriculum, which provides complex knowledge via domestic and international examples. It is suitable for civil organizations, elderly clubs, folk high schools, cultural institutions, libraries, and also for families and individuals who seek and want to achieve the individual 'routes' to old age. It is important that preparation for active ageing should take place consciously, adjusting to the characteristics of different generations and individuals.

An important goal is to avoid lagging behind and keeping pace with progress. The curriculum provides knowledge and experience in four important fields of life. The four modules of the curriculum can be used together as one volume. However, each of the modules can serve different target groups and different interests and can be used separately as well.   The first module is about IT teaching and learning in elderly age. There are a lot of courses available for IT. Our module's significant feature is that it pays special attention to the characteristics of learning in later life. The content and the teaching methods of the module are adjusted to their special needs and learning pace. The second module gives examples, best practices and instructions for all age-groups concerning voluntary activities. Participation in the life of the wider communities through volunteer activities is also important for elderly people as this domain helps to keep social ties with other persons and groups. This knowledge of participation in community life comes from Norway.   Community activities, and meeting with different generations is one of the best way to fight against loneliness and desperate depression. In order to pursue healthy way of life, to be active is very relevant for eldely people. The third module shares knowledge and provides advice on how to maintain or build up new habits for healthy lifestyle, useful leisure activities, nutritional advice and recreation possibilities. Slovenian experience presents physical activity patterns suitable for elderly. Also a healthy diet is an important ingredient of active ageing. The most threatening and still incurable illness for elderly people is demencia and its special form, the Alzheimer disease. The fourth module on this topic provides a lot of advice for family members how to adjust their life to this illness and how to make the progress of the illness bearable.

The fourth module brings up several good practices on active ageing and the cooperation of generations as well as recommending what to do if it turns out that a family member lives with Alzheimer or Dementia.

The authors are convinced that each generation needs to pay attention to the upcoming period of life, not only those who are already in close proximity to retirement age.

What are the innovations in in our curriculum?

We consider that the whole approach, the selection of the themes of the curriculum, the proposed methods in each modules, the simple non-professional languge which can be understood by lay people, the structures of the modules, (starting from simple or basic issues towards more complicated ones), the community approach to the target groups, and the proposed community-based trainings (enforcing local democracy and the involvement of multiple generations) are the most important innovative features of the curriculum.

The selected themes cover 4 important aspects of life in old age. Bringing together the IT training, Volunteer activities, Handling Demencia and Alzheimer's and Activity can provide a good preparation for active ageing for different generations. It is not only the task of the 50+ generation close to retirement but it should start at an earlier stage of life, at least from the 30+ generation. Furthermore, the core idea of active ageing has to be acquired already in childhood via one's family life.

The preparation for active ageing requires a complex knowledge. Family members need to be prepared how to handle threatening illnesses, what social responsibility and volunteerism mean at an elderly age, and how to change learning patterns later in life. Therefore the preparation for active ageing needs a complex approach through different avenues. This knowledge has to become a basic value for the people involved, for local communities, families and multiple generations.

Kovács Dezső PhD. honorary professor

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Alsómocsolád – the Smart Village

Alsómocsolád village is a cul de sac settlement (not with through road) with 320 inhabitants in Hungary, at the Northern edge of Baranya County. The village has all public utility supplies; its sewerage is treated by its own wastewater treatment plant. Its telecommunications and information technological connections are modern. Its village structure is rustic, it has a combed-shaped layout with family houses. The village is situated in a region targeted with complex developments in the Ridge District (Hegyháti Járás). In the village, the Autumn Light Old People's Home (Őszi Fény Idősek Otthona) was handed over in 2006, which provides several jobs in the vicinity. There is also a doctor's office, but the centre of the zone is Mágocs. Elders' day care is provided in the village, and there is a Service Centre, a Health Centre, an Integrated Community and Service Space, a Library, a Guest House, and a Conference Centre available. During the last thirty years, Alsómocsolád has performed a series of "magic acts". It has transformed itself into a strong community that wants and is also able to live under any circumstances. Following its own path, it was looking constantly for opportunities of renewal and found them. It has been caring about its own values, kept whatever its ancestors had bequeathed. The main motivator of these acts lies in human power. A sizable amount of committed citizens, contributors and helpers have been needed to create what we call today Alsómocsolád. This local village is willingly sharing its collected and systemized intellectual knowledge and values with others. There is a concerted effort to innovate in each area of "village existence", while always serving "public welfare".

There is one thing constant in today's rushing world: change. In order to be able to adapt ourselves to it, we need continuously updated information and knowledge. In order to cultivate this knowledge, in our village we regularly have folk high school type of club sessions, knowledge distributing days, trainings, and courses targeting different age groups with different skills in the most varied theme areas, for example households management, information technology, and language. In addition, we also established a forest school to enable children interested to make explorations on the land, in the water and in the air in an interactive way by utilizing potentials intrinsic to the natural environment.

In Alsómocsolád, the older generation that brought us up under difficult conditions is surrounded by special attention. From whom we have learnt honesty, poise, love to work, the importance of family. At every age – also when we grow older -, it is important to feel ourselves useful, and appreciated, that we belong to somewhere, and to be healthy in body, and soul.

Community celebrations, and other occasions are held frequently when we can be together with others, get relaxed or even learn something new or we can work together for the sake of the village. The manifold care of the municipality, the nourishment of the local "generation bridge" between the young and the old illustrates our efforts very well.

In our village, the opening of the Telehouse in 1997 provided access to information technology tools to the community. The series of our digital competence developing programs resulted in the fact that both the age group of children and young people uses IT tools almost in full number, while the group of middle and old aged who are sensible for innovation and change use them at skill level; the IT tools have become an organic part of their everyday life.

Anikó BALOGH

"I have been managing the community access point, i.e. the Village Hall/Telehouse since 2000 at Alsómocsolád. My tasks include ensuring the operation of this community space, and the services built on its infrastructure, generating community planning activities, and fundraising for the processes of settlement development and rural development, performing the related project management tasks, support networking, and keeping contact with our partners. Digital competence development permeates my everyday life, influencing especially local inhabitants. In the period between 2000-2012 I supported programs targeting the improvement of digital literacy at the levels of rural settlements, and beyond acting as the president of the South-Transdanubian Regional Division of the Hungarian Telehouse Alliance.
I worked in the project within the framework of a national development programme TÁMOP 2.1.2 "Improvement of competences related to foreign languages, and information technology" as a county level mentor, then I led the eHungary Point in Baranya County, later in 2018 I had the opportunity to foster the mission of the Digital Welfare Program as the leader in Baranya County. I believe that the fast development of digital technology, the utilization of opportunities established by it, meeting the challenges are everybody's business, while our task is to provide access and support to it. The 'Up to the Net' curriculum has also been compiled in this spirit."

Andrea VASS:

Starting from 2001 in the Alsómocsolád Telehouse, then from 2011 in the Csurgó Town Library, fostering and supporting digital literacy are constantly re-appearing tasks in my portfolio as a librarian. It comprises an organic part of everyday life to hold face-to-face consultancy in connection with the use of information technological tools and devices and we also organize training courses for users in small groups to every age group. I worked as a mentor in project TÁMOP 2.1.2 "Improvement of competences related to foreign languages and information technology". In our library there is a Telehouse, and an eHungary Point. Since 2018 in a Digital WelfarePoint, I and my colleagues help to improve the digital skills of people living in the area.

I' endeavoured to support the creation of the 'Up to the Net' curriculum with my experiences obtained as a result of thinking and studying together with elders."

Up to the Net - the World Wide Web is not Only for Youngsters!

Table of Content

1. Introductory Thoughts

Information technology has become part of our life extremely quickly, especially in developed countries. Computer technology has affected work, industry, traffic, health, and entertainment, over the years, it covers almost each field of everyday life. Let us start with what information technology (IT) is? *IT is the complex of the tools and methods of computer-aided data processing for which earlier the term computer science was used. But as time has passe the application of computers has also become widespread at areas where they weren't used for computation problems – for example, photo editing programs or route planners, consequently, in line with the extension of the content, the term has also renewed. Due to the rapid headway of the communication sub-area, it is common to come across it in the form of ICT = Info-Communication Technology or Information Communication Technology.*

There *are* challenges that we cannot avoid, so we need to face them.

We can't miss observing how our children, grandchildren or even our great-grandchildren have submerged in the virtual (*illusory, symbolically existing, according to many: simulated*) world, causing a widening divide between generations. Let us take a deep breath, pluck up all our courage, and get started! Even for older learners, plenty of wonders and opportunities are inherent in this world. We only need to have a similar attitude to its discovery just like to the porridge hill: although it seems impossible for the first time, but together we will incorporate it spoon by spoon!

Besides bringing entertainment and some decrease of the generation gap, the learning process will entail several benefits for us! Among others, we will be able to get information concerning our health, and our finances from home. While sitting on our sofa, we can read newspapers, books or watch theatre plays or football matches. We can manage official business without standing in a queue and moving out, while saving up time and money. We can study! A lot of people having acquired proficiency in foreign languages may use this secret wonder weapon to discover new worlds. Our hobby will profit as well, e.g. we can acquire new DIY techniques presented by video tutorials demonstrating the process itself, we can expand our recipe collection, make our flower garden more colourful, as options are much greater for copying the tricks of taking care of an extraordinary plant than learning those only from the neighbours.

It gives us the ablity to get to know the world! We can visit exotic lands or climb the Mount Everest or just dive under the deep sea in order to discover a wonderful, colourful wildlife and all this we can do whenever we do have leisure time and feel like doing it.

It gives a chance to extend our network of social relations and make it more vivid, since with the help of the internet, distant family members and friends also become available, moreover new ones can be reached too, and it is much simpler to write a letter using a keyboard then by hand. Live relations are important in our lives, since they give a sense of belonging and diminish stress and depression, effectively contribute to the upkeep of psychological wellbeing, and they improve the state of health all in all. The survey made by Hilt and Lipschultz in 2004 among American elders also confirms this.

A wide range of benefits to reap for everyone! What needs to be done to achieve that?

We need to have appropriate technical background. This consists of nothing more than a smart device and access to the internet. This device should not be inevitably new and the latest model. It can be a laptop, a smartphone, a tablet etc. that are already not used by our children, grandchildren or great-grandchildren. It is also not a requirement to have internet connection right away in our home with a several years' loyalty contract, since it is available in several public spaces for free. But if – like a good student – we want to practise learning at home, having a minimum mobile net package initially would be suficcient. By the time we acquire considerable knowledge and skills, the optimal technical background solution will be more easily to be chosen for us. Let us bravely ask the informed advice of the members of our family or the practitioners of the nearby operating community spaces (e.g. Telehouses, Libraries, Community Centres, and in Hungary at the Digital Wellbeing Program Points)!

We need to get rid of our prejudices and we have to overcome our fears! We ought to believe that this world is *our* world, too. If we are not complaining and lamenting, but ready to give our time and energy to acquire firm knowledge in it, it is common knowledge that exactly the same familiarity can be reached   as any other age group.

Learn! The language of information technology is English, that is why while acquiring knowledge and skills, we will get to know several English expressions and their abbreviations! First, it might seem to be threatening, but remember the porridge hill! We will get it, if we stay patient!

Get ready for the adventure! The brave ones are ready for Net!

2. Introduction to smart devices, getting to know the most frequent information communication devices, their basic functions and practicalities of use

2.1. Computer

Let us see what we call a computer? *A computer (in basic chitchat, a Personal Computer, in short: PC type used by us at home or at the workplace (but we will see that there are other types of computers, too) is an electronic machine that is capable of receiving incoming data, performing diverse, pre-programmed operations on various data, then retrieving the data got as a result of the operations.*

In the digital era, computers practically became indispensable. They have become our loyal partners supporting us, whenever we seek information, or interested in acquiring new knowledge, tackling issues while working, archiving our documents, filing our data, planning travels, entertaining ourselves, keeping contact with family members, friends, acquaintances or finding new ones overcoming physical distances.

Recently developed computers can basically be divided into two main groups, desktop and portable devices. By the end of the first decade of the 2000s, the so called other smart devices have also gained ground. Beyond covering the basic computer application fields, they have opened up new dimensions with sensors and their complex integration for the sake of raising our standard of living, and improving our living conditions.

In this chapter, we will get to know some of the smart devices, too.

2.1.1.Desktop Computer

It has not been a long time ago, when we only knew the "fixed", desktop form of computers. These types of computers perfectly serve us in our home or office environments, but because of their setup, size, and weight, they are not portable. At best, they can be moved away from their original place during our flat's or office's rearrangement or when moving to a new place.

It is typical of desktop computers that they are built up from separate units. The "brain" of these computers is hidden in the housing, to which a monitor is connected that mostly resembles a small television as display periphery *(as a tool, with the help of which the capabilities of our computer can be extended)*, then a mouse and a keypad as inlet peripheries, so that our computer can be controlled. *The summary name of these tools and devices is "hardware", which is nothing else than the complex of components, and all tangible devices that physically set up a computer.* It is engineers who deal with the development of computer hardware devices. In order to get our computer running, however, hardware needs to operate in alignment, which is ensured by a software environment. Software is nothing else than non-tangible programs that are needed for operation (e.g. operating system, editor, browser etc.) and written documentation describing their operation, and use. Software is created by programmers; intellectual properties, they are not tangible. *So software is the collective name of programs running on a computer, the whole of programs operating and controlling hardware units.*

Let us see what the expression "program" means exactly in the terminology of information technology! Program consists of a logical series of simple instructions, and operations, through which a computer is controlled.

2.1.2.Portable computers

By now, the demand for portability has become more and more important, since in many cases we start a work in the office or at our working place and continue on our way, at another location or right at home. However, portability requires our computer to be light, small enough to fit in our bag and able to take the workload content all day.

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Also among portable computers, we can differentiate between different types: laptop, notebook, ultrabook, and gamer laptop. All of them are the same in the following features: as compared to desk top computers, they are small in size, while desk top computers were made up of parts, the portable ones are supplied in one piece – "brain", monitor, keyboard, mouse, moreover, built-in web camera, microphone, and loudspeakers are already built in nowadays in the standard equipment, but nonetheless, fundamental differences also characterise them.

2.1.2.1. *Cloud computing service*

The cloud computing service is nothing else than data storage on the internet or on a private network. When using a cloud, storage service is used through the internet. On our own devices, we generally store our data in one copy, at one location. If our computer breaks down or we lose it, it is highly probable that we will not be able to access our "treasures" any more.

If we use a cloud computing service as home users, free hosting or a drive is enough for us for safe storing and our materials and data uploaded there can be accessed from each device, from anywhere. These include our documents, address lists, photos or other files, and contents. *But what are the files? File is nothing else than a data stock, i.e. a logically related set of data.*
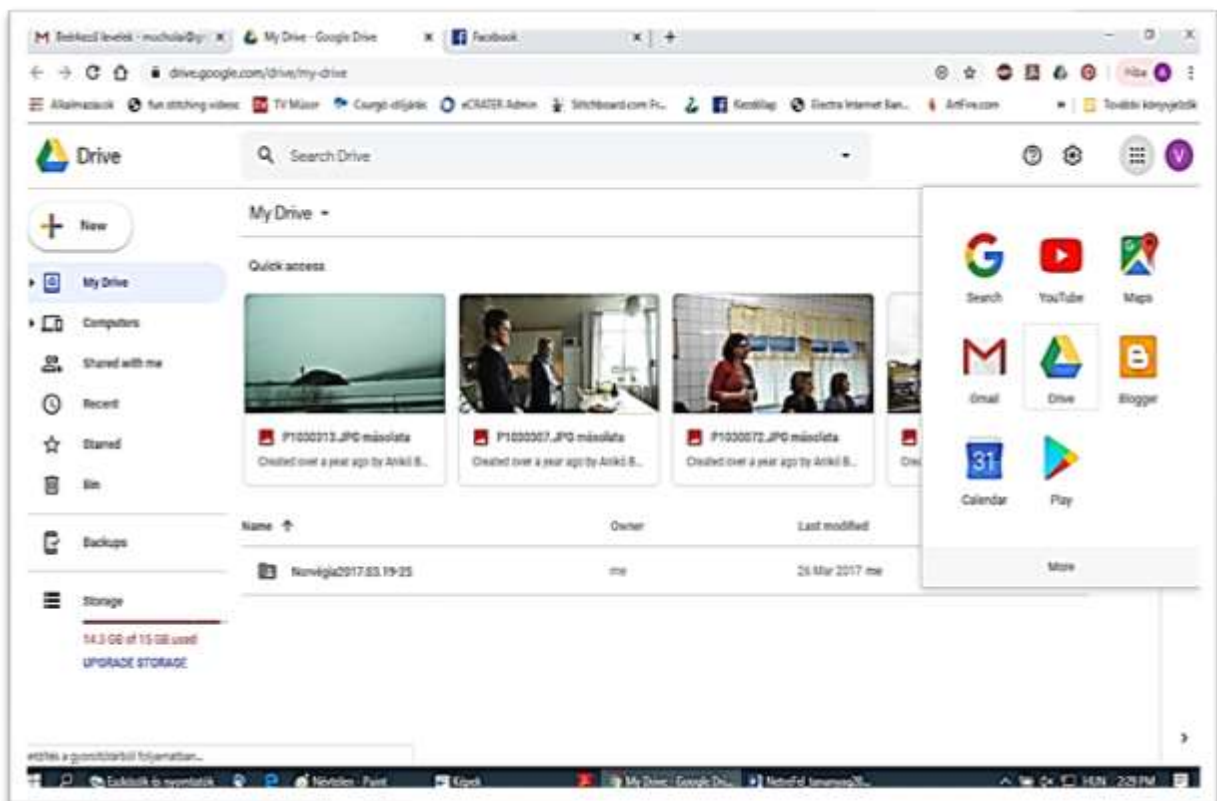
It is a big advantage of the cloud solution that it is much safer and cheaper than storing everything on our own devices and supposedly doing all the tasks of maintaining, updating, and protecting the device. The best way is, it seems, if we store our materials being important for us both on our computer and in the cloud in a systemised way.

Naturally, cloud computing services cannot be used without the internet, but if there is an internet connection, then accessibility is possible from everywhere. We can check our e-mails on our home computer, but also remotely even during an excursion where we can make the members of our group happy easily by showing a photo or music item important for us.
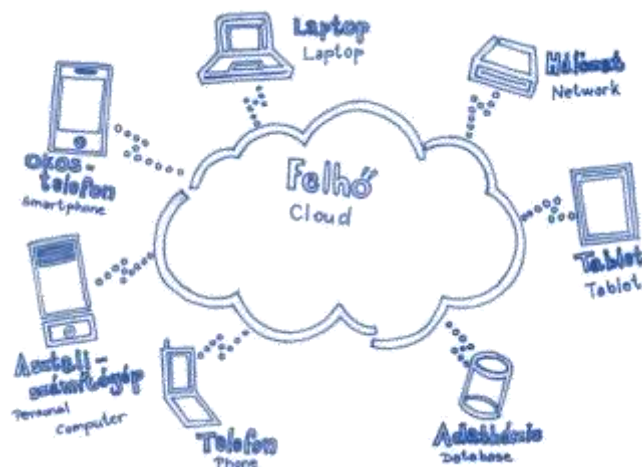
In summary, a cloud is an excellent solution, "space saving", we need not use our own hosting exclusively and with its help we are able to free our important data as backup from our computer.

Through its application, user freedom has grown a lot. Our immobility terminates with it as we can check our e-mails and replies across smart devices. There is no need of carrying our "office" on our shoulders, since relying on cloud-based storage of our data we can get rid of paper piles, though we may need to use data carriers, e.g. pendrives and external Winchesters only in order to soothe ourselves. We simply log in the cloud and all the uploaded data are immediately in front of us at our service.

2.2. Smartphone
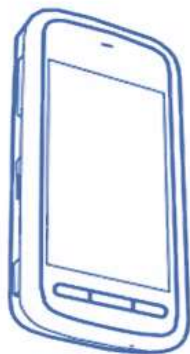
By now, smartphones are capable of almost everything that a computer is, they are only smaller, lighter, more portable and one can also make a phone call with them. It provides multiple services, something like bringing our computer, camera, the radio, the television, a voice recording and a player device, several newspapers, maps, what's on in the theatres and movies, diaries, timetables, a phone book, an alarm clock, and a family photo album with us.

A smartphone – from several aspects – may even supplement a computer, since we are able to access, open, read or even edit our documents stored in the cloud from here, – but obviously, in many cases it is good, if there is a bigger external monitor or a physical keyboard helping us

Although there are "special tools", e.g. word processing, and video editing that can be used much better than with smartphones for implementing particular tasks, but it is a huge advantage that a smartphone is always at hand and is able to appropriately supplement almost everything.

2.3. Tablet computer

During the two decades of the history of mobile phones, both the size and weight of phones had started to shrink up to the time when mobile photo shooting and mobile internet got widespread, when it turned out that a larger screen provides a lighter user experience. Based on this influence, tablet computers or tablets were born, with mostly 7-10 inches sizes, which are alread not suitable for making phone calls.

One part of tablets includes a – dockable or detachable – keyboard, while to the rest, one can connect – upon need – a keyboard and even a mouse by Bluetooth.

It is already quite comfortable to write, edit a presentation or a photo or watch a film or a video on these devices. Certain tablets can be used with the help of a SIM-card, just like in the case of a smartphone, according to our mobile subscription type either only for making phone calls or surfing on the internet, too. In one part of the tablets, there is no SIM-card, consequently, no phone number belongs to them, it is not possible to make phone calls with them and they are not able to connect to the mobile net on their own. With these tablet computers, it is possible to browse on the net either via WiFi *(wireless internet network)* or we must share the net with them from our mobile phone.

2.3.1. The use of smartphones and tablets
 In addition to factory-installed ones, there are several applications that can be downloaded to smartphones and tablets from the manufacturers' and service providers' so called app stores. These programs that can be accessed free of charge or for fees may be either office software, image or video editors, games, health or sports applications. For the safe utilisation of the devices, it is important to update/upgrade both the basic program itself and the applications with adequate frequency, first of all in order to get security developments implemented in the meantime.

A smartphone and a tablet computer can be one of our most important personal devices. We can access with them our data, and contact lists stored in the cloud, we have our correspondence on them; many of us also use them for payment, and bank transfer.

3. Software and practical tips for the use of computers

While we have got familiarised to the devices, we have already acquired much knowledge that is inevitably required for the use, but it is important to extend it further in a systemised way before we get into adventures in the virtual world!

3.1. Software

As a man consists of body and soul, the operation of IT devices also goes beyond the system of physically perceivable devices. While in the previous chapter, we got to know hardware and its operation, in *this* chapter, we will get an insight in the dimension that allows for and aligns the operation of these devices.

Under software, we mean the sum of programs and intellectual properties operating the computer. Software is grouped based on the "distance" between the programs, the computer, and the person as follows:

- ✓ basic software
- ✓ system software
- ✓ application software.

The program setting the normal operation of our device is called initiating start-up program or **basic software**, e.g. a <u>firmware</u>; as a user, we have the least influence on this software.

System software includes programs managing the communication between the computer and its peripheries, which among others make it possible to create other software and putting it into operation. The system software contains the operating systems, and frequently the translator programs of particular languages. But what is an operating system? In computer science, operating system (often abbreviated as OS) is the computers' basic program that manages directly the hardware and ensures a unified environment to the applications (e.g. browser programs, word processing, games etc.) to be run on the computer.
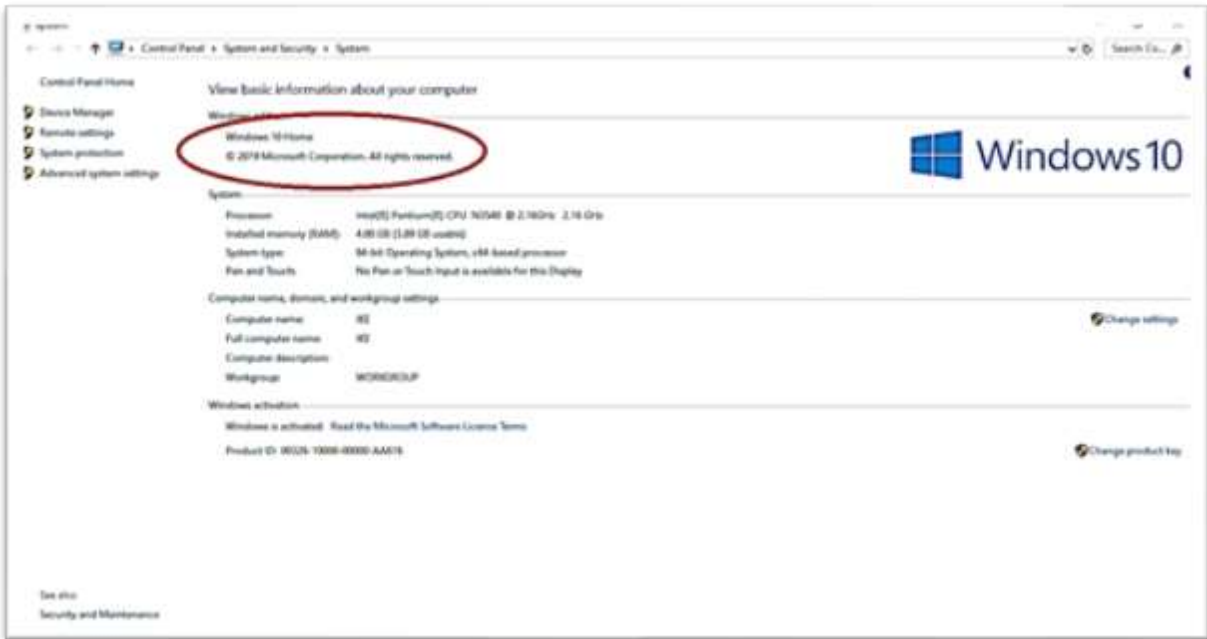
An application or user software fulfils a certain user demand. It includes universal purpose software that offers solution that can be used by a lot of people for an existing task, e.g. word processing, spreadsheet managers, image editors, and games. There is unique purpose software that is created for the sake of a concrete purpose, they are fulfilling a unique demand, e.g. a company's own billing program. Malicious applications also belong to this category. These are viruses and spyware.
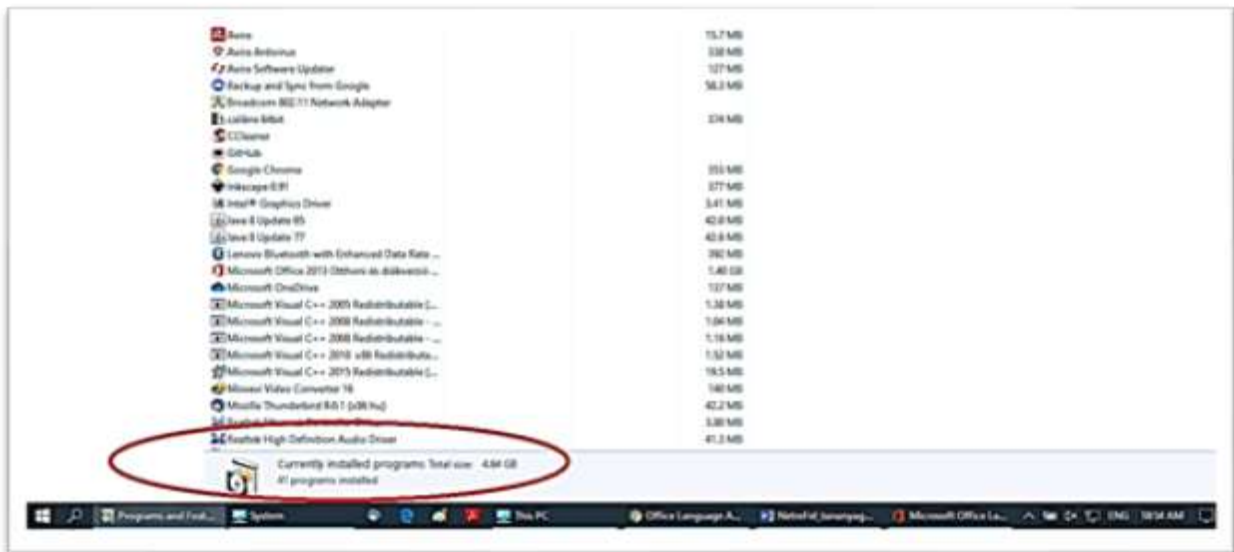
3.2. Icons

Current modern operating systems have user-friendly graphic solutions, what means, we already have very friendly and expressive pictograms, so called icons to use.

One part of the icons symbolises concrete programs. We can start the programs by double clicking on them, while the other part of them is located right within these programs; they help our work there.

Let us review the most important program start-up icons:

✓ The Start menu can be opened by the Start button in the bottom left corner. Through the Start menu, we can find the installed programs, the Windows settings and the stop button.

✓ File manager icon. It opens with a double click, there are several folders in it. You can look for your pictures and documents in these folders.

✓ It is the icon of Google Chrome. It is a browser program. If we double click on it, we enter the program where we can use the world wide web when we are connected to the internet.

If there is no Google Chrome, we will surely find Internet Explorer from among the browser programs on the computer. This is its icon. It operates similarly as the Chrome; it was also developed to use the world wide web.

✓ This is the program in which we can write and edit texts, and this is what we need when we get an e-mail message to which a text is attached. This is called: Word.

✓ Excel is a spreadsheet managing program. When we have already practised a lot the use of the computer, we will be able to use it for more serious work, starting from our household's budget.

✓ This icon leads to Gmail, which is an e-mail program.

✓ This is the Facebook's icon. This is the social network site that has the most users at present. We will be talking about it in a later chapter.

✓ This is the Skype's icon. A program suitable for voice and video calls, and chatting. Later on we will be talking about it.

✓ Behind this icon, there is a music and video player.

Let us review the most important control icons within a program:

✓ We can exit a program by clicking the 'x' in the upper right corner. It often happens that the programs ask a question in such a case, e.g. whether we have saved everything or the program may really close itself. This is just because of safety reasons.

✓ It is possible to use bookmarks on the internet, too. Among the great many websites, we will surely have favourites. We will find these under the star icon.

✓ From time to time, we need to save our work, e.g. when we write texts, edit photos, and do other jobs, in order not to lose our work due to any error; this small icon indicates it. In other cases, we find the word 'save'.

✓ This always represents a warning, which is generally followed by a short, but important text. If we are uncertain about what to do, let us ask for help, but if there is only a button written O.K. or ALL RIGHT on it at the bottom of the warning text, let us click on it once.

✓ This indicates return to the previous state or in browser programs return to the previous page.

✓ After returning to the previous state or previous page, it can be used to get to the last in the row.

✓ It might happen that some websites load and display not perfectly. In such cases, there is no other option for us than reloading the site to see if it helps. This icon, which is located at the upper left corner of the site, might help.

3.3. Increasing the font size

In most cases, we can see fonts in legible size on the screen. If it is not clear enough for us, we have the option to increase the font size. The easiest way to do that is to increase the percentage a bit in the bottom right corner, where we can see 100%. As a result, we will be able to see a more legible text. However, this setting will have no influence on the font size in the hard copy. Furthermore, in the Google Chrome program, we can find this setting option – together with a lot of other things – in the upper right corner of the Chrome window, at the icon representing a wrench.

If we work on our own computer, quite a number of programs will remember the modified setting. When we change our mind, we can easily set the zoom size back at the same place.

It happens that certain programs, e.g. the word processor of Word or the owners of some websites also consider the ones who see a bit faintly. They put the setting icon enabling the text size increase either in the header or above the website text. It is usually symbolised by an "A" in three different sizes next to each other.

3.4. Help

Help is available in every program, in which we can find the necessary help by entering or searching the subject-heading. The simplest way to access help is by pressing the F1 key once. The use of help is strongly recommended, since especially in the initial studying phase it can serve us with plenty of useful and practical information!

3.5. Folders of the computer

We can find the programs on the computer in folders. Similarly, folders contain and store our documents, pictures, and music etc. Within the folders, we can create subfolders. For example, within the Documents folder, generally there is already a Pictures folder. We are going to work with this right now.

3.5.1. Creating, deleting

So that we can see the folders, click on the folder icon.

Now it opens and on the left side we can see that there are several folders (documents, pictures, videos, music etc.). Let us click (once) on Pictures. Now we are within the Pictures folder. We can see in the upper row where we are now in the folder system. In the row below it, let us click on the "New folder" caption, as a result a folder icon is displayed, under which there is the "New folder" denomination.

It is worth changing the denomination. While the caption's background is blue, we can immediately start to enter our folder's new name. When the caption looks normal (because we have already clicked somewhere or because we want to rename it), let us click slowly twice on it in succession. At that time, a vertical line appears, and we can type the new denomination in, e.g. Pearl2019. We created a folder. Right now, there is nothing in the folder. But we can put pictures in it at any time (by uploading from the camera, downloading from the internet or just from the attachments of our e-mails). We will see it later how it is done.
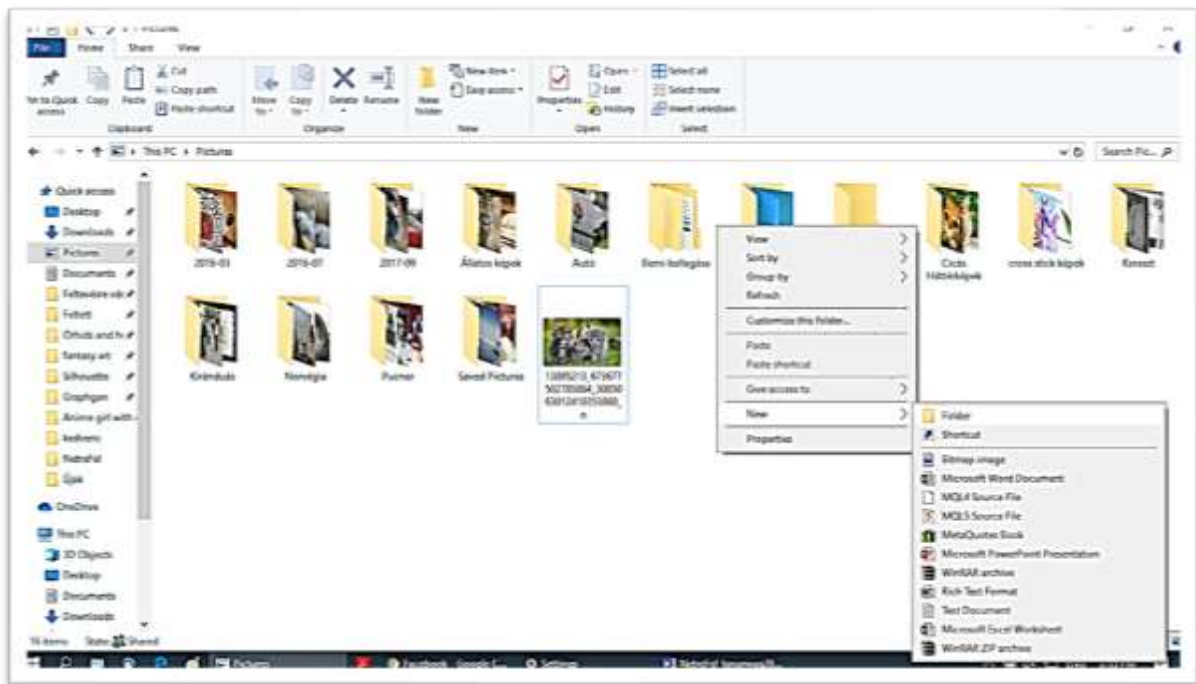
If we want to delete the folder – and all of its content -, we need to go to the folder above it. We can do that by clicking on the appropriate folder in the upper part that indicates our location. In our example, this is the Pictures folder, since we want to delete the Pearl2019 folder. We find the Pearl2019 folder in the Pictures folder, we click on it once by the left button of the mouse to select it. Then we have two options. Both of them are equally good:

1. we choose the Delete key on the keyboard and answer a 'yes' to the question whether we really want to delete the folder. 2. after selecting the folder, we click once on the 'delete' word in the well-known pop-up window with the right mouse button. We answer in the same way. With this, we deleted our folder.

3.5.2. Recycle Bin

Let us see what happens with the folder or file that we have deleted.

Our deleted data – both the folders and the files – get to the Recycle Bin, a temporary storage before their final deletion. If we deleted something accidentally or changed our minds, we have the possibility to put our data back to their original place from the Recycle Bin, and we also have the option to permanently delete them, if they are already unnecessary for us. Data put in the Recycle Bin equally occupy our hosting's space, as they do it at their original place. That is why it is necessary to empty it from time to time and to permanently delete the data being there. Our Recycle Bin can be accessed both from the File manager and the Desktop.
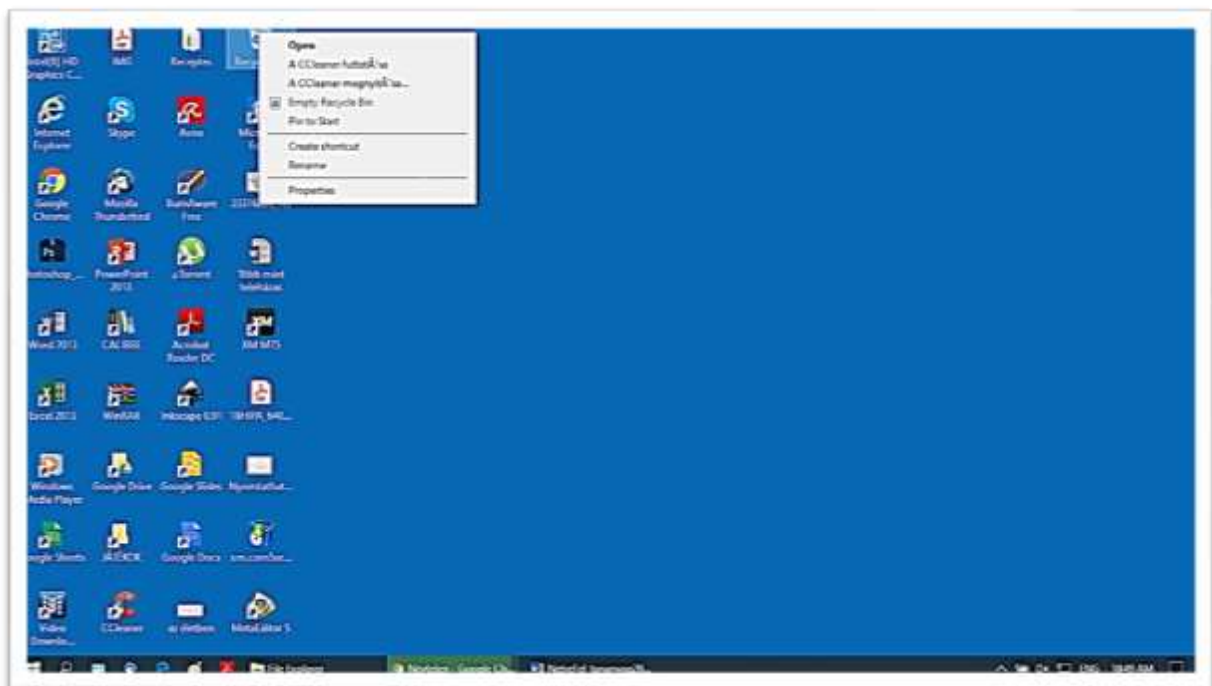
3.5.2.1. Recovery of files and folders

If we open the Recycle Bin, we have the option to put our accidentally deleted data back – after their selection – to their original place with the Restore command of the File menu. In order to achieve the common restoration of all the items, we need to use all item restoration reference of the Recycle Bin-operation group.

If we want to restore the files not to their original places, they can be transferred into an optional folder with the help of the Cut and Paste commands learnt earlier.

3.5.2.2. Recycle Bin emptying

In order to permanently delete all the data in the Recycle Bin, we need to use the Recycle Bin emptying command of the File menu or the Recycle Bin emptying link of the panel Recycle Bin-operations group. At that time, all the objects stored here are permanently deleted, i.e. get lost for us.

3.5.3. Selecting, copying, moving

A bit later we will fill our folders in several ways, but now let us select a folder that has already got pictures/documents in it (e.g. the Sample Pictures within the Pictures). Let us enter the folder and select a file there. This is done by moving the mouse over the folder and we double click on it.
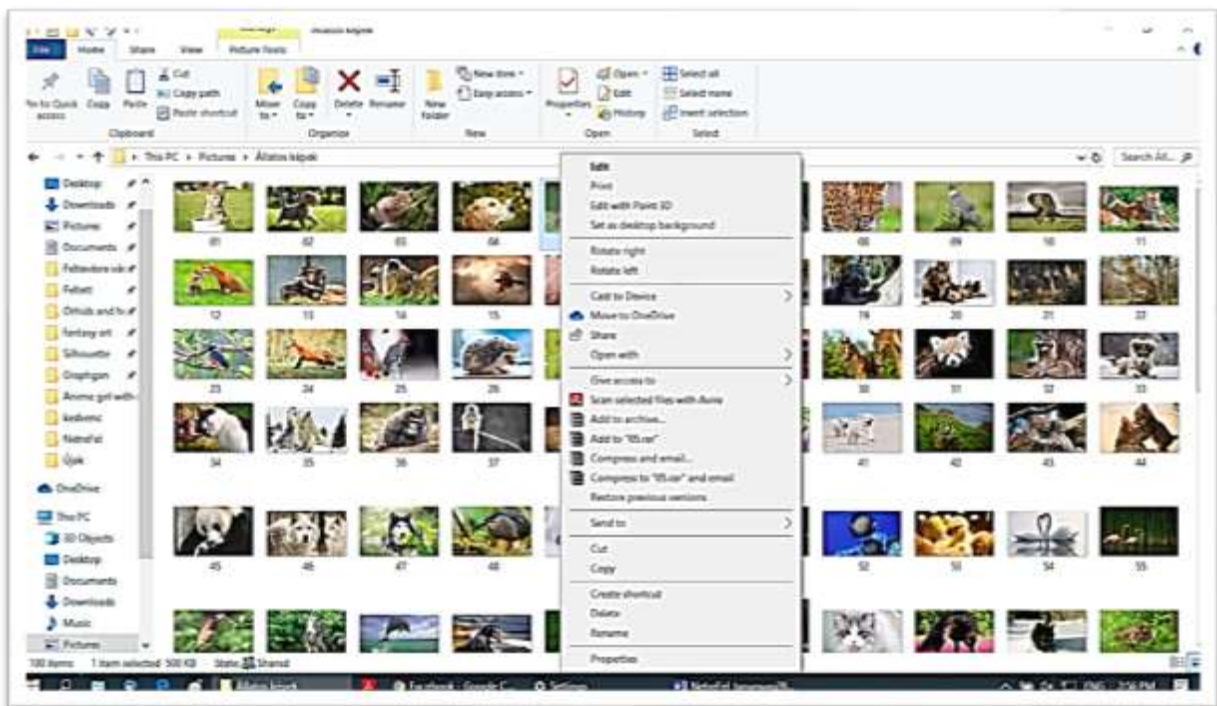
Rename. Let us select a picture, click on it once with the left button (we select it in this way), then on the name once more, and this is when we can rename it. If we are ready with typing in the new name, let us click near the picture. We can see that it already carries its new name.

Let us copy it over. Let us carry our mouse over one of the pictures and let us click on it once with the left button, then let us click once more, but with the right button. Let us select copying.

Then let us point our mouse to the upper row and let us select there a more important folder, in this case e.g. the Pictures folder, there we need to select our newly created folder with a double click.

When we are inside, the small window is displayed again after clicking with the right button, and let us select 'Paste'. After one minute, the copied picture is displayed. Now you can find it at both places. Let us place it to a new place. We can also do it in a way that we do not copy our file/picture, because we do not want to have it in two places. After selecting a new picture, we carry our mouse over the picture, click on it once with the left button, then once more with the right button, in the pop-up window, let us select "Cut", then let us find the new place of our file and let us click on the 'Paste' command there. We need to pay attention to the case, when there is already a file with the same name. At that time, the computer will inquire whether we want to overwrite it or what should be the correct act to do. That is why it is important to know whether we are copying or transferring or whether we have already copied that file. Let us select several files. In any folders where there are several files, i.e. a number of documents or pictures etc., we can do that we select several files simultaneously and perform operations with them at the same time (we copy, transfer, and delete).

We also have several options for selecting several files: 1. we can select files next to each other in a way that we click to the left from the first one with the left button and without releasing the button we should pull our mouse to the right (and downwards if needed), so that we could select the area where the files are located. The background of the selected files will become bluer. When we release the mouse button, we finish the files' selection. Let us check whether we have selected the necessary files and no other file was mixed among them. Now we can start the operations with the files. 2. We can also select the chosen files by clicking with the mouse on the first one (left button), then we press the 'Ctrl' key on the keyboard and hold it pressed while we click on each chosen files. When we are ready, we can start working.

3.6. Documents, pictures

In our folders, we can collect several files, we can arrange them or send them to someone. One part of the files is picture, others are text documents, tables or just music/video. We can also view (listen to) these files if we double click on the chosen file (with the left mouse button). The files will open in the appropriate program. The texts and tables will become in this way suitable for continuing the work with them. It is also possible for us to open our documents in the program managing them.

When we find something interesting on the world wide web (on the internet) or in our e-mail an important document or picture arrived, we can save it and if we chose its place well, we will be able to find and open it at any time.
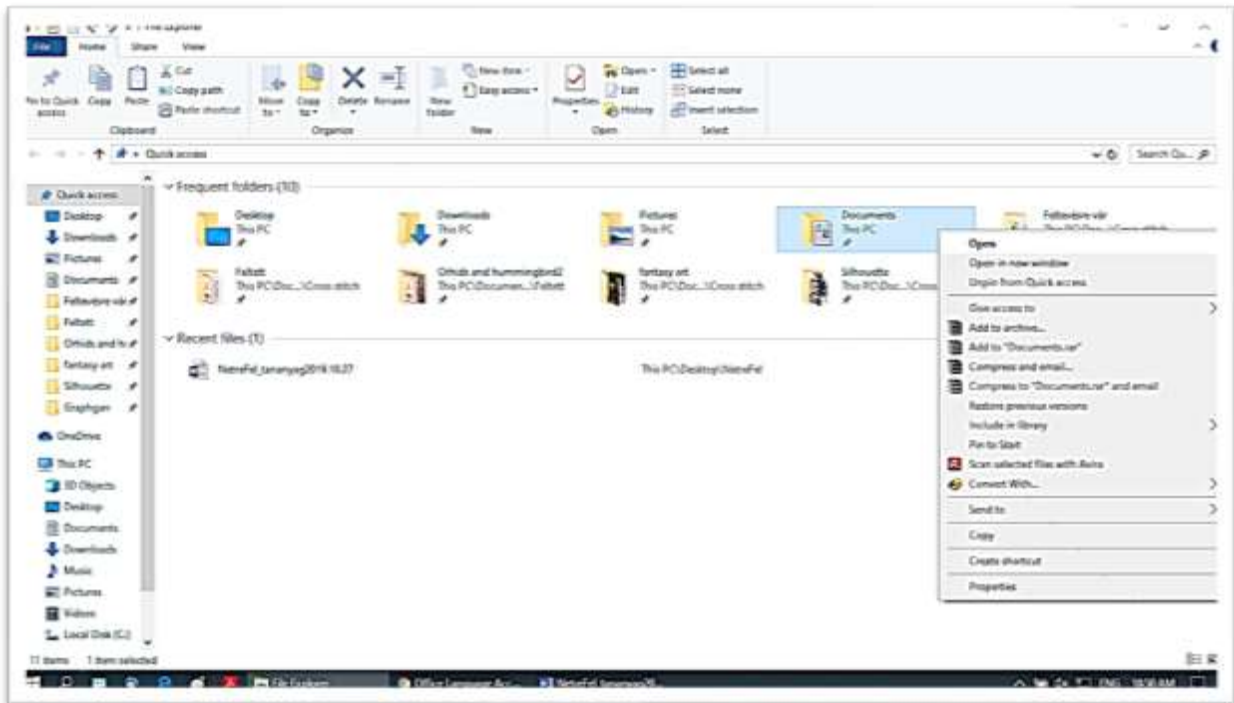
4. World wide web

In this chapter, we will get to know the world wide web, i.e. the internet that creates several opportunities for us, but it also hides some danger that can be avoided by keeping a few simple rules – we will get to know these in the ICT security chapter in more detail – and we will be able to enjoy the discovery of this new world!

4.1. What is the internet?

The internet is a computer network that covers the whole world, that connects the whole Earth, linking governmental, military, commercial, business, educational, research, and other (e.g. non-profit) institutions, as well as individual users.
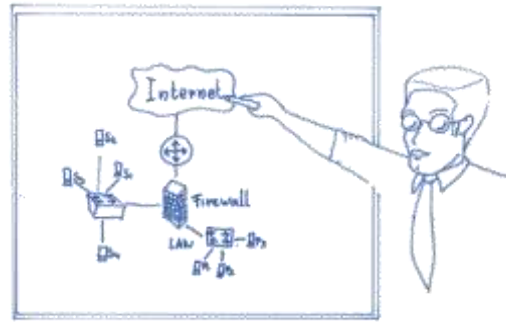
With its help, immeasurably plenty information, news, pictures, videos, personal stories, training material etc. flow through several billion computers. It brings people closer to each other, allows for the establishment of virtual communities, crosses the borders, and removes distances. We can access information on the internet by a web browser. Such web browsers are: Internet Explorer, Opera, Mozilla Firefox, and Google Chrome, which later on we will get familiarised with in more detail.

"The predecessor of the current internet was developed in the 60-ies upon the assignment of the United States' army and – after the developing institution – it was baptised as ARPANet. Its development aimed at establishing a military communications network that was able to continue operating even in cases when any of its components became inoperable. In such a network, it is not necessary for two computers communicating with each other to be in direct physical contact. Until the 70-ies, several networks isolated from each other operated, but soon a demand arose for connecting these to each other and unifying the data transmission methods. This is when the internet protocol used even today was created. The protocol is the sum of the rules describing the way of data transmission within the network.

The internet consists of many smaller networks connected with each other. The resource and the target of the information crossing the internet is always a computer. In the course of a communication, the data providing computer is called server, while the data requesting computer is called client.

The individual units are linked to each other with the help of various data transmission media; the data flow takes place through these media. The most well-known and the most widespread data transmission medium is the optical cable, the Ethernet cable, the microwave, and the satellite connection."[3]

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[3] Ministry of Information Technology and Telecommunication (2007.) Information and communication Microsoft Windows XP Curriculum

There are a lot of useful services available on the internet:

- ✓ WWW (World Wide Web): it may be the most widespread, popular service of the internet; it is often identified with the world wide web itself, although it is only one of its countless services. With the help of the WWW, we can "surf on the net", browse, search for information, i.e. text websites and we can access related images, figures, and videos. Websites are accessible by browser programs mentioned before.

    Their task is to retrieve and display the required websites, to make their content available and processable for us. More well-known browsers include Internet Explorer, Opera, Mozilla Firefox, and Google Chrome.

- ✓ E-mail: E-mail originates from the English electronic mail expression. With its help, we can send letters to each other through the internet. A letter may contain not only text information, but also attached files (e.g. image files, documents, and audio files). Current e-mail systems use internet as intermedium almost without exception, thus that became the other most favourite form of the use of the world wide web. An e-mail address consists of a username and the dom ain name of the internet service provider who maintains the electronic mail box. The two elements are connected by the symbol of @ (at). Therefore, an e-mail address may have such a format: mary@isnice.hu. In the above e-mail address, mary is the username, while isnice.hu is the domain name. Electronic correspondence and mailing lists are much the same age. They enable sharing information among people with the same interests, and same scope of activity.

- ✓ VoIP (*voice over internet protocol*), i.e. voice transmission over Internet Protocol that is nothing else than a new form of telecommunication where the conversation takes place not on the traditional phone network but on the internet. While the phone network being well-known by us, although in an electric way, but transmits the voice from one device to another, the "voice" transmission on the internet is implemented through data packages. Speaking in a simplified way, in order to do that a microphone is needed to enter the voice into the computer. There a program is required to transform it into data, as well as the internet that forwards the data package to the receiver whose computer transforms that back into voice, again with the help of a program, that the receiver can hear through a loudspeaker or headset. Of course, VoIP phone calls are available not only through computers, but also through smart devices, that we got to know already, e.g. tablets, and smart phones, but there are also VoIP devices especially designed for this purpose. Cost effectiveness is in favour of VoIP solutions. If we have already a

device and an internet subscription, it does not entail any other investment from us, since the most widespread applications, e.g. Skype, Viber or the Messenger that can be linked to the Facebook community site are programs that are available and downloadable free of charge.

✓ Instant messaging: the instant message senders and chat applications are computer applications allowing for instant written communication between/among two or more people over a network, e.g. the internet.

Nowadays, these already merge into VoIP applications, thus the already mentioned Skype, Viber, and Messenger applications also have such a function, and WhatsApp or Snapchat that expressly target young people are also popular.

4.2. Internet speed, bandwidth

Bandwidth in practice means the speed of the internet, namely, how quickly the data flow is able to proceed over a telecommunications line (either over a line, or wireless). When we surf on the internet, our computer and the internet browsing applications running on it generally try to provide the fastest data flow possible (utilise the line's bandwidth), consequently, the speed of internet usage and experience depends on the line's speed, i.e. bandwidth.

If we are brave enough and got prepared for a bit of logics development, too, we can learn it right now how we can interpret the speed of the internet, when we choose a service provider.

Bandwidth is used to be defined in the following units: Mbps or Mb: megabit per second or perhaps Kbps or Kb: kilobit per second. If in the description of the service provider's package, two speed data are divided by a "per" symbol (/), the first means download speed, while the other the upload speed, e.g. 5Mb/512kb means 5 megabits per second download speed and 512kbps (half megabit per second) upload speed. The multiplier in case of bits (kilo, mega, giga, tera...) 1024, so that it would not be too simple. Do not let us mislead by the fact that at some places we will see kilobyte per second data, the multiplier between byte and bit is: 8(!) Namely, e.g. 5 Mbit/s just equals with 640 kilobyte/sec."[4]

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[4] https://www.telenet.hu/hasznos-tanácsok/mi-a-sávszélesség-és-a-szélessáv.html (utolsó letöltés 2019.08.22.)

4.3. Devices used to get connected to the internet

Nowadays, it is already possible to connect to the internet in several forms. They differ from each other in their interface. When we select a subscription for us, let us look around on the market which service is available at our residence place, which is the most favourable for us in value-price rate.

The nostalgic past. At the beginning, only dial-up internet connection was available. It was slow and expensive, so it frayed from everyday use, just like its version ensuring daily 24-hour digital link, the leased line. The ISDN line was also suitable for temporary internet connection; this connection type is also rarely used nowadays due to its slowness and stiff price.

What else is also available on the market?

The ADSL (Asymmetric Digital Subscriber Line) technology, with the help of which high bandwidth, digital data transmission, i.e. internet connection can be realised through telecommunications phone networks.

The cable modem that is mostly available through a cable tv network, may also provide tv broadcast and phone line that can be potentially supplemented with an internet service, too.

The microwave technology that uses electromagnetic waves instead of wired connection, for which it can be installed faster.

The satellite internet that offers first of all service in rural areas that is not covered by cables.

The optical internet, where communication takes place on glass or plastic cable by using light signals. Currently, this is the fastest available private internet service.

The mobile broadband connection ensuring mobile internet access to the world wide web and its services. A portable device gets connected directly to the wireless network; this device can be a mobile phone or a mobile internet modem, too. It is a rapidly developing field, since due to the portability of the service, it comes more and more to the fore, thus the differences between a mobile internet and a wired connection fade more and more. In case of mobile internet type of connections, appliances suitable for mobile internet usage are able to implement simultaneously several types of data flow parallel, e.g. e-mails, internet browsing, and video phone calls.

The popular name, WiFi or wi-fi stands for a widely spread standard performing wireless microwave communication. It is a wireless local network implemented in homes, community spaces, offices, public spaces, e.g. public places, airports, restaurants, hotels, which further shares the existing service and with the help of which the users may get connected to the world wide web with their devices. Its setup may include open or public network that can be accessed and used by anybody without limitation, and closed, i.e. private network, which is secured by a password, thus one is only allowed to connect to it if the password is known by him/her, as well as the combination of the previous two, which contains certain limitations.

4.4. How shall we select an internet service provider?

There are already several companies offering internet connection and other internet usage related services on the market. Let us see what we need to pay attention to, if we want to make a good decision.

- ✓ Let us select a company that provides service in our region and in our settlement. It seems a basic requirement, nonetheless we can easily get it wrong, if e.g. we choose a mobile net service provider based on the rest of the parameters that seems to be favourable, who is only able to provide no or low signal strength due to its insufficient infrastructure in our settlement,
- ✓ we could get high bandwidth at favourable price,
- ✓ there should be the least possible difference between the nominal and the guaranteed download and upload speeds indicated by the service provider, since in reality we can only build on the guaranteed one,
- ✓ data download should be limitless, if only fixed amount of data can be transmitted, there should not be an overcharge fee,
- ✓ we should be encouraged to order several services from one service provider, e.g. internet, tv, phone; package prices are generally more favourable than individual services,
- ✓ we should get the services for low connection fee,
- ✓ the service should be long lasting and stable,
- ✓ the troubleshooting time undertaken should be short,
- ✓ its client service should be available within the broadest interval possible, e.g. during the weekend, too.

5. The world of applications, programs - search, download, usage

If we already have our device and internet access, we have nothing else to do than to acquire the tricks, security and etiquette rules of orientation within the virtual world.

5.1. Browser Programs

Nowadays there are more and more programs available for us, with the help of which we can access or download websites. These programs are jointly called browsers.

The most well-known browsers include: Microsoft Internet Explorer, Opera, Mozzila Firefox and Chrome which is perhaps nowadays the mostly used browser and which will be introduced by us below, too.

5.1.2. Navigation on sites

When we open our browser, we get to the so called home site. It can be set automatically or it can also be a site chosen by us. This is where we can start out to find adventures or to "surf" in the world of internet:

- ✓ WWW sites contain not only texts and images, but also references, so called links that will lead us to further topics. These links have some emphasis on them, such as an image or object, but they can also have different colour and/or underlined parts of texts. If we hover our mouse over such an emphasised part or reference or link, the mouse cursor will change into a hand. By clicking on the link, we will be able to display the related site.

- ✓ During browsing, with the help of the back/return key appearing in the header *(left arrow; if we hover over it by our mouse, the description of the key's function will get displayed),* we can go back step-by-step to each site visited before.
- ✓ With the forward key *(right arrow; if we hover over it by our mouse, the description of the key's function will get displayed)* we can jump to the sites downloaded before any return steps.
- ✓ If the visited site is not quite interesting for us and it already becomes clear for us during its loading, we can terminate the download by pressing the exit button *(the button forming an 'x' during the loading, which is located to the right, next to the forward button).*
- ✓ If downloading a site is terminated or we terminated it, the re-reading of the content of the site can be requested by the Update *(the button forming an 'x' during the loading, which is located to the right, next to the forward button, forms a round curved arrow after loading the site)* button.
- ✓ If we want to get to another internet address, let us type its address into the address bar (the long field of the header where we can type) and let us press the ENTER key.
- ✓ If our browser, utilising the previous proceedings, during the typing, tries to supplement the text being typed by us at that time with the addresses of the sites we visited before, let us press the ENTER key, if we find the address displayed in such a way appropriate or let us continue typing, if we are not looking for that address.

5.1.3. Opening a website in a new window

If we want to open a new window in a way that the currently displayed window will also stay active, today it is not necessary already to open our browser program again and again, we only need to click on the '+' button next to the address of the current site in the header bar. The current site will automatically appear in the new window. After that, we will be able to manage the new window absolutely independently from the original one.

5.1.4. Entering an address in the Favourites

In the course of browsing, we can save the address of the active site among our favourites/bookmarks in order to make it easier to return to this site, with the help of the button forming a star near the address bar. If it is necessary, we can modify the site's name on the displayed dialogue panel.

5.1.5. Downloading files

It is enough to click on an appropriate link on a website in order to download the files we selected on the world wide web on our device or in a storage. We should, however, pay attention not to download any virus with the file we wish to download. The best way to download programs is to download it from the official site of the program's manufacturer, then having downloaded it, check it with an anti-virus software.

Download may take time from a few seconds till even a few hours depending on the size of the files and the bandwidth of the internet connection available for us.
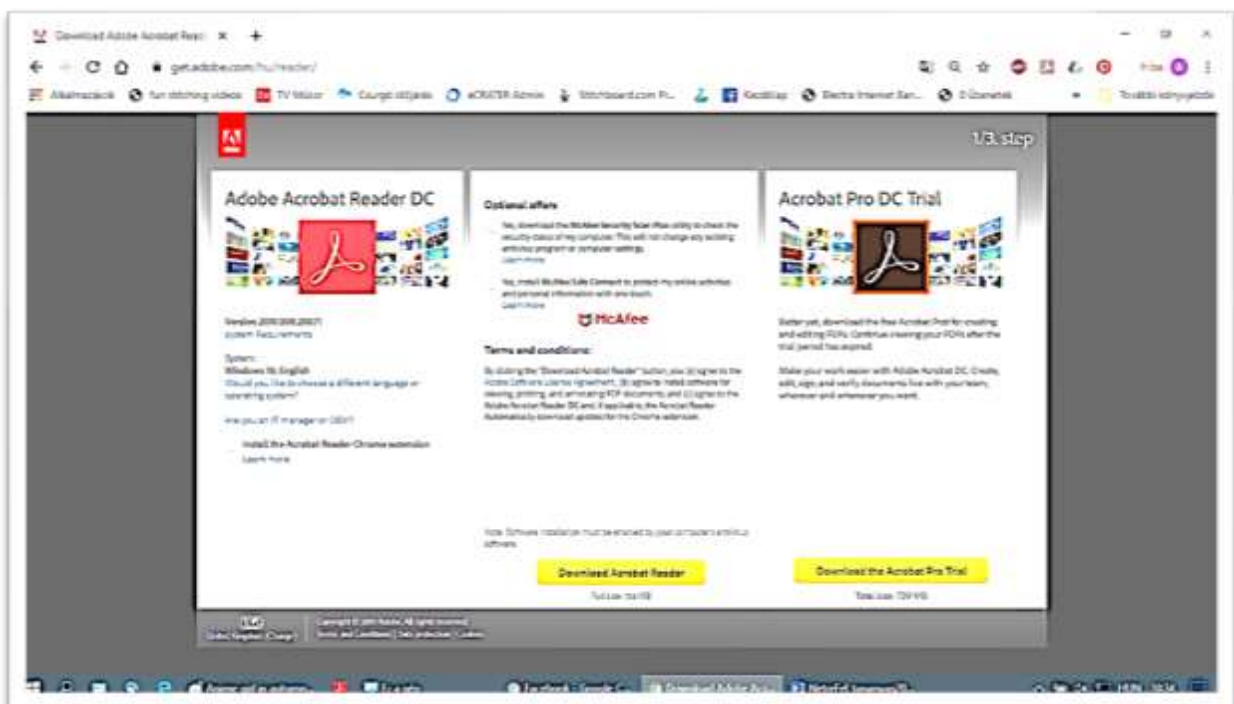
5.1.6. Saving sites

If we want to access certain sites also without internet connection, it is worth downloading and saving them on our device! We can perform the saving with the Save as command on the menu bar appearing upon pressing the right button of our mouse when it hovers over any point outside the manager bar of the window.

We have the possibility to save all the content of the site, but it is also possible that we only save it in a text file format, if the information we want to use later was in the text part.

5.1.7. Saving images

We are able to initiate saving an image with the Save image as command on the menu bar appearing upon pressing the right button of our mouse when it hovers over any point of the image.

5.1.8. Copying part of a text into a file

If we want to copy part of a text, let us select it with our mouse and select the Copy command from the menu bar appearing upon pressing the right button of our mouse. Then let us hover over the point of the document where we want to insert the text, let us click again with the right button of our mouse and select the Insert command.

5.1.9. Printing websites

Browsers enable us to print the sites visited by us (if we are equipped by a printer.) In order to achieve that we need not do anything else, just click on the Print command on the menu bar appearing upon pressing the right button of our mouse when it hovers over any point outside the manager bar of the window and start printing with the help of the pop-up print panel.

5.1.10. Search

"Search servers allow us to search information on the internet based on various considerations. Search servers are computers with especially high performance, which are maintained by different service providers. Some types search according to topics, while others based on the texts of websites. Search servers generally only store the addresses of the sites containing the searched information."[5]

We differentiate between two types of search servers: search servers searching according to topics and search servers searching according to content. Servers performing searches according to content are also called search engines.

5.1.10.1. Searching according to topics
Using thematic search servers or otherwise the ones searching according to topics, we will generally find certain WWW sites' addresses listed in pre-defined categories. These search servers make endeavours to collect all the sites belonging to a topic.

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[5] Ministry of Information Technology and Telecommunication (2007.) Information and communication
Microsoft Windows XP Curriculum

Thus e.g., if somebody is involved in studying English, he/she will find collected together all the language schools teaching English, language lessons for beginners, workbooks, and places where they sell books. In essence, we can find sites with thematic collections to almost every theme. We will find several so called links on them. If you click on these links, you will be redirected to a new site, namely e.g. to the website of the language school indicated in the link.

The most well-known such servers include for example the Hungarian HuDir, Magellán, Góliát and the English ones include Yahoo, and Excite. If the number of sites found is more than the number that can be listed on a site, the search server will display the particular links over more sites. We can change between sites by clicking on the site number links and Previous/Next links located at the bottom of the site.

5.1.10.2. Searching according to content

Upon searching according to content, the search server searches for the given keyword in the text of each site.

If we know what we are looking for, we can easily find it with this method. At the site that can be accessed at the google.com address, let us type the one-two words in the empty field that might help us in finding what we are looking for. E.g. if we want to know when did e.g. St. Teresa of Calcutta live, we can enter: St. Teresa of Calcutta. We will get several hits, including some about St. Teresa of Calcutta and a lot of other things, too, e.g. the links of sites describing the life of St. Therese of Lisieux. We select the right one and by clicking on it, the site that contains the life of St. Teresa of Calcutta will open.

It might happen that we want to view an image. In this case, we can use again google.com, but if we set 'Pictures' at the left side or on the top – by remaining with the previous example – we will get a lot of pictures about St. Teresa of Calcutta. Similarly, we can search for a map.

Among such type of search servers, google.hu is a hotshot, but there are other search servers, too, e.g. the Hungarian Heuréka, the search server of Index, Vizsla built in the origo site, as well as the English AltaVista, where however we have the opportunity to perform search filtered to Hungarian sites. With most of the search servers, we can perform generally both search by topics and by content.

6. Electronic correspondence

With digitisation, communication has radically changed!

A few decades ago, we still wrote letters, sent them by post, waited for the answer that arrived after days or weeks. We sent postcards from the vacation, telegrams for birthdays, weddings or funerals and we thoroughly considered – due to the costs – how long to talk to our loved ones over the phone.

The most obvious way of keeping contact today is over the phone and by sending e-mail messages, however there are stronger and stronger challengers both for traditional and mobile phone calls, and for e-mails. Wired phones are put into the shade by mobile ones, while the place of mobile phone calls is increasingly taken over by certain chat applications. With these applications – beyond the costs of the data flow over the internet – it is possible to chat, in writing, in word, in video – either in two, or in a wider circle, free of charge.

Furthermore, certain chat applications also take care of those, who want to call wired or mobile phone numbers as they make that also possible.

Despite the above, e-mail is still the primary solution of the current private and office correspondence, although the representatives of younger generations already often regard it obsolete, too, for us it is still worth getting to know it, and all the more so, because later on we will see that having this knowledge will be inevitably important to conduct official issues!

The advantages of e-mail include: it is fast, it gets even to the furthest point within minutes, and we can send attached files, too.

6.1. E-mail systems

Currently almost all internet users have already one or more e-mail address(es), electronic e-mail account(s) stored on a mail server.

We have collected below the contacts of some free mailing systems.

6.1.1. Gmail.com

It is easy to manage the Gmail's system: it is safe, if there is demand, even a multistage login process can be set up. It means that as a default we login by entering a password, but upon request, the system also sends an sms-code to our smartphone after entering the correct password, and we will be able to see our letters only after entering that. It also ensures 15 GB hosting and the option of sending giant files free of charge, it can be used simultaneously on smartphone, tablet, personal computer, and laptop.

6.1.2. Yahoo.com

It is not too widespread in Hungary, but it is a modern, easily usable mailing system. We can attach maximum 25 MB data to an e-mail message, but by using a built-in giant file attaching tool, it can be extended up to 100 MB. If we do not enter the system for 12 months in a row, Yahoo will suspend and permanently delete the account. It supplies 1 TB hosting to our messages.

6.1.3. Outlook.com

Earlier it was known as Hotmail. It is not too widespread in Hungary, but it is a modern, easily usable mailing system. Currently we can choose from several endings when creating our e-mail address, e.g. @hotmail.com, @outlook.com or we may even select @outlook.hu. Outlook.com ensures five gigabyte hosting, the maximum size of attachments that we can send is 25 megabytes. The account is deleted after 24 months of inactivity.

6.1.4. Freemail.hu

The Hungarian freemail provides 10 GB hosting and it is possible to transmit 1 GB files. One of the disadvantages of the system is that inactive accounts permanently and irrevocably are deleted by the system after 90 days. From among the experts, quite a number criticise that it does not follow the international standards, that is why e-mail messages do not arrive in the accounts from many popular foreign systems.

6.1.5. Indamail.hu

Modern, Hungarian, an easily usable mailing system. It provides 2GB hosting and it is possible to transmit 1 GB files with it. This mailing system is available from mobile appliances, without installing a specific application.

6.1.6. Citromail.hu

Hungarian mailing system, with 2 GB hosting. From among the experts, quite a number criticise that it does not follow the international standards, that is why e-mail messages do not arrive in the accounts from many popular foreign systems.

6.2. Google registration, Gmail

If we want to use an online mailing system that can be handled easily, that offers appropriate size free hosting, that can be synchronized with mobile phone, we recommend choosing Gmail, Google's mailing system. If we get to know the process of setting up, i.e. registering through this, practically we will have acquired the use of all the online mailing systems, webshops and other services that require registration.
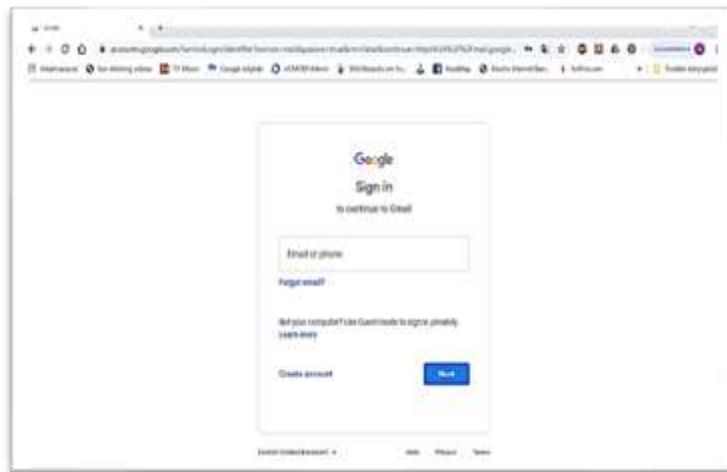
In order to have a Gmail e-mail address, we need to set up a Google account at the accounts.google.com site:

- ✓ as the first step we need to enter compulsorily our name, birth date and sex,
- ✓ we also need to provide a username, which needs to be considered well, because this will be put in front of the @ in our e-mail address! It seems to be logical to use our name. However, due to the popularity of mailing systems, it might easily happen that the username is not available. We should not make the same mistake that due to the first failure we select a funny or annoyed username, e.g. "itwillbegoodforyou" or "iamaverybigdude" because with this we limit the later usability of our e-mail address. Let us be creative, put a period between your family name and first name, let us supplement our name with a number that is important for us, at least with a two digit one, e.g. the number of our grandchildren. In accordance with this scheme, the username of granny Dear Mary who has 7 grandchildren may be in this way: dear. mary07.

From the created dear.mary07@gmail.com e-mail address we may bravely keep contact with our family members, acquaintances, and we can also manage our official issues online later with its help in a way to be learnt in a later chapter.

✓ Then we need to enter our password. Selecting the password requires even more caution than the username! In order to protect our data, it is important to have a secure password that others are not able to hack, which contains numbers, special characters, and upper case and lower case letters. A good code not only meets this requirement, however, but it is also easy to remember. Let us see, how we can get one! It is a golden rule that it should not be no way the same as our username. Let us forget the names of our family members, and pets, the birth dates are not good, either. A solution something like that: 12345 is one of the worst solutions, since such simple passwords, although they are easy to remember, can be hacked very simply, even a free software can do that. What should it be then? An old beloved, but already not used pet name of ours can be perfect after recharging! It should consist of minimum 8-10 characters, with lower case and upper case letters, and it could also include some special characters and numbers… With continuing our previous example: for Dear Mary Molly_Granny07 could be an ideal password. And if we make it stronger with the trick that we add the currently used system's name to our topical password, we will surely avoid that upon hacking our registration all our passwords wander to someone else's property. So our Mary's password will be on a Gmail interface Molly_Granny07Gmail, while on Facebook Molly_Granny07Facebook, and if she registers in the Otto Webshop for the purpose of buying clothes, the password will change to Molly_Granny07Otto.

✓ In case we have found the appropriate password, in the Google system's registration we only need to click on the "Next" button and accept the General Terms and Conditions, where clicking on the "I agree" button means that we have already accomplished the set-up of our Google account. It is not so complicated, is it?

By using this username and password pair, from now on we are able to log in at the www.google.hu site, in the upper right corner. If login is successful, we can see the initial of our first name in each Google related site in the upper right corner. When we click on this icon resembling us, in the lower right corner of the pop-up window we can also exit our account at any time with a click.

Our Goole account has several functions. We can use the calendar function to arrange our days, a hosting or drive service also belongs to our Google account that we have already got to know previously, we can browse the news, the maps, but what is the most important for us right now that we automatically get an e-mail address ending with gmail.com. On the accounts.google.com site, we first enter our username, then by clicking on the "Next" button we enter our password, too and the mail box of our mailing system opens up.

Mailing can start, since from this moment we have the opportunity to send letters – even to multiple addressees, by attaching documents, images etc. to them – and of course to receive letters, too, from all those with whom we shared our email address!

A few practical info and tricks:

- In the recipient field please enter the letter's addressee's electronic e-mail address. We can add several addresses divided by commas (,) or semicolons (;).
- We should write a few-word reference in the Subject field concerning the content of our message. We can type the text of the letter in the empty space under the Subject field.
- In electronic correspondence we can often omit formalities that are usual in postal mails, but at the same time one can find symbols that are unusual in traditional letters. Symbols expressing the emotions and emphases of the author of the text are called smileys. These are for example: :-) smiling:-(sad,:-O shouting,;-) blinking.
- We have the option of formatting the text part of our letter, selecting the font type, -colour and -size that we like or regard practical, if we want to emphasise a part of the text, we can make it bold, italic or underlined.
- We are able to attach documents, tables or images etc. … to the text part of our letter, but we can also insert references – links, too.
- However, some etiquette rules need to be fulfilled even in the course of electronic mailing, which we will get to know in more detail in the Netiquette chapter, but it is worth reviewing the most important ones here even right now. In the content related questions of the communication over the internet the Netiquette is governing which is implicitly accepted by the users for controlling the use of the network. The rules of paper based correspondence are well-known. Basically, these must be met even in electronic correspondence, too, even in the case, if it can be stated that electronic correspondence is much less formal than traditional, so it is less compulsory to insist on conventions, for example in Hungarian using first names are more frequent. Nevertheless, everybody should decide on his/her own, to what extent he/she will use this freedom.

- ✓ Never write anything that we would not send on a postcard!
- ✓ Do not forward chain letters!
- ✓ Do not write peppery (hot tempered) letters!
- ✓ Do not write only using capital letters, because it feels as if you were shouting!
- ✓ Indicate briefly the content of the letter in the subject field!
- ✓ Let us answer the letters as quickly as possible!
- ✓ At the end of the letters, it is good manners to provide briefly our name and e-mail address!

7. Netiquette

Digital etiquette = Netiquette (it has English origin: network etiquette), these are the etiquette rules of the communication over the internet, or how we shall behave in the digital space!

In the digital space, while surfing, reading forums, browsing on community sites, while using desk top computers, laptops, and other smart devices there are written and unwritten behavioural rules, meeting them is our own best interest.

Real life represents the basics, what it does not fit in the real world, cannot be permitted in online environment either:

- ✓ In the digital space, protocol frames are looser, but they exist, e.g. we should not use first names for everybody, only in the case when we have already agreed in it respectively beforehand, we should always greet each other at the beginning of a chat and say good-bye at the end, let us express ourselves clearly and briefly.
- ✓ It is a general rule not only during sending and receiving e-mails that if we write only using capital letters, it feels as if we were shouting. It does not put emphasis on our message, instead it is regarded as flout!
- ✓ We should always respect others' individual rights, privacy rights, private sector, and properties.
- ✓ What would be painful for us, what would hurt or offend us, that would likely to be also painful, offending or hurtful even for others. We should not forget it when we write comments on community sites or when we share content, videos or images that we thought to be funny, but which might be offending for others.

- ✓ It is good to know, too, that it is allowed to publish a photo of someoneif she/he expressly agreed to it, in case of public figures, and events other rules are valid, but in everyday usage this principle is governing. If somebody finds it very important to fill the internet with his/her own photos, it is possible, but it should stay within the limits of moral. When you share your child's or grandchild's photo, always consider it, too, that after a few years, when the baby grows into a schoolchild, how much will he/she happy, when his/her friends discover his/her naked photos that are otherwise very cute. Similarly, it is worth being careful with sharing" hardly swimsuit pictures", i.e. too sexy photos, it should be especially avoided in case of children under the age of 18.

- ✓ On social networking sites – mostly for our own good – let us publish only photos, and posts that we would undertake anywhere, anytime, accompanied by anybody, which do not shock the acquaintances, which are neither vulgar, nor intolerant or racist.

- ✓ Chat applications used on computers, smart phones are extremely popular and very practical, too. They can be utilised for personal or group communication very well – but if somebody without any specific reason all the time writes messages to his/her friends, he/she may easily get on their nerves. Of course, sending intruder text or image messages should also be avoided.

8. The rules of secure usage

When accessed to the internet resources, we meet plenty of information, but during browsing, or mailing many types of attacks may hurt us, if unprepared. While it is obvious that we lock the flat's and the car's doors, and our valuables aren't left on the rear seat, we often leave our computer and mobile phone unprotected despite the fact that the question of security is massively important in the digital space.

But what can we do preventing damage? Basically two things:

- ✓ Think for the protection of our devices,
- ✓ Think for the protection of ourselves and our data!

8.1. Protection of our devices, viruses, anti-virus software, firewalls

When talking about achieving security of our devices, first of all their physical protection pops into our mind. It is already almost natural that we protect our desk top computer similarly to the television from overvoltage, e.g. by inserting an uninterruptible power supply, that we protect our tablet and mobile phone with screen foil and shock resistant case from physical damage, but tempted to forget that in the digital space most of the cyber threats come from non-physical injuries. It is important to get to know these threats thoroughly in order to avoid them!

8.1.1. The world of viruses

8.1.1.1. What is a virus on the computer?

A virus on the computer is a program or program detail, that multiplies by copying itself. Its effect depends on the intent of the person creating the virus. There are hackers who only play a joke with us, but there are some who are set to cripple our data files or even the whole computer. There are viruses that get active immediately when downloading starts and there are ones that only got activated in connection with certain events, e.g. Friday, on the 13th.

8.1.1.2. How is it possible to get a virus?

Viruses are not able to appear in our computer on their own, data transmission is required to it. Data transmission may take place during the use of any data carrier device, such as a pendrive, CD, external Winchester etc. But it might also happen over an unsecured internet connection, or we might download infected files in the course of electronic mailing.

8.1.1.3. Warning signs

If we experience some strange, unusual, unexplainable anomalies, we should suspect of virus infection immediately.

These include:

- ✓ the programs load longer than usual,
- ✓ strange error messages appear,
- ✓ the memory range, the free storage space has decreased,
- ✓ the Winchester apparently aimlessly works for a long time (while we do not run any other program),
- ✓ files seem to disappear,
- ✓ freezing gets frequent.

8.1.1.4. How can we avoid viruses?

First of all, let us use virus alerts, virus killing programs, some of them are available free of charge, in order to find them, we may surely use the search engines and refer to forums! Do not forget to use the firewall either, as well as observing the advices detailed in the following chapter!

8.1.2. A few good advices for everydays

Observing these simple rules combined with the use of the firewall and the anti-virus program will make the risk of our devices getting infected minimal!

- ✓ The simplest prevention is, avoid putting unknown data carriers into our computer, keep away from copying or downloading programs from the internet of uncertain origin to your Winchester. If we do not know it for sure that program we wish to download is reliable or not, let us write the program's name into our favourite search engine and look for whether someone has reported that it contains spyware.
- ✓ Do not regret the time! Read all the security warnings related to the downloaded program, licence agreement and privacy statements.
- ✓ Beware of the popular file sharing programs offering "free" music and films and thoroughly study all the software attached to the programs. Turning again to the internet community for educating ourselves and following the security messages on the forums helps us before downloading!
- ✓ Use legal software!
- ✓ Comply with basic data security principles, check your backup data regularly!
- ✓ Take care of setting up appropriate firewall! A firewall may regulate and/or limit data flow between our computer and the network, it is actually nothing else than a software-based security system dividing the two systems.
- ✓ Do not open e-mails received from unknown people and/or e-mails with suspicious content or format.
- ✓ Do not open e-mail attachments directly from the mailing system! Save it instead to the hard disk, and open the file only there! Since the anti-virus software may recognise the virus during the saving, and is able to interfere.
- ✓ Regularly run online virus scanner program on your computer – set the search to the deepest and broadest possible, so that all our files get checked and the program also filter spyware – with search word search we can easily find a comfortable one for us.

✓ Having experienced anomaly, turn to an expert to avoid a bigger damage!

In summary, in order to have effective protection it is expedient:

- to use a firewall;
- to use an anti-virus program and to continuously update its database;
- to use an anti-spyware and to continuously update its database;
- to take the appropriate precautions.

8.2. Protecting ourselves and our data

It might not be enough to use the above mentioned anti-virus, anti-spyware software and the firewall, our protection is all in vain, if as a result of our carelessness we might become the victims of fraud during our activity on the internet!

It is important:

✓ Use strong and changing passwords at each registration with the method we've outlined before.

✓ Do not disclose personal details neither in e-mail, nor on a website, if you do not know the person requesting it.

✓ Collect data about the sales company or the seller in case of shopping on the internet, e.g. have they been on the market for long, are they reliable, do they use encryption. We should use our own computer for shopping; we should not place orders at public places. If we are often shopping on the internet, it is worth ordering a web card.

✓ If we connect to the net at a public place, before doing that, we should thoroughly read the privacy statement, and make sure that we are aware which files will be saved to our computer, and what type of information will the service provider of the network collect on the computer.

✓ Whenever it is possible, exclusively connect to wireless networks that demand a network security key or any other type of security measure, e.g. a certificate. Information sent over such networks is encrypted, what helps us preventing the computer from unauthorised access. When you display the available wireless networks on the Connection to network dialogue panel, a yellow shield like icon indicates the ones that have not enabled any security option.

- ✓ When connecting to an unsecure network, we should be aware of the fact that people having appropriate devices will be able to see each operation, including the visited websites, the opened documents and the usernames, and passwords used during the work.

- ✓ The internet, the online world is a perfect interface for acquiring knowledge, getting to know each others' thoughts. However, with the transformation of the media, the relationship between the news and the real facts has also changed sufficiently: currently there are more and more concerns about fake news that are able to spread similarly quickly through the shares in the community media as their real pairs. Consequently, it is always worth reading the found information with criticism, trying to seek confirmation on their reality content from several resources, not regarding everything automatically as being facts, especially when they may directly influence our life!

- ✓ The internet, the online space allows for a certain level of anonymity, which is useful in some cases, but in others can hide much risk. There are several people present on the community sites with fake profiles, including ones who use these sites for dating or for the interception of others' habits, that is why it is important to only accept the friend invitation of those whom we really know, and transmit the doubts to our grandchildren and children, too. It is obvious that with our social behaviours we never want to annoy or irritate anybody, it is likely that we do not send friendly invitations to unknown people. If you are invited by unknown people, calmly ask back: who are you? Where do I know you from? Such a question may evoke some uneasy moments, when it turns out that we have not recognised one of our old classmates, colleagues, but maybe this makes the lesser of two evils.

- ✓ Do not shoot and share photos that may give rise to abuse in the future.

- ✓ Do not shoot photos in your home carelessly, e.g. we should not shoot a photo even involuntarily in which it can be seen, where we put the money at home or where we keep the car's spare key.

- ✓ At the community sites do not fill in each existing test – we can live splendidly without „knowing", our former Indian name or what princesses we could have been, if we had been born three hundred years ago. These "tests" mostly serve the purpose of their creators to collect and analyse opinions, behavioural samples.

- ✓ Anyones's thoughts learned from texts, and presentation materials, photos, figures, drawings – even the music pieces, books, and films, too – in most of the cases are owned by the author or the original publisher.

You may refer to these materials, you may share them, you may "share a link to them"– but never say that these are your own creatures. We should use references to the resources on the net, too!

9. Online administration

For several of us it is very stressful, tiresome and time-consuming to stand in a queue while administering our issues at customer services with respect to any public utility, banking, municipality or state issue. At the same time, it is compulsory and very costly for service providers, public administration organs to maintain customer/client services ensuring personal service.

The introduction of customer/client services via phone accelerated the process of administration, but online administration can be a much, much more effective solution than this. If you use online administration, you need not travel, should not wait for the clerk, there are no opening hours, it is much easier to get around in the menu system than via the phone. In the Client gateway operating in public administration or on online sites of several companies, you can implement by a few clicks the things that would require several hours and personal presence. In case of online administration, naturally the key-question is the client's identification, which is of primary interest both for the client and for the service provider.

After identification, through the online customer/client services it is possible to administer practically any issues, today it is already possible to open a bank account without personally being present – with the help of a video identification process. All the above mentioned save time and money both for us and for the service providers!

Let us see, how we can be part of the new type of administration!

9.1. Performing Administrative Tasks Comfortably

Being a client in offices trying tor resolve administering issues many times proves to be a lengthy and complicated process. Just think of requesting a simple bank account extract or administering of an electricity and gas service or the reconciliation of a phone bill. While visiting customer services or official departments we are often confronted with frustrating experiences like queueing endlessly and not finding a competent employee.

Even the simplest cases often require progressing from assistant to assistant, filling in several forms, providing plenty of data.

Furthermore, many of us need to travel to get to a bureau, that needs time and money, "it costs a lot". No wonder, if administration belongs to our tasks that we love the least. But it is possible to do it much simpler.

Nowadays service providers can be reached via phone customer/client services, but their menu system is often complicated and the waiting time is lengthy, consequently, it frequently proves to be an annoying task, sometimes we feel as if we could be better off if we had visited the service personally.

It is important to know that equipped with a bit of courage, and a little bit of knowledge the online management of the issues can be carried out through the service providers' website. Here you need not wait for the staff member, there is no opening hours, and in several cases it is simpler to find our way around on the websites, than in the phone menu system. We can access the internet during the weekends and late at night or even at dawn when we feel like taking action.

Administration may take place in an offline way, i.e. without any direct contact with the bureau. In such a case, we simply download the necessary applications, forms, and entitlements from the internet. Having printed and filled them in, they immediately become submittable by post or even in e-mail after scanning. In this way we can accelerate the process and just wish the feedback will be delivered with high quality and in a timely fashion.

From the sites of particular government institutions and authorities (e.g. tax authority, health fund, work supervision boards) filling forms are required to entitlements, certificate requests, applications, reports, that can be downloaded very simply, without logging in, and any data reconciliation.

 Compared to this way, the online handling of administrative issues is still a bit more complicated, but hopefully soon the systems will improve in line with the higher levels of user skills.

We are capable of managing several services through the sites of state institutions, such as like:
- ✓ tax issues, e.g. income declaration, tax return, application for a tax certificate, checking tax bills, reporting changes in our data

- ✓ court issues, e.g. request for a certificate of incorporation, data reconciliation, appointment request
- ✓ issues under the civil status record,
- ✓ issues connected to entrepreneurship, e.g.: modification of the scope of activities, obtaining a certificate
- ✓ issues related to motor vehicles, e.g. administration of car registration certificate
- ✓ using and tracking health insurance services, e.g. during the tracking of the course of life of a patient, we can check what health care services we have already used
- ✓ pension fund issues, e.g.: reconciliation of the periods of service, pension payment administration
- ✓ insurance related issues, e.g.: taking out and cancelling an insurance, reporting damage
- ✓ issues related to personal identification documents, e.g. data demand, appointment request to the office of government issued documents
- ✓ higher education admissions
- ✓ etc. ….

Besides the state institutions, there are several service providers ensuring opportunity for online administration. We can use multiple banking services on the banks' websites; that will be talked about in detail later on.

Through the websites of the electricity and natural gas service providers we are allowed to report of the status of the electricity meter and gas meter, we may retrieve our statement of account, and we can also check whether our bill payment has been received or not. We have an opportunity to make an appointment for personal administration, and we can report if we have any changes in our details.

On the website of the telephone service providers we can perform the reconciliation of our prepaid phone, the billing issues of the phone subscription, and we may also order new services, just like at the websites of the cable service providers and the internet service providers.
Today it is already possible to get access to the online catalog, prolong and reserve books on the websites of the majority of libraries, concert tickets can be ordered from ticket offices' websites and returned, and easier transport is helped by booking bus and airplane tickets online, too.

The online world offers us several opportunities to make our everyday life easier, it is worth discovering the services of the digital world.

9.2. Administering issues in a secure way

When we want to administer issues on the internet interfaces of service providers or public administration institutions, we will need to register. In most of the cases this is a simple identification process, where personal details have to be given on the service providers' website, but it might also be a requirement to have a preliminary one-time registration in person at the customer/client service or in the office of government.

After accomplishing identification, our issues can be managed on our own with our username and password.

Upon the first login it might happen that checking needs entering our details, our client identification number, contract number or our documents' number – just guaranteeing safety.

During the online administration process the websites' menu systems will behave user-friendly, and help guiding the clients and providing support if needed.
Failures can be remedied, undone, redone, then later, in the further procedure of the administrative process the organisation itself will indicate the error and provide a new opportunity for correction.

If we still cannot find our way on the website, it is worth checking whether there is a possibility to use direct chat (brief text message) or whether there is a customs/client service over phone, since asking for help is never a disadvantage.

As we finished our administration task, submitted the application, or finalised the report, we have nothing to do until the service provider's feedback. It happens sometimes that we receive a simple system message, but it might also happen that we are informed via phone or e-mail how our current issue progresses, whether there is any need for clarification or for the submission of additional documents.

If the system seems to be threatening for the first glance, we should not get discouraged. Let us consider how much waiting time and money we can save up, and in addition through the system messages we are continuously informed how the administration progresses.

In case of online administration, the most frequently asked question is who may use/sell/give away our personal data how, and whether there is anybody who could trespass with them. When we deal with financial issues or we can register by entering our tax identification number and our social insurance number, or we might need to provide our identity card number, residence address and phone number, it seems to be rightful to worry, since in itself the handling of these data might hide countless risks.

Nowadays, however, in addition to the fact that there is legal protection of the privacy of data usage, each service provider ensures data protection, thus there is nothing to worry about.

However, we call your attention to the fact that if you register at various sweepstakes, they will surely utilise your private details for promotional purposes, even in the case, when enrollment for the sweepstakes has been done through the website of a bank, insurance company or other service provider. So, it is worth paying attention where and for what purpose we share our credentials.

It is also important that having stored our username and password given upon registration securely, we never disclose them. Even the official sites and the staff members are not allowed to request disclosing our login data.

During online administration we are required to meet the NETIQUETTE rules, let us try to express ourselves more clearly, avoid negative or hurting words, make efforts to communicate politely, let us remember that humanss will deal with our application, not computers, thus let us give the same respect to them what we also expect from others.

All in all we can conclude that online e administration is relatively a simple, secure, and quick way of administering official issues, but there are certain safety rules that are worth meeting to ensure efficience and safety.

10. Online shopping

10.1. Shopping on the internet

Almost anything is available on the internet. This is true not only for information, but also for products, which means we can choose from the offers of countless shops, restaurants, accommodation services, travel agencies, and insurance companies online, and we can browse huge online market places distributing several million products to our liking.
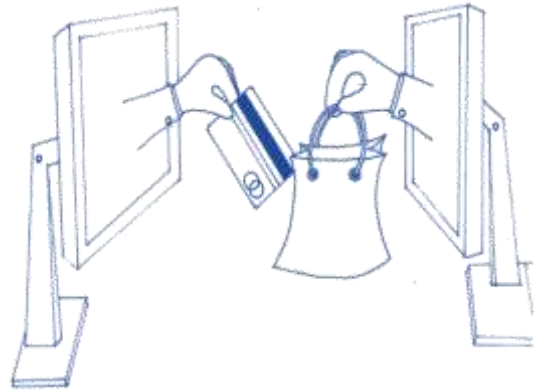
It is almost inconceivable, but within half an hour from our home we are able to order a phone from China, a car spare part from Germany, shoes from America, and a carpet from Africa. Furthermore, all these will be home delivered, and we are able to pay for the products without currency exchange done in an office.

It also happens that we long for a product, has already been selected in the shop, but we are uncertain whether its price and quality are suitable for us. In such cases, before purchasing it is worth collecting information on the internet about other shops' prices, about the brands, in addition, most of the online platforms support the choice of products with customers' comments and reviews.

If we step forward from here and use the online sites not only for getting information, the advantages of shopping on the internet will be soon realised. Upon online shopping, not only the shop window, but also the total stock of the webshop selected by us also appear on our screen, so at home we can comfortably explore everything from our armchair, furthermore we can acquire whatever we need, often at a cheaper price, avoiding complications with shipment, but at the same time by validating the warranty rights. (In case of faulty products, of course, we may exercise the options of return, replacement or refund, and we will get the usual warranty as in the case of purchasing in a shop.)

Webshops, webstores, in another name, online shops as specialised stores mostly distribute one group of products (e.g. clothes, car spare parts, cosmetics, furniture or pet food etc …, while the so called online market places distribute plenty different items originating from several sellers.

If we purchase on the internet, we can choose from not only domestic product assortments, but practically the entire world becomes our commercial space; we are able to order from almost anywhere, but it is important to pay attention to the fact that goods coming from countries outside the EU can be charged with paying customs duties, and the shipping cost may frequently be higher than the price of the ordered product.

In case of products ordered online almost in every case (except for some sales) we need to pay a shipment fee. It rarely exceeds the cost when we need to go personally to a department store. During shopping, however, it is worth checking the discounts concerning the shipment costs (e.g. the shipment fee is more favourable upon ordering more products or there is no fee at all beyond a particular amount limit), but there are also shops where after an online purchase you can get the ordered products in person.

During online shopping, it is quite frequent that we need to register on the website of the shops or online market places, we need to accept the user terms and conditions, and we may also request online newsletters. Each online distributor shall exactly define the payment, shipment, and warranty terms and conditions, therefore let us surely collect information about these before shopping.

We can pay for the purchased products in several ways. Either with the help of our bank card in an online way or by bank transfer on our bank's internet interface, perhaps by paypal (we will write about it in more detail in the e-banking chapter) or with cash on delivery at the time of delivery. The latter one is the most secure method, but currently even online payment takes place in a controlled system, so abuses are rare.

What is worth for our attention:
- ✓ Check the store's details, address, phone number, so to be contacted if problem arises. Read customer reviews, opinions, they will not only help purchasing decisions concerning the products, but also concerning the webshop,

- ✓ Each time read the contractual terms and conditions thoroughly (packaging, shipment cost, shipment term, taking responsibility).
- ✓ If it is possible, try the buy with a lower value purchase,
- ✓ Compare the offers,
- ✓ Keep filing the transactions' time and date and the amounts, save the confirmation e-mails, document the order number, if the product does not arrive in time or defective, or perhaps not the same as what was ordered, complaints need referring to these information. The number of such cases is low, but it might happen.
- ✓ it is expedient to order with cash on delivery, because we only need to pay after taking over the product.

10.2. Places where we can do the online shopping

Currently almost every major trademark, and department store has its own website, thus starting from the IKEA, through the ROSSMAN up to the DEICHMANN we are able to buy from several well-known, reliable retailers and their well-known products.

It is worth monitoring our favourite sites about the sales, and in each case we need to pay attention to the products' technical and other features, since we are not able to try, put on, or thoroughly scrutinize them.

Naturally, we have the option to replace the ordered items, but in such a case, the return cost should be generally borne by us.

Beyond the shops' unique specific product offers, there are huge online stores from global or even country-wide market places, where we can choose from the new and second-hand products of several retailers and wholesalers, as well as private sellers, e.g. EBAY, AMAZON, ETSY specialised for handmade goods, or VATERA in Hungary. On these market places, the product quality is often not controlled, that is why it is worth checking the product descriptions and buyers' evaluations.
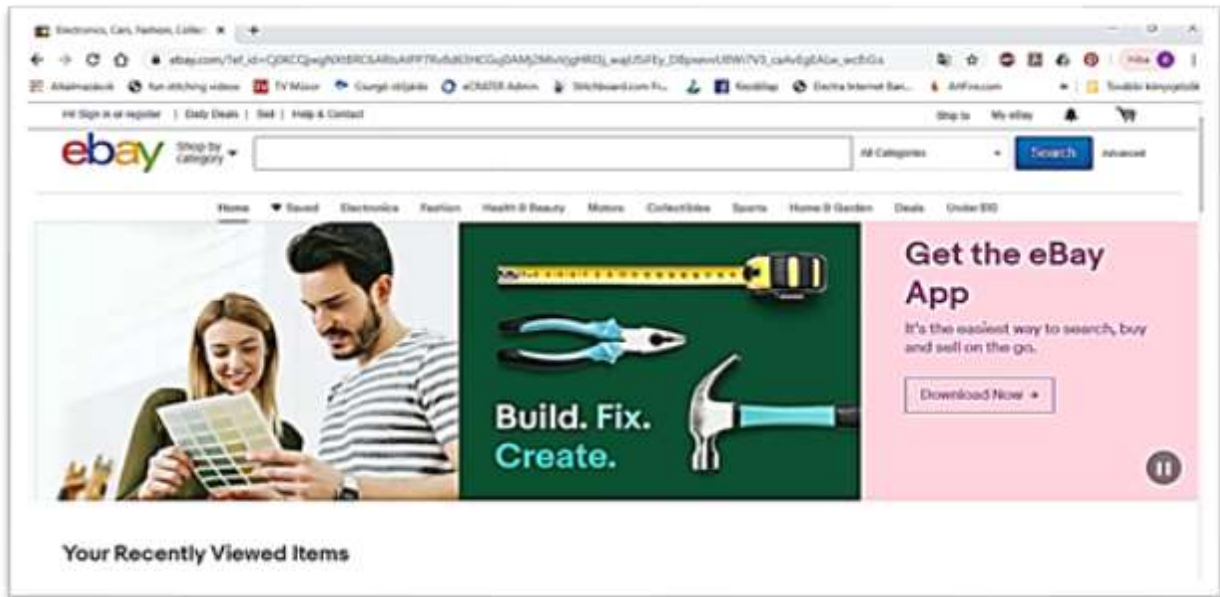
There are even websites that compare the similar products of various shops, accommodation offers, and restaurants based on their prices. These are not the places where we could do the shopping directly, however, these websites lead us to the shop having the most favourable price.

All in all online shopping has been made quite comfortable for us, we may choose from plenty of opportunities, we may often get our favourite products cheaper than in the shops, but at the same time, just like everything on the internet, this also requires caution. Get informed and prepare for each purchase.

10.3. The process of shopping

How do we buy goods and services over the internet? Having chosen the webshop,

- ✓ we select the product we want to buy. Upon selection we are able to set the number of pieces, the colour, size (if applicable) and other supplementary accessories, services (e.g. additional warranty). Just like in a shop, we place the selected product into the basket.
- ✓ we can continue shopping and put other things in our basket in this webstore or we can check out for payment
- ✓ during the payment procedure, as the first step, personal details have to be entered the webshop's online form or register is required. Take care when entering the data, setting the accurate delivery address and the notification phone number and e-mail address is the buyer's responsibility.

- ✓ we select the shipment method and get information about the shipment cost and delivery's expected duration and the date of arrival.
- ✓ we select the payment method, which may generally include either cash upon delivery, bank transfer or payment with debit or credit card.
- ✓ we finalise the order. Before completing it, we may step back and modify the data and other parameters at any time, and/or we may even delete the order. After finalising it, any change can go only through the customer/client service over the phone or in e-mail.
- ✓ If we choose payment with bank card, the system will forward us to the bank's website and we will be able to pay through a secure banking service by entering the card data.
- ✓ If we chooe another payment method or willing to pay online immediately with a card, the confirmation of the order has to get back in e-mail or in text message.
- ✓ The courier service or the forwarding company also sends a message about the delivery date, time and method.
- ✓ When all the steps have happened in an orderly fashion, only the opening and checking of the received package will be left.

If there is any problem with the product (its colour, or its size is not right, it might have some deficiency), we need to contact the webshop and exercise the option of return, replacement or refund, just like we would do it when shopping in person.

Let us be inspired by this cutting-edge services, let us be brave and open-minded, since the whole world out there is in front of us, we can buy anything, from anywhere, without going to somewhere.

11.   Ebanking
11.1. Online banking

We have seen that it is possible to do the shopping and administer issues over the internet, it is expected that we are able to reach banking services by the push of a button, or rather correctly saying: by the click of a mouse button.

We call electronic banking services as e-banking, with the help of which we are able to settle our banking issues from home, comfortably, available 7/24 securely and without waiting time, i.e. we are able to do banking from smartphone, tablet and computer over the internet.

The online management of financial issues equips the users to ask for account information, electronic bank statements, to transfer money to bank accounts, to give ad hoc i.e. occasional or regular payment orders to the bank (e.g. for the regular monthly collection of consumer bills, such as electricity bill, phone bill, internet bills), but we can also pay postal cheques, and monitor the instalment payment of our loans, even making investments is at our disposal. In addition, we can get information about exchange rates, interest rates, and on general banking.

In order to use e-banking, we need to apply for an internet banking service at our account keeping bank, to which we need to sign an agreement, in which the bank guarantees the protection of our data, the security of the financial transactions, and at the same time gives information about the conditions of use.

After having received our username or identification code/number, and our password, with the help of which we will be able to enter our bank's electronic bank menu. During further use, our bank in order to maintain security may send a security code in sms before particular banking services (e.g. transfer), may issue a chip card that protects our financial issues with a digital signature. These security control processes may differ between banks, so it is worth getting information about those when applying for the service. It is very important for us to know that the system of online banking is extremely secure because of the multi-step control (security passwords, sms codes).

Any other person may only access our accounts, if we disclose our sensitive data to them. In one word, we can safely use the service, no one else will be able to access it except for us.
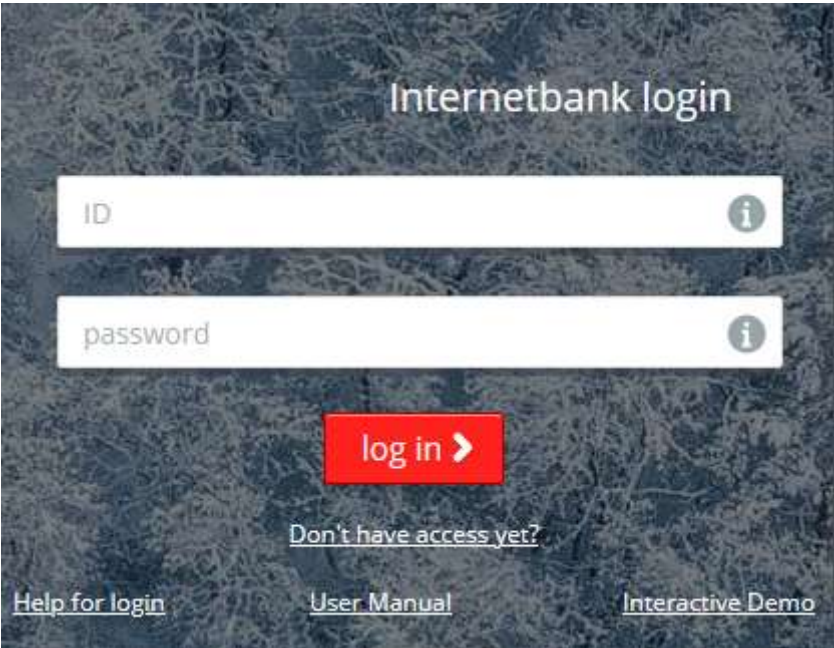
11.2. Online banking steps

1. Connected to the internet, open our browser program and find the website of your bank.
2. Log in on the net bank interface with the help of the username and password,
3. On the screen, a user interface is displayed, where we can select from our accounts (if we have more than one, e.g. savings account, retail current account, enterprise account)
4. Then simply choose from the various services in the menu system
5. if you give a payment order to transfer money or cheque payment, the transaction gets into the service provider's system, after execution a confirmation arrivesfrom the bank.

Quite probably, we have heard that there are some people who are trying to get access to the banking data with malice prepense. Banks do everything they can to protect their clients, but it is worth for us also paying attention to a few simple things:

- ✓ Upon the first use, it is expedient to replace our password given by the bank, if it is not supplemented with another secure identification (e.g. password received in sms). Some banks require the replacement of the password from time to time.
- ✓ It is advisable to remember our password or if you cannot remember it, store the written password at a place where nobody can access it.
- ✓ It is secure to do the banking over the internet from a place, and make sure that no one else can see your username and password on the screen.
- ✓ wherever you do the banking, always make sure that you exit from the banking interface, and never save your passwords on the computer or phone.
- ✓ it is recommended to delete the browser's storage, too, after internet banking, so that no unauthorised person could abuse the data.
- ✓ upon bank transfer, it is recommended always to check the target bank account number and the beneficiary's data. If we find an error or we are uncertain, we have the possibility to correct or delete the transactions.
- ✓ It is important not to tell anybody our electronic code over the phone, in e-mail or even in writing; even our bank is not allowed to request it from us! If you meet such a request, you can be sure that in reality it was not requested by the bank, and you should immediately notify the bank about it, so that it can take the steps necessary in such cases (calling for attention, notifying the police, security steps).

If you observe unauthorised use on your bank account, in each case, notify your bank, but it is also goes without saying to report if elements of the electronic identification (password, username) got disclosed to an unauthorised person. If we entered incorrect login data several times, we generally need to request a new password online or over the phone.

11.3 Paypal and other internet banks

If we purchase online, mainly in foreign webshops and online markets, the option of paying by **paypal** is often offered but may also happen that the seller also enables the use of **Neteller** or **Moneybooker** payment option.

Well, although it sounds strange, in reality these are Internet banks that exclusively operate in the virtual world, and anyone is encouraged to open a bank account in them from anywhere in the world.

Paypal is the most well-known online bank, a financial service provider specialising in electronic commerce. This means that if we open a paypal account and transfer money to it, it enables shopping, and forwarding money to someone else (e.g. to our relatives living abroad). The popularity of paypal is inherent due to the fact that it provides exchanging currencies easily, so if we put HUF or EUR on it, we are able to change it immediately into USD or another currency on daily exchange rate.

The PayPal holds an electronic account for their clients, which they can charge by credit card payment, bank transfer or collection order from their residential or corporate bank accounts. It is not necessary to enter or forward confidential credit card or account details during online shopping, it is enough to enter the PayPal username and password in order to accomplish payment. Of course, it has a condition: the webshop where we want to buy something should be a contractual PayPal partner.

12. Wikipedia, public collections
12.1. Online learning

It happens many times that we hear or read something and get inspired to know more about it immediately, something pops into our mind what we have read or learnt before, but we do not remember it exactly, and we would feel the urge to brush up our knowledge at once. Earlier we referred to books, but in the light of the internet growth, we can quickly get the required information.

In reality, we need not know everything, it is enough, if we know where to find the knowledge, since on the net not only news can be found, but also a lot of other sources, e.g. studies, scientific articles, academic books, video tutorials, films, clips and complete virtual galleries.

All the journals, books, academic articles, audio materials, video records, and images are not available on the internet, despite the tremendous digitization efforts lately. But for the curious reader substantial information can be found about each discipline, event, person, hobby, fact, and current topics in all the languages of the world.

If somebody knows how and where to search, he/she can practically find anything, moreover, even more than that.

We can safely say, today each specific area, principle has formed its own website, which is generally available on our own language, too.

The internet makes it possible to search giant databases of libraries, museums, archives, and universities, studies, articles, moreover, books with full text can be downloaded, training videos and films, video clips are reachable, but just because of the diversity of the available data and materials, and their uncontrolled nature we can frequently find false or deliberately misleading information.
It is exactly why we always need to check the resources' authenticity (who uploaded it, to what site, and from where the information originates.)

If we are longing for more, beyond searching for information or reading, we may even accomplish online courses and can study for qualifications. We can "attend" online road training course or may acquire arts and crafts, DFY techniques, too. Internet and the smartphone applications may give access to materials supporting our language learning and gaining knowledge in varied study areas. The learning programs are available for each age group, and in most of the cases they help us acquiring knowledge and skills playfully and easily.

Of course it also often happens that we only need some simple information, something does not pop into our mind or we do not know how to solve something. In such cases we need not go the book store or the library, it is enough to browse the internet and the search engine of our computer or smartphone immediately will provide an infinite list of results helping. Whether the answers are good or bad, we cannot determine it at once in each case, that is why it is worth browsing several sites over, and read through several resources.

12.2. Wikipedia

When we only need a simple piece of information, e.g. we want to know who Marie Antoinette was, how many films Alain Delon has made or what kinds of species sharks have, it is worth investigating Wikipedia.

Wikipedia is the world's largest online lexicon that is available in 304 languages. The number of entries varies according to languages, thus the main English site under the address of https://en.wikipedia.org contains more than five million and nine thousand entries, while the French site has more than two million one hundred and twenty nine thousand articles, its German co-site contains two million three hundred and thirty thousand, while the Hungarian version has more than four hundred and fifty five thousand entries. (We call entry or article all the descriptions in the lexicons, encyclopaedias and dictionaries, which generally define a notion with more or less details.)

About Wikipedia, it is important to know that it is edited by the readers, i.e. anybody, even we ourselves may set up entries, contribut to descriptions. Due to this, experts often debate its scientific accurateness, but it is a fact that we can find almost everything in it starting from simple notions through autobiographies, artworks, anniversaries up to historical events. If we enter a word or event or a person's name into the google search, in most of the cases among the results we will find a Wikipedia article in the first place. But we can also search in the Wikipedia itself, and what is more, we can see a featured article, some popular topics each day on the main site.

If, for example, we search the name of our settlement, photos about our place of living, quite probably our coat-of-arms will be found on the Wikipedia page, but we can also read about the village's or town's geography and history, too. Sometimes the knowledge given is rather limited but it is a good starting point for those who want to know more about our place of living.

Wikipedia has got a simple-structure, easily manageable sites, with entries. Each entry is called a sheet. The sheets offer simple descriptions with black-and-white text and some pictures. In the text underlined words, notions written in blue can be found signalling links that will lead the reader to newer Wikipedia entries, thus a whole set of information can be collected within a short period of time.

At the end of the sheets, there are references that guide the reader to more detailed information, and indicate some of the original websites of the given topic.

12.3. Public collections

During the 18 and 19th centuries most of the traditional collections of patrons have been transformed into modern libraries, archives, and museums that have grown in numbers and scope constantly. These public collections are owned and maintained by national states, municipalities, universities, local foundations, private enterprises. Today, in addition to these public institutions, virtual collections established on the internet have been joining with the aim of increasing public display of the collected items.

These collections have been established with the purpose of making the cultural and artistic values of a group, a community, a country or a continent available to the public. In this way, we can see from our home, for example on the wga site (In Hungary: http://wga.hu) the artworks of the world's great artists, we can read the classics of the world literature in most of the languages or moving image archives comprising of films, videos, etc. can be visited and used.

Old journals, regional and national newspapers are nowadays are also reachable online in full text, not only in big national databases, but also on the websites of smaller libraries, museums or even municipalities.

We can read local history works on the websites of domestic and international libraries, and full English, German, Portuguese and French books can be accessed on the http://www.gutenberg.org/ site, while Hungarian ones in the Hungarian Electronic Library: mek.oszk.hu site.

In general, the majority of public collection databases do not contain currently fresh works, journal issues or books published, except for cases securing author permission. Just like in the cases of all content published on the internet and in print or other carriers (e.g. on CD, DVD) the intellectual property rights are also in effect here.

13. News portals
13.1. News on the world wide web

Ways of getting news have been changing rapidly. Nowadays we don't have to wait for the postman bringing the daily newspaper or listening to the evening news in the radio or television in order to get to know what is happening worldwide or in our closer vicinity. Recently almost all the media producers (newspapers, journals, tv or radio stations) operate a news website on the internet. Through using apps our mobile devices probably give us more sources of news than ever before.

The continuously updated online news get to us more quickly than the news reports becoming available in printed form. We can learn about most of the happenings right away, when they actually are taking place.

We need not watch the summary of a parliament debate in the evening news, because we can follow it online, or we can watch those matches that television channels do not broadcast.

It is possible to access a lot of content, articles, videos, photos, games, and several interesting things on online news portals, however, not all of them are free. What is more, some journals and newspapers may demand online subscription, too.

Through the internet, we are able to access not only domestic, but international news channels of the world, thus we can get information on the happenings of far-away regions of the planet by just one push of a button. We may get real time news on the traffic situations (e.g. traffic jams, recording of a road accident), watch online weather reports, natural disasters but similarly we can also access entertaining contents, i.e. concerts, film premiers, book launches, or celebrity news.

What is really new that even ourselves might also become media service providers on online sites, blogs, social media sites. We may set up a website, a news channel, we can start a blog (i.e. a diary on the internet) or a vlog (online video diary), self-created videos or reports with photos can be uploaded attracting followers (fans and readers).

There are almost infinite number of cooking video channels, fan sites, blogs related to travel or hobbies, all of which have been set up by people like us in order to express and entertain themselves and their followers. Certain news channels have become so popular with time, that advertisers have picked up on them and have created a revenue producing, real businesses out of them.

13.2. The types of online news sites

News channels may be categorised or distinguished in several ways. Right now we will only review a few of them, mainly those that we might meet quite often.

Some news portals are just the accompanying websites of traditional print and broadcast media organs, but there are other ones available exclusively as online media products. There are newspapers published only online, but web radios, WebTV-s also exist, not accessible at cable service providers or at the newsstands.

There are also news portals that rather favour content, here the news are arranged according to a specific topic or interest area. (There is a third category of those portals that collect every news item without filtering and control. These sites are notorious for publishing the most fake news.

Online news portals can choose to covering only articles, or video broadcasts, or radio broadcasts exclusively, but the truth is that users get them mingled on most of the sites in a varied mix of media formats.   It is not uncommon to read articles on the site of our favourite tv channel.

13.3. Fake news

The news resources and the social media sites appearing on the internet are, unfortunately, suitable for sharing rather effectively unreal news, erroneous data, false information, conspiracy theories or delusions, either by mistake, or by lack of accurate information or by wilful calling for attention at any way, and for the simple reason of fan collecting. Humans are driven by things which go against common sense or arouse interest. Circulating rumours make us picking up our head, just like many others, moreover often we will become part of the link of distributors of unintentionally by sharing or expressing likes.
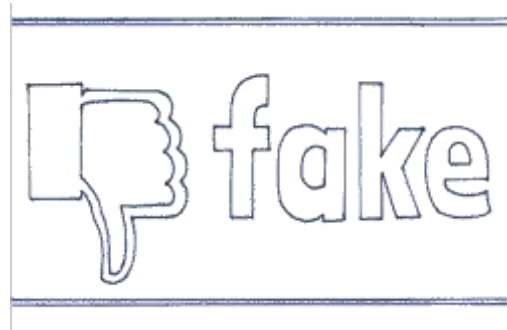
Today there are sites that deliberately distribute misleading news in ordet to get popular thanks to many sharing. The owners of these sites generally want to get the attention of the advertisers and sell them the sizable number of fans reached. Ensuring a substantial number of followers on the site starts functioning as a means of marketing. When we like, share or comment (put a word in) fake news, we actually support others' unethical acquisition of wealth.

Fake news appear to be on the rise. They regularly appear on other channels, keep surfacing when we are set to search for something else or just plan to look around on community sites.

If we come across strange, astonishing, or shocking headlines or perhaps we are only allowed to look at the article or watch the video, if we accept expressing our liking the site or seemingly unreal images, wonderful sweepstakes are offered suddenly, be sure to check the resource of the news or search for the article in the google search. If the statement is not confirmed by several other channels, at least we should not distribute it.

Some good advices:

- if the high-sounding title does not cover what the text or the content of the attached image or video exactly has promised, get suspicious, quite probably a click hunter or a hysteria-monger has been found.

- if you receive an astonishing or just too promising news from a news portal that has been unknown for you, check its impressum, and contact details, whether it is really a news portal or a fake news distributing site.
- look for the original source of the read news, since the editors of official news portals always indicate the original source of the given information,
- if the piece of news is full of repeated lines and gross grammatical mistakes, it is likely that there is an amateur behind the content.
- There is no author indicated? Immediately suspicious. If somebody publishes serious statements, he/she will not hide behind anonymity.

14. Images, music, and videos
14.1. Searching and downloading images, music, and video files

On the computer and over the internet, several photos and videos can be viewed either prepared by others, or created by us. We may receive regularly others' photos and/or videos on a data carrier (pendrive, CD, DVD) or they are available on the internet. The images and videos can be displayed on our computer and our television's screen, if a USB device is installed to the screen or if we connect a dvd reader to the television. Here we can only enjoy our grandchildren's videos or the photos shot during their vacation. If we want to keep those, we need to save them on the computer. Saving is not supported by television sets.

On our smart devices contain the applications needed to view images and watch videos. However, in order to do photo and/or video editing more specific programs need being downloaded.

Such programs include Photo Editor, Photo collage, photo editing applications, or e.g. the Video Editor, VideoShow video editing applications. We can edit images and videos saved on our computer with plenty of other downloadable and online, free programs, and also programs that require paying. (e.g. Photo Editing Programs: Microsoft Office Paint, Paint 3D, CorelDraw, XnView; video editing programs: Movie Maker, Movavi, Adobe Premier etc.).

It is also possible to download images, videos and music files from websites, or we can receive them in e-mail or chat from friends, too.

If we are looking for an image on the internet, it is expedient to use google's image searching service.

It is important to know that not every file can be downloaded free of charge, moreover, there are images where download is explicitly denied.

It is possible to download the selected images from websites and social media sites on your computer. The simplest way is to right click with the mouse, then select the save image as command. However, in almost every case accessing video and music files are easier through download links. Here the option of saving pops up after clicking on the link, where again music and videos can be saved in the folders we want.

We only need to pay attention to the fact that the size of the images, video and audio files is generally larger than that of the simple text documents, thus requiring bigger hosting on our computer, phone and tablet, therefore it is expedient to save them to external data carrier (pendrive or dvd) from time to time.

It is worth mentioning here that saving and copying images, videos and audio files are time consuming tasks; if we save several images or video at the same time, it may last even for hours, that is why it is worth beginning it when we have time and we do not need our computer or phone to any other activity.

14.2. Photo and video shooting
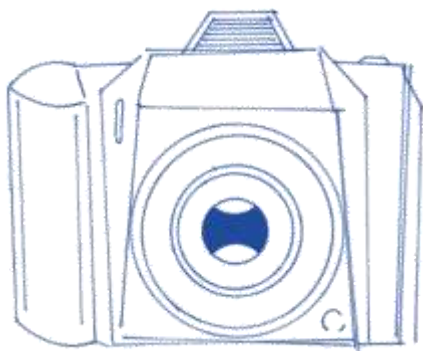
We love recording the important events of our life, our children, and our grandchildren with the use of digital photo and video shooting. The possibility is there, the new digital devices (smartphone, tablet or digital camera) offer these options, we can shoot, edit, and share plenty of photos and videos with our family, and friends.

In the past, in the era of traditional, so called analogue cameras, shooting photos was not a cheap entertainment. Depending on our camera, we had shot 24-36 photos, then we took them for developing, and the output has made our albums richer with a few good photos to be shown proudly to the grandchildren after an often longish and complicated process.

Upon shooting the photos, we just hoped to succeed with good quality photos and many times it only turned out after 2-3 weeks how we succeeded. For developing the bad images, we also needed to pay, just like for the good ones.

The films' quality and trademark also often determined our images' quality. When the film accidentally got light, all our photo series got destroyed. Of course, it also had its magic and excitement.

Nowadays, digital based photo shooting is much simpler. Here the trademark, the quality and price of the films do not have such importance, since we do not use a film for taking pictures.

We are able to shoot infinite number of photos with our digital device, the only thing that we need to pay attention is the memory card's storage capacity (the memory card substitutes the film.) But when the memory card gets full, we can transfer our images and videos to our computer, and the memory card becomes empty again.

If you don't mind spending more money on powerful new tools (like a higher resolution camera or a smartphone), you are enabled to shoot sharper and better quality photos (like a professional does.)

An important feature of the camera is its resolution, which is given in pixel, i.e. in dot pitches. Resolution is a series of the number of pixels located vertically and horizontally. The higher the resolution is, i.e. the more pixel our device uses, the sharper and clearer photos will be shot. Of course, who is rather an anti-talent in photo shooting, he/she may have problems even with a high resolution camera, too.

On the digital monitor we can see the photos made immediately, if they need improvement, it is possible. The images can be modified by the photo shooting function settings, by using a flash, or choosing profile photo shooting or just automatic photo shooting, and finally anytime there is the option of deleting.

We can store our images on the computer or on our phone, but it is also possible to print them, or save them on data carriers, what is more, with the help of the internet, we can also share them with others.

We can see the images made by our camera, the camera of our phone, tablet or even our laptop for a glimpse on the display, then they disappear. Our device saves the photos made, so later on they can be found, edited and copied.

The digital camera saves the ready images on a memory card, but we also use a memory card for the extension of the storage capacity of our phone and tablet, i.e. we can save things on memory card both on phone and tablet.

The memory card is a miniature storage device, on which both the images and the videos get stored, even when we turn off our devices.   We need them for saving. They come in different sizes offering different card capacities. These small devices have long life period, they can be re-used several times after copying and deleting data. However, a new one is needed, if the older gets damaged or breaks (e.g. we drop our phone or the camera into water). There are several types of memory cards. If we get one from among the smaller ones into our camera or phone, we will be able to shoot a lot of photos even in this case. If this is not enough, e.g. we start out for a longer foreign trip or we want to shoot videos about our grandchildren during the vacation, it is worth buying a higher capacity memory card.

14.3. Saving our photos and videos

If we want to store, edit or forward the images shot by our camera or smartphone, tablet on our computer, we will need to save the image files.

In our digital camera and phone there is a tiny memory card, which is a very small plate that can easily get lost. We can take it off from our device and by putting it into our computer's card reader we will have the opportunity to copy the images in the selected folder on our computer.

If we put the memory card in the card reader, a pop-up window informs us about connecting a new data carrier. Here we can select immediately the option of saving images and videos, but if it is more comfortable for us, let us simply open the Documents, select the camera's memory card (on the left side), and within this let us find the images we want to copy., Then let us use the copy command (with the simultaneous pressing of the Ctrl key and the C key or by selecting after the right mouse button click). Let us find the folder, where we want to put our images. If there is none, let us create and open it, then with the insert command (with the simultaneous pressing of the Ctrl key and the V key or by selecting after the right mouse button click), and the photos are right at their places. After that do not forget to put back the memory card into the camera!

If there is no card reader (quite often there is not) in our computer, we will be able to transfer the images and the videos with the help of a data cable into our computer. The data cable is a connector that links our image shooting device with the computer. We usually get this as an accessory upon purchase, but if not, it is expedient to buy it. However, we should take care that we should not forget to take our camera, phone or tablet with us when we go shopping, because the end of the data cables connected to these may be of different size. The part connected to the computer, the USB connector, usually has one size.

If we succeeded in connecting our devices, there is one tinier step: we need to enable copying photos and videos on our phone, camera or tablet. If we did it, we can save our photos into the folder of our choice on our computer by simple copying.

Here we will be able to edit the images with photo editor programs or applications as we wish.

14.4. Displaying and editing images

Our computer, camera, and phone stores the images and videos in various file types. It is important to talk about them, because the various file types can have different sizes, and not all devices are able to handle all file types. We should also know that these file types can be changed with editor programs.

The so called uncompressed image files (e.g. the **bmp** format) are expressly large, therefore they require much memory space on our computer and on the data carriers, and their upload to the internet is also slow, and long. That is why we often use compressed image files (such as e.g. the generally known **jpg** format) although it is a fact that their quality is lower. In reality, our eyes are not able to make a difference neither on the monitor, nor on the printed photo between compressed and uncompressed files. We can see substantial difference in the file size, when we look at the features of the images. The lower the size of an image file is, the worse its quality will be. This is in connection with the above mentioned resolution, since the lower an image's resolution, the lower its size is.

We can open and view our images in the simplest way on our phone and on our computer with a so called photo viewer or photo application.
In the photo viewer application, we can zoom in and out, rotate, or start a slide show. Naturally, we can also delete the image here.

If we also want to edit our images, e.g. we want to make a greetings card or make the colours sharper, then we would need to use different programs.

We are able to run the photo editing program on the computer by double clicking with the left mouse button, then when it started up, we can open the image we want to edit, but we can also solve it in a way that we hover the cursor over the image in the image folder and we right click on the image and select the association function, and we find the editor program here.

We have a lot of opportunities for modifying a photo shot by a digital camera or images arriving at us over the internet and in order to do this plenty of types of software or program are available. These programs are different, that is why it is worth reading about them before use, what they are capable of.

If there is a Microsoft Office program package on our computer, we will find a simple Paint named program here, in which we can change our image's size and format, e.g. we can save a bmp image into jpg format, but we can also mirror, rotate and cut our images around. With the same program we can add caption or frame to our images, but e.g. here we are unable to modify the colour of our photos.

With other programs, e.g. the MS Office Picture Manager, we can modify the brilliance and the contrast of our images, from our colour photos we can make black-and-white or sepia colour ones, we can adjust the shades and saturation, we can re-colour the red eyes. But it is also possible to re-size the images here, we can rotate and mirror or cut the edges we do not need. We have to make sure when using any of these programs that the modified images need to be saved, otherwise our work will get lost and when we open it next time, we will find again the original image, not the one that we have already modified. If we are not sure, whether we want to use the original or the modified image later on in the future, we should save the modified image under another name with the save as function, in this was both will be available for us in the future.

14.5. Displaying and editing videos and audio files

With the help of our super, smart devices we can make not only images, but also short videos and audio recordings either about the family, or for training purposes, e.g. about cooking or DIY, our garden, the sunset, a presentation or anything that can be interesting for us, that would be good to show our friends or our family. We can copy these videos just like the images to our computer and/or laptop.

The size of videos and audio files is much bigger than that of the photos, that is why we need to ensure to always have enough space for copying, especially if we want to put them on a respective data carrier.

Audio files may have a different format just like images. The most well-known ones include **wav**, **mp3**, **mid**, and **wma** formats. With these, as simple users, we rarely meet, but if the audio player fitted in the car does not play music copied from computer to CD, first we should search for the error in the format. Namely, various player devices are not always capable of handling each format. If we need to choose in what format we shall save an audio file, let us choose the generally known mp3 format, with this nowadays already almost every device is able to cope. On our computer, if we use Microsoft Office, Windows Media Player is the built-in audio player, but of course, we may download any other player programs. We can start playing the audio files in Media Player automatically, we can control the volume, what is more, we can also copy audio recordings to external data storage.

In case of video files, the most frequent formats include **avi, mpeg**, and **wmw**, as well as DVD films, which have much bigger sizes than the previous ones. Here it is the avi format that almost every player device is capable of handling. Our Windows Media Player program is suitable for playing and copying video files.

14.6. Scanning

The digital worl d is not only capable of handling our new photos made with digital devices, but our old, yellowed photos can be digitalised, too, we may even share them with the big world. It serves us well in a lot of situations, when for example we are preparing for a class reunion or searching local history and interested in old documentary images or we just want to entertain our grandchildren with their parents' baby photos.

Digital photos can be made out of these old photos, but because of quality problems it is much more worth scanning the images by a scanner.

The scanner usually is a respectively connected device, but some printers already have a built-in scanner.

The device scans the images put on the glass sheet of the scanner after opening its flat lid up, it displays it on our computer screen, and from here we can save it in jpg or pdf format. It is important to note that if we want to use the image later as an image (ready for editing, subtitling or uploading into a community site), then it would be better to save it as an image, but if we are scanning personal documents, it is more useful to save them in a pdf version, because after saving that cannot really be modified.

Scanning option are determined by the scanner type. Adjusting the settings is possible. We can set what resolution our image should have. The higher resolution (dpi) we choose, the clearer our image will be, and the bigger size it will have. If the intention is to send the image in e-mail after scanning, we should rather choose a lower resolution.

We can set also here whether we want a black-and-white or a colour image, or whether we want to prepare a document. When we have completed all of these, just simply start scanning and save the image.

14.7. Printing photos

We can also produce paper based photos, i.e. hard copies from our digital photos, able to be put into a frame, an album, serving as gifts. We need a printer for printing. There are black-and-white and colour printers, if we want high quality pictures, it is worth printing the photos with colour printer. Printers include ink-jet and laser printers that might print images of varied quality. The real difference between them is, however, the price of the printer ink. An ink-jet printer uses printer cartridge, while a laser printer a toner to print. Their prices differ according to type, but in general black-and-white mass printing is best with a laser printer, while for printing mainly colour photos, an ink-jet printer is the economic solution.

If we print photos, it is worth buying photopaper that is thicker and more glossy than the normal A/4 size paper, so that the final result will be better.

Printing can be initiated from the printer's own program or with a right mouse button click on the selected images and then by selecting the print command.

During the printing procedure we need to set the size of the image, in what quality, on what type of paper, and in how many copies we want it.

When we have finished the setting, we are ready to start printing. After printing with an ink-jet, it is worth leaving the image for a few minutes to get dry. Namely, it might happen that after fresh printing, when our hands or something else touches the paper, the dye will smudge.

If the paper accidentally jams during printing, look for the cause. The device indicates where it is possible to pull out the problematic sheet. If our image is striped or of low quality, be sure to check the ink level, or the toner fullness. If there is no more dye, the printer will point out it. Do not be afraid of the replacement of the cartridge or toner, it doesn't need a professional. In general, we can do that with a few simple actions.

15. Social networking sites

Online community sites are internet interfaces; through which we can keep contact with the world. We can share thoughts, photos, videos with acquaintances and unknown people, we can find out, what happens in the big world, we can communicate with our friends and family members, but we can also look for a partner, we can do the shopping, or even play a game through these.
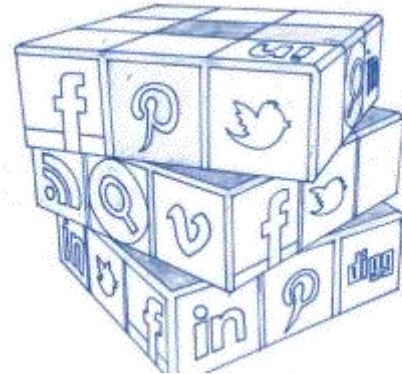
Community sites allow us not to be passive role players only in the online world, but proactive ones being able to shape them by ourselves. In addition, using them we can find our old acquaintances, we can also make friends with new people, we can form an opinion, share content, shoot video diaries, make photo albums, collect recipes, join groups, i.e. can find company, many times with unknown peers or people with similar interests.

Community sites have countless forms. All of them require registering in order to use them, and filling up our profile with our personal details, according to the nature of the community site. More private data are needed to an image sharing site and to a dating site, but it is not complicated to register on any of them.

15.1. Facebook, Instagram Twitter, LinkedIn

Facebook is the world's biggest social networking site. It is used by 1.3 billion people daily and more than 2 billion at least once in a month. Data from 2017 indicate that 510 thousand new posts are shared by users per minute, and 163 thousand photos are uploaded.

Facebook is an interface, where we can provide a photo of ourselves, connect to our acquaintances, join groups, and create new ones, announce events, play games, chat, but it is also possible to make online phone calls with its help.

By using the "like" button and other status indicating icons, we can evaluate others' shared contents, even without saying a word.

Here each user has a so called message board, where he/she can post messages or photos, and upload videos. Invited friends see it, may comment on the posts, and they can express likes or dislikes,too.

We are able to see both the posts of our friends and the advertisers in the newsfeed, which we can also comment, or share or express our likes.

Messenger is a very important application of Facebook specifically developed for smartphones, through which we can send and take messages, and even make video phone calls totally free of charge.

Instagram is a community site, where users can upload photos and videos, and share them with others. On the Instagram we are able to edit our uploaded images, videos, we can add various artistic effects, set the location where we shot the images, and we can collect followers or even fans with exciting, extraordinary images, and videos.

It is an interesting feature of the Instagram that we can also share our uploaded images on other social network sites, e.g. on the Facebook. In the initial phase, here we could not send messages, communicate, we could only view images, and videos, but thanks to the latest development, by now it has become also possible. While on the Facebook keeping contact is the priority, the main role on the instagram is rather played by entertainment. We may follow celebrities, we can view wonderful natural photos, watch film first releasess, collect ideas to dressing, home decoration, garden care.

Twitter is a community site expressly established for message sending. Its popularity is much lower than that of Facebook or Instagram, but in 2011, users shared in an average 140 million messages per day. The first Twitter message from outside of the Earth was sent from the International Space Station in 2010.

Messages published on the Twitter are called tweets, which may have a maximum length of 280 characters, but they can also contain images. According to default setting, anybody can view these, but it can also be restricted to the followers. Tweets can be sent from internet websites, external devices (e.g. mobile phone, tablet), and from some countries in the form of an SMS message. A given user may subscribe to other users, thus becoming a fan, in this way they can be up-to-date with the user's posts. It is also possible to like and share the tweets. Messages can be arranged into groups with the help of symbol "#".

While Facebook, Instagram and Twitter focuses on entertainment, making friends and strengthening our communities, **LinkedIn is the** largest business community network in the world. We upload curriculum vitae on the LinkedIn, we can indicate where we are at present with our career and what professional challenges we face currently, what professional fields interest us.

In addition, LinkedIn makes efforts to expand the opportunities of online studying. Its developments mostly serve this trend. In Hungary this community site is less popular, but in the world at present it has more than 467 million users.

Snapchat, used mostly by young people, is mainly an image sharing site, similarly to Instagram, however the images and messages shared here soon disappear, and later they cannot be retrieved.
Snapchat has 166 million daily active users in the world.

The most well-known image sharing site, the **Pinterest** is visited monthly by approx. 12 million people, and 95 million photos are uploaded per day. Pinterest is an American community image sharing website, that makes it possible to share photos categorised into groups, and topics with both acquaintances and strangers. We call the images uploaded on the Pinterest as pins, these can be freely shared, saved, and printed.

YouTube is a public video sharing website, where users may upload and watch video clips. Among the uploaded contents both films and tv broadcast parts, music videos and homemade video recordings can be found. Although YouTube prohibits uploading copywriter recordings, e.g. films, music clips, but since users upload approx. 24-hour-video per minute, it is very difficult to filter copywriter recordings. For us it is worth knowing that we can watch videos, listen to music, and we ourselves can also upload audio and video files with youtube's help.

15.2. Using social networking sites

We have reviewed above the most well-known community sites, but we have not mentioned how to use them. Before starting to use them, it is important to talk about the fact that by using community sites we become verifiable, and checkable, that's why it matters what we share, what data we are providing about ourselves, and what comments we make. If e.g. we share our religious or political views, we might easily find ourselves attacked or bullied by some. We can decide to share each and every little joy and sorrow of our life, but let us consider, too, that this can be read, commented, mocked or forwarded by anyone.

Due to this, it is worth considering what we share on the world wide web.

If we want to join any community site, the first is always registration and setting up our profile. In the course of registration, we need to provide our basic personal data, our name, age, and contact details. These are partly required because of identification, e.g. Facebook filters users under the age of 18, partly in order to be accessible e.g. when our profile is accidentally disabled or our password is forgotten There are some data that are not compulsory to fill in, such as e.g. working places, accomplished schools, religious and political views. These data, however, help us to find our like-minded acquaintances. If for example there are more than one result for a name, the supplementary data help us filter our acquaintances from among the many names. It is our decision which data of ours we provide. If we entered our birth data and set them public, it can be expected that our friends will greet us on our birthdays, also it will be less likely that our members of the family will forget about this eminent event.

It is typical on all community sites that they request us to produce a so called profile image. It helps our acquaintances to find and identify us much easier.

If we created our profile at any social networking site, since that time, anybody can search for us, i.e. we become visible for the wide world. It depends on us, what we let to view about ourselves.

On the Facebook, we can limit the information about us. Those searching for our name may only see that we are registered users, but they will not be allowed to view our other data, (images, posts, our acquaintances).

If anyone sends us a friend request, and if that gets accepted, from that time on your personal profile details are free to monitor with some exception.

At the community sites, there is always a menu point "Settings", where we have the option to save our privacy and security settings.

Its first step is that we can join a community site only by providing username and password. It is worth using different passwords at different community media sites, since it might happen, that unauthorised people may have access to our community site, but with various data, they will not be able to crack all of them. In this way we only lose or have to restore one account. Some browsers are able to remember our passwords. It is common not to exit from our own computer or phone which fact makes us vulnerable if somebody may get access to our devices when   we leave them upfront. It might also happen that we need to login at an unknown place to any of the community sites we use, that is why it is good if we memorise our passwords and login identification codes.

It also belongs to security settings, if we have the option to set, who can see our posts, photos, and the same kind of posts out of the list of our acquaintances. We might set it as anybody free to see them, but we can also select that only a certain group of our acquaintances, e.g. our family members do have the privilege.

It is one of Facebook's specific features that if others share photos on which we are also there, they are allowed to identify us on the image, i.e. put a tag on us, (the meaning of "tag" is: label,). It is possible for us not to allow these tags or delete them retrospectively.

If we read articles and news online, and we like them, we can share them on the community sites with our friends and acquaintances. On the online news portals, at the bottom of the articles or at the titles we often find a share button.

It is also good to know that all of the community sites are free of charge, in return for online advertising. Social networking sites receive substantial sums from business to find clients based on the users' shared personal information. It is hard to get rid of advertisements, while by scrolling them over, it is easy for us not to be bothered by them. Of course, if any of the advertisements catches our attention, we can click on it, and immediately face the website, where the advertisement leads us.

It is important that anybody may search for us on the community sites and may send us friend requests, even if we just passed them by once in the street or we have never even seen them. Make sure you are cautious with friend requests coming from foreign users, from foreign countries, in this way we avoid the possibility of plenty of fraud. Since in most of the cases, our acquaintances can see expanded content about us, it is worth thinking it over whether we accept the friend request or not. Friend requests can be accepted or rejected in a way that the person who has sent it will not be notified about the denial.

Since relationships change and may change in real world, too, community sites also give opportunity to delete or disable our existing friends. If we disable somebody, he/she will remain our friend, but will not be able to see our posts and comments any more, will not be able to write us and will not be able to invite us into groups, either.

Through using social network sites we are able to share our thoughts, articles, images, videos, and music, but also our moods and emotions. We can inform others where we are and what we are doing or what has happened to us.

If we share something, we should also count on the option that our acquaintances and friends will react on the posts. by either simple expression of an opinion with emoticons, or verbal comments.

If we see that somebody has liked something, it means that he/she has expressed a like under a post or image. Besides the like button, however, there are several icons reflecting our mood which are called "emojis" or "emoticons":

✓ Love:

✓ Funny:

✓ Wow:

✓ Sad:

✓ Angry:

On various community sites, we can join groups according to our area of interest. They can be grouped into several types. There are e.g. groups of people living on the same settlement, hobby groups, e.g. knitting and crocheting or drawing groups, cooking and recipe sharing groups, there are fan circles, or e.g. groups organising class reunion events. We are able to join them easily, if they are public. If it is private or closed, we need to ask for a permit from the group's leader, in another name: administrator so that we can join. We can chat in the groups on topics we are interested in, learn new things or find new friendships.

We can also establish a new group, and shape it as we wish. We may determine, whether it should be public or private, who can join, and what the members may share.

On community sites, we are able to create a community site for our enterprise, for an institution, for a civil organisation or for a good cause. The setup and operation of the site is similar to our profile, with some minor differences. It is not possible to send a friend request e.g. to a site, but you may like it or advertise it with a paid service.

We can see that social networking sites give a large amount of new opportunities for dating, keeping contact with others, learning and entertaining ourselves. But just because of this potential, we need to keep in mind that virtual communities might quickly swallow us. We forget about the time while we are on the net and browse there, we might often neglect our loved ones living in the real world, sometimes our virtual communities is becoming disproportionally too important. It is important to find balance between the real and the virtual world.

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Glossary

ADSL: (Asymmetric Digital Subscriber Line) technology, with the help of which high bandwidth, digital data transmission, i.e. internet connection can be realised through telecommunications phone networks.

Motherboard: a multi-layered printed circuit board. The "slave units" are also connected to the mother board, e.g. power cord for providing power supply, switches fitted on the housing, e.g. the ON/OFF switch of the computer or even the mouse, the monitor, and of course the memory that are inevitably important for operation.

Basic software: the program setting the normal operation of our device is e.g. a <u>firmware</u>; as a user, we have the least influence on this software.

Application: is a computer-aided program that is made from a source code with the help of a compiler.

Leased line: a version of the switched line internet connection which ensures a daily 24-hour digital link.

Keyboard: The most typical input periphery is a keyboard. More rarely, but we also call it bank and manual. A keyboard contains an integrated electric circuit of its own. A small electric switch belongs to each of its keys. The state of the keys is constantly monitored by a processor built in the keyboard. If we press a key, the keyboard indicates it to the computer that there is a change in its state, requests an interruption, i.e. it turns the processor's attention to itself. The processor, in such a case, interrupts its current activity and reviews what the keyboard wants from it.

Blog: a website with updated content, which mostly consists of a series of diary like successive posts.

Joystick an input periphery applied first of all at games.

Browser: these are the programs that you can apply for viewing content on the Internet, and for using the services available through the internet.

E-banking: it is a summary name for electronic banking services, with the help of which we are able to perform our banking issues even from home, comfortably, even during the weekend or at any time during the day's 24 hours, safely and without any waiting time, i.e. we can have banking over the Internet from smart phone, tablet, and computer.

E-mail: originates from the English term, electronic mail. With its help we can send letters to each other over the internet.

Touch pad: is nothing but a touch sensitive surface performing the mouse functions which controls the mouse's cursor on the screen by moving our fingers. They are perfect alternatives for mice, we can find them mostly in portable computers.

Cloud service: is nothing else than data storage on the internet or on a private network.

File: in information technology we call the logically related data sets as data files, files or data stock.

Gamer laptop: Having an excellent performance, it is accordingly a bigger and expensive portable computer which is not only chosen by game players, since due to its high performance, it can be a good partner to graphic works, video editing or in addition to designer programs.

Trackball: Other denomination: positioning ball. It is a mouse turned to its back, the ball of which is rolled by us.

Hardware: in computer science, the notion "hardware" is the computer itself and any accessories that can be grasped by hand, the computer's electric and mechanic components, from which a computer is assembled.

Storage: it is located in the computer, but there are also external portable versions, too. Its task is to preserve the saved data even when the computer is switched off

Icon: means in computer science a small image that generally represents a file, a library, an application or device in an operating system.

Interactive board:

is an ICT *(Informations and Communications Technology)* device that can also be perfectly utilised in pedagogic processes, which links the board with a computer (and a projector) with the help of a software in a way that it can be controlled even from the board and any material put on the board can be saved.

Internet: The internet is a computer network that covers the whole world, that connects the whole Earth, linking governmental, military, commercial, business, educational, research, and other (e.g. non-profit) institutions, as well as individual users.

Instant messaging the instant message senders and chat applications are computer applications allowing for instant written communication between/among two or more people over a network, e.g. the internet.

IT: is the complex of the tools and methods of computer-aided data processing for which earlier we had been using the term computer science. But as time had passed by, the application of computers had also become widespread at areas where for the user the functions used by him already did not seem to be computation problems – for example, photo editing programs or route planners, consequently, in line with the extension of the content, the term has also renewed. Due to the headway of the communication sub-area, we will also come across it in the form of ICT = Info-Communication Technology or Information Communication Technology.

Cable modem: is a device that enables high bandwidth internet connection, it generally operates through coaxial cable, and uses two-way data communication.

Switched line: a technology ensuring temporary internet connection over traditional analogue wired phone line by a modem.

Projector: Nowadays, a projector is an indispensable accessory of presenting presentations compiled by a computer in a size that is enjoyable for a lot of people.

Community sites: are sites on the internet, where people form a community. It can be very complex. There are community portals expressly prepared for smaller target audience and naturally there are sites established that attract huge masses.

Cursor: (originating from the French 'course' word, meaning running) indicates the current position of an input device, e.g. mouse or keyboard in some way at the given interface.

Scanner: helps to enter printed texts, photos or drawings into the computer.

Laptop: a word of English origin, means portable personal computer.

Memory is the computer's data storage unit, it stores the programs to be implemented by the processor and the data waiting for processing.

Memory card: is a digital storage device, the shape of which is like a card. Its main features are: portability, data persistence without energy, small size, multiple writing option. Its most frequent application areas include the world of digital cameras, tablets, telephones, smart phones, video cameras, MP3 players, and video game consoles. It has 3 important characteristics that we need to keep in mind when purchasing one: type, storage capacity, and write/read speed.

Hard disk: is a magnetic surface data carrier. The disk is made of metal; this is where the denomination of the hard disk originates from. It is typically a part built in a computer but currently it also has a portable version. It has high capacity, a huge amount of data can be stored on it, a stable device, fast, and secure.

Microphone: is a device that is suitable for entering a scale into a computer.

Mobil broadband connection: ensures mobile internet access to the world wide web and its services. A portable device gets connected directly to the wireless network; this device can be a mobile phone or a mobile internet modem, too.

Modem: (modulator-demodulator) allows for a two-way data transmission through traditional telephone line. Today this "dial-up internet" is already considered to be an obsolete technology.

Satellite internet: Data forwarding over satellite that is independent from geographical location.

Netbook: is a small device designed to be ultramobile, rather used for browsing the internet, which, thanks to the developments, currently already has appropriate resource, but it is still far from options provided by laptops.

Netiquette: Digital etiquette (it originates from the English network etiquette), the conventions of communication on the internet.

Notebook: similarly to the laptops, it means portable personal computers.

Operating system is the basic program that provides a unified interface for the rest of the useful programs that we use. If it were necessary to write a program without an operating system, it would mean a huge extra task for the programmer, since he would need to reach the internal devices of the program, e.g. memory, storage, during the running of the program not through a unified interface, but respectively with separate complex methods. Consequently, an operating system, on the one hand, is a great help mostly for the programmers, while on the other hand, it provides us, users, with an easier orientation among programs, too, it makes the use of our computer easier.

Optical internet: where communication takes place on glass or plastic cable by using light signals. Currently, this is the fastest available private internet service.

Paypal is the most well-known online bank in the world, a financial service provider specialised in electronic commerce.

PDA: *personal digital assistant*, is a hand held computer or pocket computer.

Pendrive: is an electronic type of computer-aided data storage technology, which can be deleted electronically and reprogrammed

Processor: *(Central Processing Unit = CPU,)*, is the central control unit of our computer.

Protocol: the sum of the rules describing the way of network data transmission.

Plotter: first of all, helps to prepare big line diagrams, and technical drawings.

System software: is a program managing the communication between the computer and its peripheries, which among others make it possible to create other software and putting it into operation. The system software contains the operating systems, and frequently the translator programs of particular languages.

Bandwidth: in practice means the speed of the internet, namely, how quickly data flow is able to proceed over a telecommunications line (either over a line, or wireless).

Computer: (in basic chitchat, a Personal Computer, in short: PC type used by us at home or at the workplace is widespread, but we will see that there are other types of computers, too) is an electronic machine that is capable of receiving incoming data, performing diverse, pre-programmed operations on various data, then retrieving the data we got as a result of the operations.

Software: the summarising name of programs running on a computer, the sum of programs operating and controlling the hardware units.

Firewall aims at ensuring in computer science that no unauthorised access could happen through the network into a given computer. It consists of software- and hardware components.

Ultrabook: is a full worth laptop, not a dumbed-down computer, with thin housing and low mass. Its extraordinary lightness (around 1 kg) and the long battery time are its advantage, while its disadvantage is the bad heat dissipation because of the tiny processor fan resulting from its size.

USB connector: a universal serial bus, which is nowadays a very wide-spread computer-aided connector.

Virus: a program or program part that gets multiplied by copying itself. There is a virus that only hides, but most of them get activated after a certain time or by the effect of some event. There is a type that may only play a trick on the user, but most of them most of the times cause serious damage, cripple our data, may make our computer system collapse.

VoIP: *(voice over internet protocol)*, i.e. voice transmission over Internet Protocol that is nothing else than a new form of telecommunication where the conversation takes place not on the traditional phone network but on the internet.

Bar code: a code consisting of printed, parallel lines in different number, with various widths, and distances between them.

Bar code reader: Device being suitable for identifying bar codes.

Web camera small video camera connected to computers having internet connection, the broadcasted images of which can be watched by other people browsing the internet.

WiFi: or Wi-fi: the popular name of the wide-spread standard implementing wireless microwave communication

Wikipedia: the biggest online lexicon of the world that is available in 304 languages.

WWW (World Wide Web): is one of the most popular services of the internet. With its help, we can browse websites, text websites and we can access related images, figures, and videos. It is suitable for forwarding websites, searching for information, and also conducting commerce.

Appendix

Let us focus on this system a bit more!

The main task of a computer is data processing. This function is provided by the computer's central unit, which unit is hidden in the housing, "the box" that is frequently called as computer in itself. The work of the devices hidden in the box is controlled by the central brain, a **processor** *(Central Processing Unit = CPU)*.

It is the processor that implements each instruction, controls the computer's operation, provides connection with the peripheries, performs the necessary mathematical operations, and co-ordinates the data traffic within the memory. The processor and the rest of the electronic elements of a computer can be found in the housing built on the **mother board**, a multi-layered printed circuit board. The "slave units" are also connected to the mother board, e.g. power cord for providing power supply, switches fitted on the housing, e.g. the ON/OFF switch of the computer or even the mouse, the monitor, and of course the memory that are inevitably important for operation. **Memory** is the computer's data storage unit that stores programs to be implemented by the processor and data waiting for processing.

Basically, the features of these three components determine our computer's capacity.

Input units, so called *input peripheries* serve for entering data and programs to be used by us into the computer. The entered data are processed in the computer. This is how the end result is generated, for which we have started the whole operation. Then this end result or with the correct term: output data will get back to us through the so called *output peripheries*. In case of data that wait for further processing, e.g. an unfinished letter that had been started with the help of a text editing program, that was saved by us, but it is still unfinished, the computer stores it for us in a so called storage. Input units, output units, dialogue devices, and storages comprise the system of peripheries.

Let us get to know them and the basics of their use!

Peripheries

Periphery – any hardware device *(in computer science, the notion "hardware" is the computer itself and any accessories that can be grasped by hand, the computer's electric and mechanic components, from which a computer is assembled)* connected to the computer, through which the computer keeps contact with the outside world. We, the users can exclusively communicate with the computer through the peripheries during our work with the computer. Basically, these devices can be categorised into three groups:

- ✓ input devices/units
- ✓ output devices/units, there are output and input units, too, such as
- ✓ storage

Inlet devices

Inlet units or input peripheries are the ones that enable data input into a computer. With their help, information flows from the direction of the outside world towards the computer's central unit.

Such units are the following which we will get to know:

- ✓ keyboard
- ✓ mouse
- ✓ trackball
- ✓ touch pad
- ✓ joystick, gamepad, steering wheel
- ✓ bar code scanner
- ✓ scanner

Keyboard

The most typical input periphery is a keyboard. More rarely, but we also call it bank and manual.

A keyboard contains an integrated electric circuit of its own. A small electric switch belongs to each of its keys. The state of the keys is constantly monitored by a processor built in the keyboard. If we press a key, the keyboard indicates it to the computer that there is a change in its state, requests an interruption, i.e. it turns the processor's attention to itself. The processor, in such a case, interrupts its current activity and reviews what the keyboard wants from it.

Its types can be differentiated based on the number of keys and their language based layout. A standard English keyboard has 101 keys, while a Hungarian one has 102 or 105 keys. The most obvious characteristics is the standard „QWERTZ" layout of the letters and the numbers. This standard is used since the discovery of the typewriter; its name originates from the first letters' order in the keyboard's upper line of letters.

Initially, the keyboards of personal computers had 84 press buttons, then the number of buttons kept increasing. Recently, mostly the above mentioned 101, 102 and the 105 button keys are used, but there are even other keyboard types and keyboard-layout also changes country-by-country. The latter means that letters deviating from English characters are also involved in the keyboard. With the help of programs, we can decide on our own, which keyboard-layout to apply, moreover, we may create new keyboard-layouts or even letter sets, too.

Based on this, we are able to type texts of any language by using any keyboard, and this is one of the big advantages as compared to typewriters.

Keyboard Parts:

- typewriter keyboard - letters, numbers, specific symbols;
- toggle keys (have no effect when pressing on their own):

  ✓ Shift – *(on some keyboards it is indicated not by an inscription, but with an up arrow with contour).* It enables us to reach the symbols located above the capital letters and the numbers by pressing the keys simultaneously, e.g. symbol + can be reached by pressing the Shift key and number 3 key simultaneously, H can be reached by pressing the h key and the Shift key at the same time,
  ✓ Alt – a function toggle key, e.g. by pressing Alt + Tab simultaneously, all active windows appear. Changing from a window used by us to another is possible by pressing and holding the Alt key, while repeatedly pressing the tab key,
  ✓ Ctrl – is a modifier key, if in conjunction with it we press other keys, the computer will perform different commands. E.g. Ctrl x = cut selected object and put on clipboard.;

- switch keys (a LED indicates their status in the upper right corner):
  - ✓ Caps Lock fixed lowercase/uppercase letters; when enabled, the letters are typed to be in uppercase, when disabled the letters are typed to be in lowercase,
  - ✓ Num Lock cursor mover/number lock (its use determines whether we type numbers on the numeric key pad on the right side or move the cursor),
  - ✓ Scroll Lock toggles scrolling;
- Editor keys:

  - ✓ Insert – toggles between insert/overwrite mode, if the cursor is inside a word, with insert mode enabled, the next letter pressed will push away the previous one to the right and writes a new letter by keeping the original one, while in case of overwrite mode, the letter being to the right from the cursor will be overwritten, so the original letter will be deleted by typing a new one),
  - ✓ Del – the character being in the current position is deleted (deleting to the right or deleting forward),
  - ✓ Back Space – deleting the character being in front of the current position (deleting to the left or deleting backward),
  - ✓ Enter – indicating input, furthermore, when using word processor, it indicates the end of a paragraph, the OK key
  - ✓ Tab – its basic feature is that it pushes the cursor farther, places the text with equal spacing in indent, and helps when we want to use the computer without a mouse,
  - ✓ Space – this long key at the bottom separates the words typed in from each other;

- numeric keyboard – a part serving for fast input of numbers at the right side of the keyboard (when the Num Lock LED does not illuminate, it can be used for moving the keyboard cursor);

- Arrow keys:

  An arrow directed upward (you should not mix it up with the SHIFT), down, to the right, to the left: for moving the cursor with one space in a direction!

  - ✓ Home- go to the top of the line,
  - ✓ End- go to the end of the line,

✓ PageUp- move text up by one screen,

✓ PageDown- move text down by one screen.

- Function keys (F1-F12) – control keys, to which the running program adds sense; F1 means usually HELP.
- Esc– "escape" key; it can be used for exit in several programs.

Practical advices for use:

✓ there are symbols at the upper part of several keys that can be written down by pressing the Shift key and the given key. On the 102-key Hungarian keyboard, there is a third symbol painted on the right side of several keys. It is possible to enter these symbols by first pressing the Alt or the Alt Gr key, then the selected key,

✓ we can type with capital letters, if we press the Shift button or if we want to write everything with capital letters, we can do that with the help of the Caps Lock key,

✓ numbers are located in the upper line of the typewriter part and at the right side of the keyboard, in the numeric field,

✓ when we already handle the keyboard with routine, we will be able to give certain commands by using various key combinations:

- Win+E: Open My Computer
- Win+L: Change User
- Ctrl+Alt+Del: Task Manager
- Ctrl+A: Select All
- Ctrl+C: Copy
- Ctrl+X: Cut
- Ctrl+V: Paste
- Ctrl+Z: Undo
- Ctrl+P: Print
- Ctrl+F: Search
- Ctrl+T: New Page (for example in a browser)
- Ctrl+Esc or Win: Start menu
- Ctrl+"+": Zoom-in (for example in a browser)
- Ctrl+"-": Zoom-out (for example in a browser)Win+PrintScreen, as well as Alt+PrintScreen: Save Screen, make a photo about the given moment of our screen.
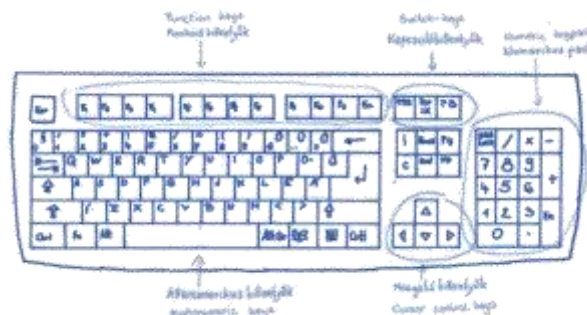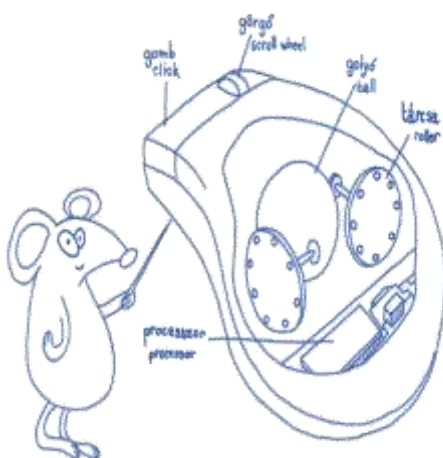
Mouse

Mouse has become an indispensable periphery with the appearance of graphic operating systems. But what is an operating system? *An operating system is the basic program that provides a unified interface for the rest of the useful programs that we use. If it were necessary to write a program without an operating system, it would mean a huge extra task for the programmer, since he would need to reach the internal devices of the program, e.g. memory, storage, during the running of the program not through a unified interface, but respectively with separate complex methods. Consequently, an operating system, on the one hand, is a great help mostly for the programmers, while on the other hand, it provides us, users, with an easier orientation among programs, too, it makes the use of our computer easier.* Its use highly facilitates work with computer. Its application aims at ensuring that keyboard is only needed to be used when it is inevitable.

With the help of the mouse, a cursor *(mostly an arrow)* can be moved on the monitor, but before the analysis of the cursor functions, let us continue collecting information on our loyal helpmate, the mouse!

The first mouse was prepared in 1963, from wood. At that time, it had rather been put on the speciality shops' shelves due to fad, since real breakthrough took place in their use thanks to the spread of graphic screens. This is the time when developers created the recently well-known graphic user interfaces where so called icons are applied to transfer information. By moving the mouse, we can direct an indicator on the screen. Thus we are able to navigate among the icons and perform various operations on the objects situated there extremely quickly.


Most of recent mice detect movement from the rolling of the rubber coated steel ball located inside. There are two cylinders attached to the ball at right angles, with gears. Their rotation is monitored by light sensors, so the mouse receives the data to be forwarded from this. The mouse has a processor of its own. When you move the mouse horizontally, the ball in its belly rolls in the direction of the movement and in the meantime it rolls the two cylinders.

The direction and the speed of the movement of the gears situated on the cylinders are monitored by light sensors and the mouse transfers the signals received in this way towards the system unit. The system unit gets to know where it needs to move the mouse cursor on the screen based on the signals. If you click with the mouse button while the cursor is on a command button, the operation belonging to this command button gets implemented.

A mouse is generally connected to a computer by a USB connector.

The left and the right buttons of the mouse are mostly used. In addition to moving the cursor on the screen, with them you can perform several other operations, too. The operations' descriptions contain operations performed by a mouse set for right-handed. If you are left-handed, no problem, you can turn your device comfortable for yourself within a few moments: if you use Windows 10 operating system, open menu point "Powerhouse" in the "Start menu" by double clicking yet with the left button of your mouse. Stand on menu point "Devices", then double click again. Here you will enter menu point "Mouse" with the already well known method, then in the window opening up by double clicking on the drop-down arrow under the "Primary button" menu, select the "right" option. In this way, the button functions of your mouse will be swapped.
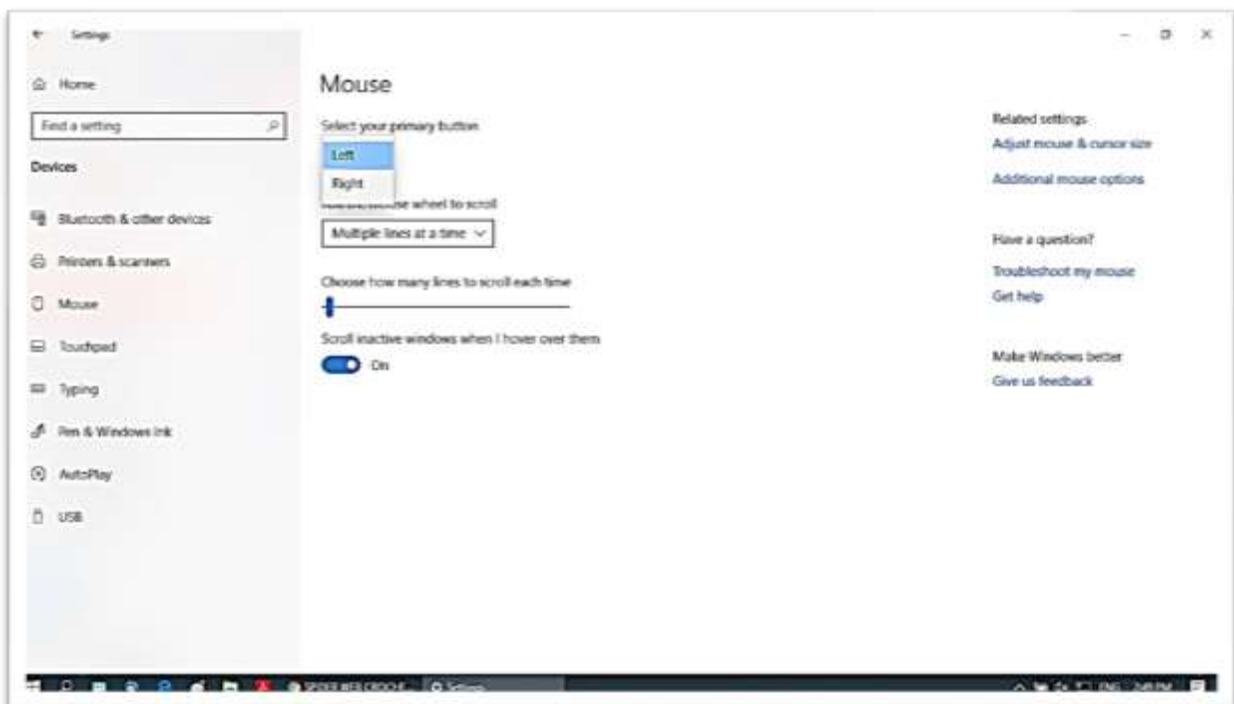

In the menu point reached, it is possible to modify even other features of our mouse, e.g. the speed of its operation with the help of Related Settings.

But now let us get back to the most frequent operations that can be performed by our mouse!

✓ Left mouse button, one click: this is the classic operation of selection. Point your mouse on a graphic object (pictogram, thumbnail or icon) and click *once* on it with the left mouse button. With this, the given object is selected. At the same time, the object's background colour also changes, thus indicating that the object is selected.

✓ Left mouse button, double click: an activity starting the programs symbolised by the icons or displaying the content of the documents. If we are curious about the content of a graphic object, we need to double click on it. If we want to open a program, e.g. a browser or watch a photo or film or perhaps we would like to listen to some music or get to know the content of a text document, let us double click on the name or icon of the given file. If the proper programs are installed on our computer to manage them, the content will be displayed on the screen (and also heard in the speakers, if appropriate).

✓ Pull through, "drag": Drag and drop. We will be able to relocate a graphic object – e.g. an icon or a file – from one point of the screen to another with the help of a mouse. We can do that by moving the cursor over the object as the first step, then pressing and holding the left mouse button. While holding the button pressed, we move the cursor to the place where we want to place the object on the screen, then we release the button of the mouse.

✓ Right mouse button, one click: If we are curious what operations we can do with an object – e.g. an icon or a document (or anything else) – let us click on it once with the right mouse button.
Clicking with the right mouse button will open up the local menu of the given object. The menu points in the local menu, and the dialogue panels behind the menu points contain all the setting options that can be used for that object.
An object can be a program, the options of which can be discovered by clicking on its icon but it can be an image, a document or just a section of a document that was selected by us. Naturally, the content of the local menu depends on the type of object we are speaking of.
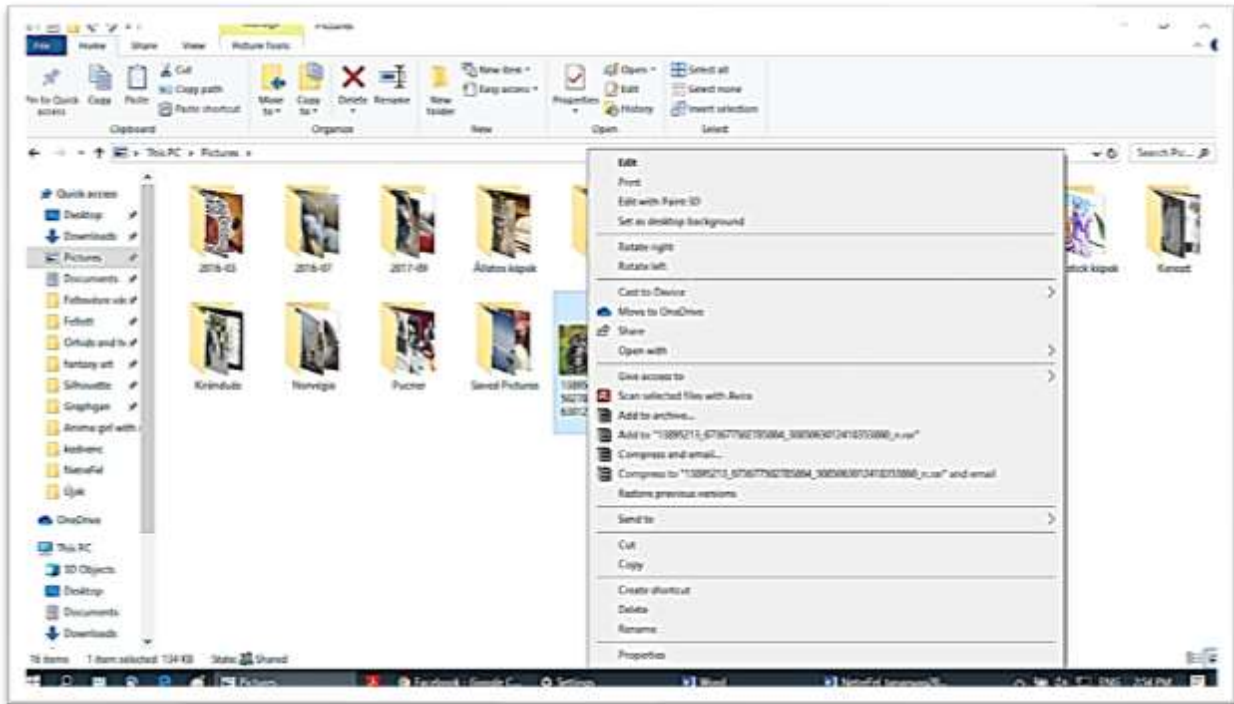
We can see it, we can associate a program to the image, i.e. we can determine which program to use from our computer to open it (if we can find an image viewer and/or several of the editor programs on our computer), and we can go to the editing option immediately or we can even delete or rotate it. We will be able to get to know these options the most and the most thoroughly during practising.

It can be set as a rule, if we are clueless in connection with a graphic object, just let us display its local menu with the help of the right mouse button and after some browsing, we will surely find the operation we need!

Cursor

A cursor (originating from the <u>French</u> 'course' word, meaning running) indicates the current position of an input device, e.g. <u>mouse</u> or <u>keyboard</u> in some way at the given interface. The mouse's cursor is set to the appropriate location and by clicking with the buttons on the mouse, we can control most of the programs.

By the way, the cursor can be moved by various keys, however, it is much easier and faster!

left arrow   shifts one character to the left

- ✓ right arrow   shifts one character to the right
- ✓ up arrow   shifts one character upwards
- ✓ down arrow   shifts one character downwards

- ✓ PAGE UP   shifts one page upwards
- ✓ PAGE DOWN   shifts one page downwards
- ✓ home   moves to the beginning of the line
- ✓ end   moves to the end of the line
- ✓ ctrl + home   moves to the beginning of the document
- ✓ ctrl + end   moves to the end of the document
- ✓ ctrl + left arrow   moves one word to the left
- ✓ ctrl + right arrow   moves one word to the right
- ✓ ctrl + page up   moves to the top of the screen
- ✓ ctrl + page down   moves to the bottom of the screen
- ✓ alt + ctrl + page up   moves to the top of the previous page
- ✓ alt + ctrl + page down moves to the top of the next page

Sometimes our cursor appears not in the usual arrow form. In such cases, it warns us or just calls our attention to a "hidden option":

- ✓ when the operating system is not able to communicate with the user because it is implementing an operation, an hourglass is displayed instead of the mouse's cursor. When we can continue our work, the mouse's cursor will change back to an arrow shape,
- ✓ when the cursor gets over a hyperlink, it may turn into a pointing hand; it often happens that an informative message is displayed about the link in a small pop-up window *(tooltip)*, which disappears after a short time or when the user moves the cursor away,
- ✓ at the edge of the window, the cursor might be displayed as a two-way arrow (horizontal, vertical, diagonal directions), indicating that the user is allowed to move the arrows towards the edge of the window or he/she can resize the window,
- ✓ it can take the shape of a hair-cross, when it is possible to select a co-ordinate or a geographical point,
- ✓ question mark or word bubble shape may indicate when we can get help by a click,
- ✓ over a selectable text, the cursor may take on the shape of a vertical line, with small soles at the top and the bottom,
- ✓ in moving mode, the cursor may appear as an arrow pointing into four directions.

Trackball

Other denominations: positioning ball. It is a mouse turned to its back, the ball of which is rolled by us. The buttons are beside the ball. Earlier it was mostly used at portable computers, many times already inherently built in, but it was also possible to buy them as self-contained units. Its use is advantageous because less space is required to control it and moving it is less exhausting for the wrist (the latter is especially advantageous for people with aching wrist). Nowadays its use is less widespread; in portable computers, touch pads practically took over their place.

Touch pad
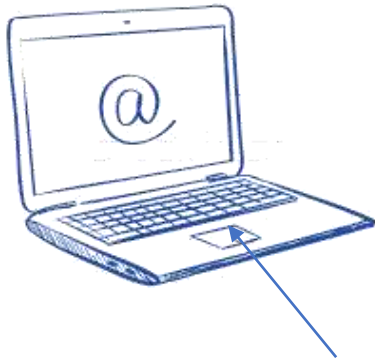
A touch pad (touch panel) is nothing but a touch sensitive surface performing the mouse functions we got to know, which controls the mouse's cursor on the screen by moving our fingers.

They can usually be found in portable computers but also in wireless keyboards, remote controllers, and other portable electronic items, and furthermore, a similar device takes over the buttons' functions on a few mouse models.

Their size range includes navigation devices from a few millimetre ones on PDAs (*personal digital assistant*, hand held computer or pocket computer), through 8-10 cm diagonal built-in touchpads, till 15 cm self-contained devices.

A touch pad is even able to sense clicks. If we press briefly once on the interface, it detects it as one click, if we press it twice in rapid succession, it detects it as a double click. The click function is mostly supported by two buttons; their use is identical with that of the traditional mouse buttons.

Joystick, gamepad, and steering wheel

You can see a joystick first of all during gameful applications. It is an input periphery that got its name from the airplanes' rod control, since both its role and its operation are similar.

A gamepad is also a game controller device that has direction keys, buttons, and switches. With its help, it is possible to control almost any types of games, in a much easier way than with a mouse and/or a keyboard.

A steering wheel is a similar game controller device, to which different pedals can be connected in order to simulate the experience of real driving.

These devices aim at making the use of these game programs more enjoyable.


Barcode reader

Barcode – a code consisting of printed parallel bars in various number, width, and distance between each other. Our reader uses this for unique identification. Its most well-known area of utilisation is notation with unified labels used for the identification of industrial products, and goods. In everyday life, the most frequently, we can meet with barcode scanners built in counters in stores but there are manual readers, too.

Keeping our store example, based on the information obtained by reading the barcode of the goods collected in our basket, the list summarising our shopping gets immediately ready, as well as the receipt with the price of each item and the sum to be paid. At the same time, up-to-date stock monitoring is also provided for the store, and statistics on the turnover can also be compiled from the information.

Scanner
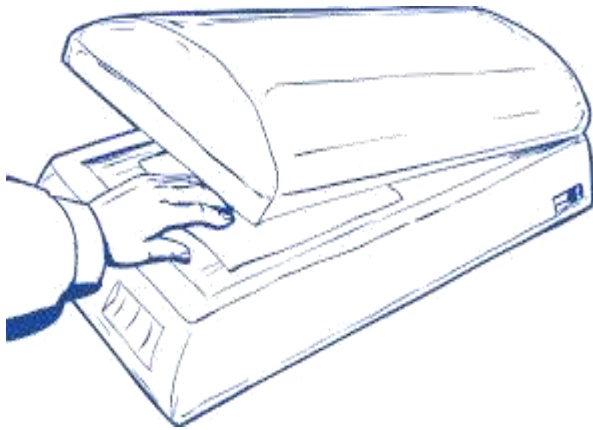
A scanner is a device, with the help of which we are able to "digitise", i.e. *transform something into a format that can be processed by a computer*, we can simply enter already printed texts, photos or drawings into the computer, which allows for their electronic data storage, and publication on the world wide web.

In the past, we could differentiate between black-and-white and colour devices, while today it is already only possible to buy colour scanners in the shops.

There are also multi-functional devices that are printers and scanners in one piece and in addition they are suitable for implementing other activities, too, e.g. sending a fax. There are specific scanners, too, such as slide scanners to enter slides into our computer.

Microphone

A microphone is an input device, i.e. an input periphery. We can talk about built-in microphones, mainly in the cases of laptops and other smart devices, that can be found in the computer housing, as well as about microphones that can be connected to a computer through a microphone inlet. These are mostly used in case of desk top computers. A microphone is a device that is suitable for entering a scale into a computer.

WEB camera

A web camera is a small video camera linked to computers with internet connection, the broadcast of which can be watched by others using the internet. Web cameras can also be put to public places (e.g. a stork's nest or a tourist attraction) and in our own home or office.

We can talk about built-in web cameras, mainly in the cases of laptops and other smart devices, as well as about cameras that can be connected to a computer. These are mostly used in case of desk top computers.

Outlet devices

Data entered into a computer are transferred towards the outside world by outlet peripheries after processing in the central unit. So we can view the result of our accomplished work with the help of output or outlet units, devices or peripheries.
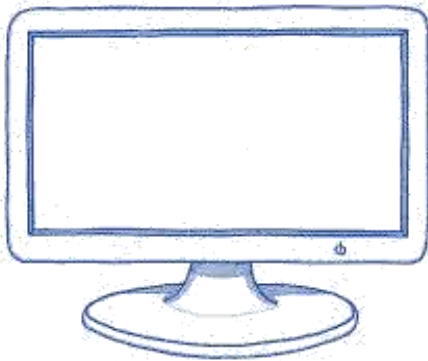
Monitor

A monitor (screen) is the most important output device/periphery of a personal computer. Its function is to display information/data. It ensures permanent connection with the computer for the user.

Over time, the operating principle, the appearance, and also the capacity of monitors underwent substantial changes. Their size decreased, while their capacity increased.

Monitors can be categorised according to their physical setup:

- ✓ monitors with cathode-ray tubes (CRT) have a setup and outlook similar to old TVs,
- ✓ liquid-crystalline (LCD) monitors – used in laptops, and notebook computers; low consumption models that fit in a small place, nowadays already these are more widespread.
- ✓ the least known type is the gas plasma monitor, in which the gases emit light due to inherent moving electrons.

Characteristic parameters of monitors:

- ✓ Size: the size of the diagonal of the image in inch (e.g. 17", 19") 1 inch = 2.54 cm.
- ✓ Resolution: the image consists of pixels. The more pixels the image has, the richer it will be in details. In case of monitors, it is an option to set the resolution we want to use. It depends on two devices: the monitor and the monitor controlling card. Typical resolutions are: 1024×768, 1280×960, 1280×1024, what indicates how many pixels the image has horizontally and vertically. □
- ✓ Colour depth: the quality of the image is also influenced by the number of colours used.

- ✓ Refresh frequency: how many times it re-draws the entire image per second. From the point of view of a human eye, the long term usage of lower than 72 Hz frequency is very tiresome. Setting a value of 85 Hz or higher can be regarded as ergonomic.

Printer

Using a printer allows that we can utilise the result of our work on a sheet of paper, too. After the monitor, this is the second most important output device. It has a one-way data flow: from the computer towards the printer. Modern printers have a memory of their own so that they do not detain the processor that operates at a higher speed than them: when a printer starts to print, the processor may already change for another task.

There are many types of printers: 10-15 basic sorts, including several hundred types, sub-types, and sometimes there are even overlaps among them. Accordingly, it is possible to group them based on several aspects. For us, home users, it is worth getting to know ink-jet and laser printers:

- ✓ Upon printing, an ink-jet printer provides ink on the paper drop-by-drop from the carrier with the help of jets. Current ink-jet printer versions already provide print quality visual form, while some colour types are already capable of preparing photo-realistic quality on special paper. Their purchase price is low, their upkeep is high, so they are mostly widespread for home use.

- ✓ In a laser printer, the image to be printed is drawn by a laser jet on an electrically charged cylinder coated with a specific, photosensitive material (selenium). The ink powder gets on this and is fixed on the paper during a so called poker-work. A laser printer is able to print quickly, in high quality, with low page cost. Some of its types are perfectly suitable for mass printing. Today, there are also colour laser printers. Their purchase price is high, while their upkeep is relatively low, thus they have spread mostly in office application.

Important features of printers:

- ✓ print resolution: the maximum number of pixels on a unit printing area is called image resolution, the unit of measurement of which is dpi *(Dot Per Inch),*

- ✓ print speed: print speed can be measured by cps *(Characters Per Second)* or by the unit of measurement of sheet/min. Cps means the quantity of characters that can be printed during one second, while sheet/min means the quantity of sheets that can be printed during one minute.

Plotter

A plotter first of all helps to prepare big line diagrams, and technical drawings. By now, the line between plotters and ink-jet printers has blurred.

Projector

Nowadays, a projector is an indispensable accessory of presenting presentations compiled by a computer in a size that is enjoyable for a lot of people. It resembles the best a cinema known for a long time, since even in this case, with the help of a device, a projector, big, colourful images or even motion pictures are conjured on a projection screen, wall or canvas.

Interactive board

An interactive board is a device that can also be perfectly applied in teaching, which is a system consisting of a computer, a projector, and a board linked by some software. This system can be controlled even from the board and any material put on the board can be saved immediately, i.e. digitised if we use the notion learnt. With the help of the board, teaching/training can be made exciting, interactive, and experiential.

There are two basic types of interactive boards. One of them is when we receive a real board when purchasing, while the other one is a supplementary device that transforms a simple white board into an interactive board.

Speaker, headset

In order to listen to audio materials, we need speakers or otherwise called loudspeakers or headset, if we do not want to bother others.

A speaker is an outlet device that is suitable for listening to the audios of our computer or other storage.

Speakers can typically be bought in pairs but there are speaker packages, too, which may contain an amplifier part, moreover, even for the sake of stereo effect, 2-3 speakers or 5-8 speakers in order to play the sound effects of DVD films.
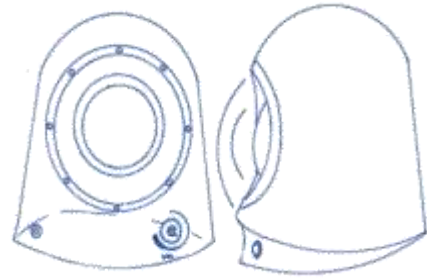
In order to use the speaker packages, a sound card of appropriate quality is also required to serve the loudspeakers. Sometimes the loudspeakers are built in the monitor and distributed in this way.

If we work with our audio and video files in such an environment or want to enjoy their blessings at home, but we do not want to disturb our environment, it is worth changing our speakers into headsets.

Outlet and inlet units

Outlet and inlet units are capable of two-way data exchange. Such devices include touch screens, modems, and headsets combined with microphone.

Touch screen
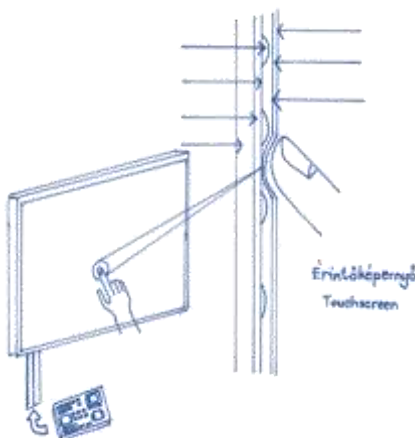
A touch screen is a classic example for outlet and inlet units.

A touch screen is a device that looks like a computer monitor that is not only suitable for the output of our data, but also for input, since we are able to select the commands and functions being displayed on it by a touch with the help of a pressure sensing layer. A double tap with our finger corresponds to a mouse click.

Modem

A modem (modulator-demodulator) allows for a two-way data transmission through traditional telephone line. Today this "dial-up internet" is already considered to be an obsolete technology. These devices are mainly used for connecting to the internet and sending and receiving fax messages.

Headset combined with microphone

This device combines the loudspeaker's outlet function, so it is suitable for listening to the audio files located on the computer's hard disk or any other storage, as well as the microphone's input function, so it is suitable for entering a scale in the computer. It is an indispensable device for accomplishing voice calls and video calls initiated from or received by a desk top computer.

Storages

Storages are located in the computer but there are external portable versions, too. Their task is to store the saved data even when the computer is switched off.

Their types:

- ✓ Mechanical storage: punched card, punched tape (recently not used any more)
- ✓ Magnetic storage: hard disk (Winchester, hard disk, HDD), floppy (no longer in everyday use)
- ✓ Optical storage: CD, DVD, Blu-ray (used less and less)
- ✓ Electronic storage: pendrive, memory card, SSD
- ✓ Magnetic storage

Let us see the storages we will meet with!

Hard disk

A hard disk (in an abbreviated form: HDD or Winchester) is a magnetic surface data carrier. The disk is made of metal; this is where the denomination of the hard disk originates from. It is typically a part built in a computer but currently it also has a portable version. It has high capacity, a huge amount of data can be stored on it, a stable device, fast, and secure.

Pendrive, memory card

A pendrive is an electronic type of computer-aided data storage technology that can be electronically deleted and re-programmed. A storage, and a memory that are integrated with a USB connector *(USB = universal serial bus, a very widespread computer connector nowadays),* which can be connected to computers, and smart devices with it. They have various storage capacities – starting from one that can store a few photos till the one storing several hundred films –, some of them are capable of storing data for 10 years and can stand up to one million writing-deleting cycles. On its own, it is not capable of data exchange. It is only capable of it in a state when it is connected to a personal computer or a write/read unit, with appropriate connector, e.g. smart TV, controlled from it. The storage device does not need supply voltage to preserve information stored in it. This is important because this is how it could become a universal storage and carrier of data among computers.

 A memory card received its name from its shape, since it is a digital storage device, the shape of which is like a card. This storage is easily portable, since its size is small, we can write data on and delete data from it multiple times, which it keeps without energy. Its most frequent application areas include the world of digital cameras, tablets, telephones, smart phones, video cameras, MP3 players, and video game consoles. It has 3 important characteristics that we need to keep in mind when purchasing one: type, storage capacity, and write/read speed.

Laptop and notebook

Although by now, laptop and notebook have converged, formerly laptop meant bigger, many times portable computers, the size of a bag, while notebook meant smaller, portable computers that fit in a bag, which is considered to be normal size by now.

The weight of laptops made it reasonable to have a built-in handle, just like bags, so that it would be possible to carry them more easily. Modern portable computers having a screen diagonal of 17" or larger are their successors. Laptops can be used comfortably both for work

and entertainment, but in turn, we need to dig deeper in our pockets, and although there are excellent and light solutions, we talk about a bigger item even in weight.

In contrast, a notebook is lighter, more portable, in some cases even more affordable, although currently we can also find high performance computers in this category. Notebook size is good for sitting down to browse on the internet as occasion serves, taking it with us to the university (school), working place or working on it while we are on a trip.

Ultrabook

The ultrabook category is considered to be relatively new. Laptops with smaller display diameter existed earlier, too, but actually because of their thickness, we mean not them under this name. An ultrabook is a full worth laptop, not a dumbed-down computer, with thin housing and low mass. Its extraordinary lightness (around 1 kg) and the long battery time are its advantage, while its disadvantage is the bad heat dissipation because of the tiny processor fan resulting from its size.

Netbook

A netbook is a small device designed to be ultramobile, rather used for browsing the internet, which, thanks to the developments, currently already has appropriate resource, but it is still far from options provided by laptops. It is perfectly suitable for browsing the internet, correspondence, making phone calls and listening to music.

Gamer laptop

A Gamer laptop or a laptop for games is not an old category. It took time for the manufacturers to discover that a lot of people use really strong configurations for games. This is how the Gamer category especially made for game players was born, which is accordingly a bigger and expensive portable computer having excellent performance, which is not only chosen by game players, since due to its high performance, it can be a good partner to graphic works, video editing or in addition to designer programs. In everyday life, we do not utilise its capabilities.

Although in each case mobility was one of the governing principles (i.e. the user should not feel himself bound to a single place), various categories partly play their roles well in different tasks.

Therefore, a lot of people use several computers simultaneously, a desk top and a portable computer, too, but in this case it might easily happen that a work commenced on one computer should be continued on another. This is where a big role is allocated to the already familiar portable storages or cloud computing services, through which we are able to retrieve our data from various locations by various devices.

Discoverers of New Worlds

Current elders – let us say above 60, although it is very personal when someone becomes old in body and mind – were young around the 1980-ies. This was the time when standard desktop computers were created (between 1980-1985). If they were lucky, they have grown adults simultaneously with the unfolding of the information society. Having been continuously learning on their own, they would be able to get around in this world without seeking any help, unless confronted with newer and newer devices, and applications running in front of them faster and faster as moving targets. However, this situation has been coming closer to the younger generations, too.

Initially we thought when children would have been studying information technology already at school, there would be no more digitally "illiterate" social groups, so that problem would be solved. But it did not work out that way. It seems to me that from now on there always will be more Piroska aunties – my favourite student who discovered the new digital world at the age of 90 which brightened up her life – who marvel at the newest diabolical gadgets and digital magic not understandable for them. Such resources, a mentor's support, and a learning community offering good practices will always be required by them.

The current and future digital technologies offer the elders the opportunities of quality life by permanently supplementing, expanding, and compensating for their own declining capabilities. They keep the world open for them, make companions accessible, keep up their interest towards their former profession and for the inexhaustible values of culture, they are able to travel both in time and space even when it is already difficult for them to leave the house. But what is even more important for them than that: they are able to remain continuously useful members of the community, because the digital world offers solutions even for that.

This student book is about the basics. By building on the knowledge and skills that can be acquired with its help, together with the "students" it is possible to create all those conditions – community, knowledge bases, living laboratories, and services – with the help of which it is possible to achieve that elderly people should not experience the opportunities of the digital world that already becomes out-of-reach for them as outsiders. On the contrary! They should further enrich the life of their own and of their communities by the re-discovery of the changing world again and again in their free time that is not loaded with work problems any more.

Mátyás GÁSPÁR

Initiator of the Hungarian Tele House Movement