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English for Students of Electrical Engineering Level B2
Part 1

Učebný materiál pre študentov 1. roč. FEI

UNIT 1

THE COMPUTER

PART 1

1 Lead-in

Step 1

Interview your partner about:

- what he/she uses a computer for in his/her free time.
- what is her/his best/worst experience with using a computer.
- if he/she finds a computer to be a helper or rather a time killer.
- what will computers be like in the future.

Step 2

Together write a list of do's and don'ts for a computer user.

2 Fast reading

Scan the text to obtain the following information:

a) definition of a computer
b) the main element in a computer
c) the time when first electronic computers were developed
d) the power source of mobile computers
e) What happened around 2500 BC?
f) Who was Hero of Alexandria?

[1] **A** computer is **a** general purpose device that can be programmed to carry out **a** finite set of <u>arithmetic or logical operations</u>. Since **a** sequence of <u>operations</u> can be readily changed, **the** computer can solve more than one kind of problem.

[2] Conventionally, **a** computer consists of at least one processing element, typically **a** central processing unit (CPU) and some form of memory. **The** processing element carries out <u>arithmetic and logic operations</u>, and **a** sequencing and control unit that can change **the** order of

operations based on <u>stored information</u>. Peripheral devices allow <u>information</u> to be retrieved from **an** external source, and **the** result of operations saved and retrieved.

[3] **The** first electronic digital computers were developed between 1940 and 1945 in **the** United Kingdom and United States. Originally they were **the** size of **a** large room, consuming as much power as several hundred modern personal computers (PCs). In this era mechanical analogue computers were used for <u>military applications</u>.

[4] Modern computers based on integrated circuits are millions to billions of times more capable than the early machines, and occupy a fraction of the space. Simple computers are small enough to fit into mobile devices, and mobile computers can be powered by small batteries. Personal computers in their various forms are icons of the Information Age and are what most people think of as "computers." However, the embedded computers found in many devices from MP3 players to fighter aircraft and from toys to industrial robots are the most numerous.


The Antikythera mechanism

[5] The history of the modern computer begins with two separate technologies, automated calculation and programmability. However no single device can be identified as the earliest computer, partly because of the inconsistent application of that term. A few devices are worth mentioning though, like some mechanical aids to computing, which were very successful and survived for centuries until the advent of the electronic calculator, like the Sumerian abacus, designed around 2500 BC of which a descendant won a speed competition against a modern desk calculating machine in Japan in 1946, the slide rules, invented in the 1620s, which were carried on five Apollo space missions, including to the moon and arguably the astrolabe and the Antikythera mechanism, an ancient astronomical computer built by the Greeks around 80 BC. The Greek mathematician Hero of Alexandria (c. 10–70 AD) built a mechanical theatre which performed a play lasting 10 minutes and was operated by a complex system of ropes and

drums that might be considered to be a means of deciding which parts of the mechanism performed which actions and when. This is the essence of programmability.

[6] In 1642, the Renaissance saw the invention of the mechanical calculator, a device that could perform all four arithmetic operations without relying on human intelligence. Secondly, development of a low-cost electronic calculator, successor to the mechanical calculator, resulted in the development by Intel of the first commercially available microprocessor integrated circuit.

[7] In 1801, Joseph Marie Jacquard made an improvement to the textile loom by introducing a series of punched paper cards as a template which allowed his loom to weave intricate patterns automatically.
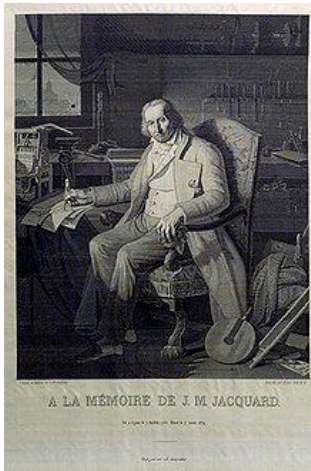
The Most Famous Image in the Early History of Computing

This portrait of Jacquard was woven in silk on a Jacquard loom and required 24,000 punched cards to create (1839). It was only produced to order. Charles Babbage owned one of these portraits; it inspired him in using perforated cards in his analytical engine.

EDSAC was one of the first computers to implement the stored-program (von Neumann) architecture.

[8] The Atanasoff–Berry Computer (ABC) was the world's first electronic digital computer, albeit not programmable. Atanasoff is considered to be one of the fathers of the computer. The first program-controlled computer was invented by Konrad Zuse, who built the Z3, an electromechanical computing machine, in 1941. George Stibitz is internationally recognized as a father of the modern digital computer. While working at Bell Labs in November 1937, Stibitz invented and built a relay-based calculator he dubbed the "Model K" (for "kitchen table,"on which he had assembled it), which was the first to use binary circuits to perform an arithmetic operation. Later models added greater sophistication including complex arithmetic and programmability.

3 Comprehension questions

   a) How do peripheral devices handle information?

   b) Why can't we find a single device that can be called "the first computer"?

   c) What device won the speed competition in Japan in 1946?

   d) How did the ancient mechanical theatre work?

   e) What did J.M. Jacquard use punched cards for?

   f) Which machines mentioned in Paragraph 8 weren't programmable?

4 Do you know more early computers that were used in the 20th century?

5 Guess the meaning of the following words from context.

sequencing [2]	perform [5]
icons [4]	relying [6]
embedded [4]	loom [7]
inconsistent [5]	intricate [7]
descendant [5]	albeit [8]
arguably [5]	dubbed [8]

6 Home assignment

Search the web to explain the meaning of the underlined words in Task 5 in English. Select the one that best suits the context.

PART 2

FACTS ABOUT THE FACULTY

- **Official English name:** Slovak University of Technology, Faculty of Electrical Engineering and Information Technology

- Established as an independent faculty in 1950

- **The faculty is divided into 10 institutes:**

  o   Institute of Automotive Mechatronics

  o   Institute of Computer Science and Mathematics

  o   Institute of Electrical Engineering

  o   Institute of Electronics and Photonics

  o   Institute of Nuclear and Physical Engineering

  o   Institute of Multimedia, Information and Communication Technologies

  o   Institute of Power and Applied Electrical Engineering

  o   Institute of Robotics and Cybernetics

  o   Institute of Communication and Applied Linguistics

  o   Sports Technology Institute

- **Eight bachelor study programmes are offered:**

  o   Applied Informatics

  o   Automotive Mechatronics

  o   Electrical Engineering

  o   Electronics

  o   Nuclear and Physical Engineering

  o   Power Engineering

  o   Robotics and Cybernetics

  o   Telecommunication

1 University education vocabulary is quite specific. Different countries frequently use their own terminology. There are many differences also between the British and US terminology. For instance, it is possible to describe university as "college" or "school" in American English, but not so in British English where these words mean something quite different.
Try and match the words on the right with their definitions on the left.

work that you must do as a part of a course of study	course
a number that represents how well someone did on a test	graduate study
money that you pay to take classes	major
the first year student of a university (US)	graduate (n.)
a degree awarded to a person who has successfully completed undergraduate studies at university	score
a record of all courses and grades received by a student	faculty
the time in which students are pursuing a graduate degree	assignment
time in which a college or university holds classes	transcript
policies regarding cheating, fabrication, plagiarism and unauthorized collaboration	tuition
the area and buildings around a university	academic term
series of prescribed lessons, lectures, etc, in an educational curriculum	degree
an official document and title given after successful completion of studies at a university	Academic Honesty and Integrity
the group of teachers in a school or college (US)	freshman
to be unsuccessful in passing an exam / course of study	graduate (v.)
to earn a degree or diploma from a university	fail
a person who has earned a degree from a college or university	bachelor's degree
a field of study chosen as an academic specialization	scholarship
a type of financial aid grant	campus

UNIVERSITY DEGREES

Slovak		**Anglo-American**
1st degree	Bc.	BEng. (Bachelor of Engineering)
		B.Sc. (Bachelor of Science)
		B.A. (Bachelor of Arts)
2nd degree	Ing.	MEng. (Master of Engineering)
		MSc. (Master of Science)
	Mgr.	M.A. (Master of Arts)
3rd degree	PhD.	Ph.D. (Doctor of Philosophy)

2 Pair Work

Make a list of courses you have taken this semester. What are they called in English? Then discuss with your partner which courses you like and why? Form new pairs. Tell the new partner about your former partner's activities.

3 Fill in the table with your current timetable and present it to your partner.

	7:00 – 12:00	**12:00 – 20:40**
Monday		
Tuesday		
Wednesday		
Thursday		
Friday		

4 Look at this description of a student's first semester. Write down the questions the interviewer could have asked to obtain the information printed in *italics*.

In the first semester Thomas had to take *eight* courses. He had lectures and seminars on *five* days each week. On Mondays he had *a lecture and a seminar in Calculus. Tuesday* wasn't a very busy day, because he had only two seminars – English and Logic Systems. In the afternoons *he spent a few hours in his father's firm* where he did some programming. On Wednesdays he had Physical Education *in the gym* and a lecture in Safety in Electrical Engineering *in lecture hall AB 300.* On Thursdays he went to the faculty *for a lecture and a seminar in Introduction into Engineering. A seminar in Safety in Electrical Engineering* took place in the laboratory on Friday mornings.

PART 3   EXTRA WORK

ARTICLE USE

- We use two articles in English   **a/an** - indefinite article - **singular only** (zero article is used in plural)

  the - definite article - **singular and plural**

- We use *a* before **words that start with a consonant** - e.g. a **h**ouse, a **l**arge house, a **d**river (but note **an h**our)

- We use *an* before **words that start with a vowel** - e.g. an **e**ngineer, an **o**ld house (but note **a u**niversity, **a u**sual thing)

`A/an

- We use a/an to say **what kind of thing** somebody or something is, what **job** a person does, or **what** something is **used as**.

He is **a computer specialist**.   They are **specialists**.

Peter is **an electrical engineer**.   We are **engineers.**

Don't use the plate as **an ashtray**.   Don't use the plates as **ashtrays**.

- A/an can mean **"any example of something"**.

8

A spider has eight legs.

A notebook computer costs more than a desktop one.

- A/an can mean **"a particular one"**, if you don't say exactly who or which. In the plural we use **some** or **zero article**.

A man was looking for you when you were out.　　　**Some men** called.

Judith married **a doctor**.　　　They both married **doctors**.

PLEASE REMEMBER

- We **don't use a/an** with **uncountable nouns** (not *a snow)

- **A/an** usually comes after **quite, rather,** and **such**. quite/rather/such a nice day

- **A/an** is used in **descriptions:** She's got a long nose and a short neck. (note that **hair** is **singular** and has **no article**.) She's got fair hair. (NOT *a fair hair or *fair hairs)

The = you know which one(s)

- **The** means "**you know which one(s)** I mean"

I bought a scanner and a printer, but the printer didn't work. (the printer I just told you about - you know which one).

The house over there belongs to my uncle. (the house I'm pointing out to you - you know which one)

- We often use **the** with **only** and with **superlatives**.
  It's **the best** pub in town.

  John is **the only** friend he has.

PLEASE REMEMBER

We do not use the in generalisations with plural and uncountable nouns.

Compare:

I like music (not *the music)	This is the music I like.
She's very interested in nature.	What's the nature of his illness?
Milk is healthy.	Put the milk in the fridge.

- We can use **the** in **generalisations** with **singular countable nouns**, to talk about a whole class of things. **This is common in scientific and technical language.**

    e.g. Who invented **the telescope**?

The telephone is the most widespread means of wireless communication.

1 Complete these sentences on your own:

    a) In my place there is a nice _____.
    b) I've got a/an _____.
    c) There is a/an _____ in my pocket.
    d) I have never seen a/an _____.
    e) Seeing a/an _____ means good/bad luck.

2 Put in *the* if the speaker and hearer probably know exactly which (one/ones). Put in a/an or 0 (=no article) if not.

    a) Who turned on _____ radio?
    b) Which jacket is yours? _____ brown one.
    c) Who's _____ girl by _____ piano?
    d) Friday is _____ only working day I enjoy.
    e) My sister is married to _____ engineer.
    f) They've got _____ boy and _____ girl. _____ boy's two years younger than _____ girl.
    g) I want to put some money into my bank account, so I'm going to _____ bank this afternoon. It is in _____ Main Street.
    h) We flew to _____ Dublin airport in _____ Ireland.
    i) _____ mathematics is _____ course I like best.
    j) She lives in _____ centre of London.
    k) We phoned for _____ taxi to take us to _____ airport.
    l) After _____ dinner I washed _____ plates and dishes.
    m) Without _____ petrol, _____ cars don't work.
    n) Did you like _____ food at _____ party yesterday?
    o) I'd like _____ cup of tea.
    p) _____ man in _____ next flat is Italian.
    q) He's _____ bravest child in _____ school.

3 Put in the, a/an or 0 (= no article).

Do you see _____ man standing in front of _____ restaurant over there? He works as _____ assistant in _____ shoe shop next door. Well, when I saw him last he was driving _____ big black Mercedes. And do you see _____ clothes he's wearing? Where did he get _____ money from? _____ year ago he hardly had _____ penny. I told you about _____ burglary that they had at _____ shop where he works? Do you think I should have informed _____ police?

4 Explain the use of a, the (printed in bold typeface) and 0 (before the underlined nouns) in Paragraphs [1], [2], and [3].

PART 4 NUMBERS AND MATHEMATICAL EXPRESSIONS

1 Listening **Numbers**

Listen to these numbers and circle the ones you hear.

13	14	15	16	17	18	19

30	40	50	60	70	80	90

3,450	1,700,004	195	1,760

3,480	1,700,040	159	1,670

Listen to these numbers and repeat them:

100	152	1,874	6,052

1,000	1,001	1,000,001	22,437,237

Listen to these fractions and repeat them:

1/2	3/4	2/3	6/7	1/8	3/5

Repeat these decimals:

0.78	9.882	14.071	3.142

2 Learn how to say these mathematical expressions

addition: $a + b = c$ a plus b equals c

subtraction: $x - y = z$ x minus y equals z

multiplication: 6 x 4 = 24   6 times 4 or 6 multiplied by 4 equals 24

division: $8 : 2 = 4$ 8 divided by 2 equals 4

$$\frac{8}{2} = 4$$ *the division bar is usually used (not the division sign)*

8   numerator   2   denominator

involution (raising to a power): $a^2 + b^3$ a squared plus b cubed

a^4 a to the power of four,

a to the fourth (power) *(4 is the exponent)*

b^{-5} b to the minus fifth (power)

evolution (extracting the root) $\sqrt{a}$ the square root of a

$\sqrt[3]{a}$ the cube root of a

$\sqrt[4]{a}$ the fourth root of a (*⁴ is called index, pl. indices*)

$\sqrt{a+b}$ the square root of the sum of *a* plus b

x_0 x zero/x nought

3 Write down these numbers and mathematical expressions

2,625 ....

2019 ....

3.96 ....

7, 585, 231 ....

7/16 ....

1/8 ....

25 : 5 = ...

147 – 48 = ...

21 + 15 = ...

80 x 2 = ...

$\sqrt[4]{x} + y$ ....

$\sqrt{36}$ ....

x^{-12} ....

$\sqrt[3]{128}$ ....

UNIT 2

OPERATING SYSTEMS

PART 1

1 Lead-in

STEP 1

Student A

Write down five adjectives that characterise a good operating system.

Student B

Write down five adjectives that characterise a bad operating system.

STEP 2

Work in pairs: share your experience (and also experiences) of using a well working operating system and a badly working one.

OPERATING SYSTEMS (1)

General characteristic

[1] An operating system (OS) is a collection of software that manages computer hardware resources and provides common services for computer programs. The operating system is an essential component of the system software in a computer system. Application programs usually require an operating system to function. Time-sharing operating systems schedule tasks for efficient use of the system and may also include accounting software for cost allocation of processor time, mass storage, printing, and other resources.

[2] For hardware functions such as input and output and memory allocation, the operating system acts as an intermediary between programs and the computer hardware, although the application code is usually executed directly by the hardware and will frequently make a system call to an OS function or be interrupted by it. Operating systems can be found on almost any device that contains a computer—from cellular phones and video game consoles to supercomputers and web servers.

[3] Examples of popular modern operating systems include Android, BSD, iOS, Linux, OS X, QNX, Microsoft Windows, Windows Phone, and IBM z/OS. All these, except Windows, Windows Phone and z/OS, share roots in UNIX.

History

[4] Early computers were built to perform a series of single tasks, like a calculator. Basic operating system features were developed in the 1950s, such as resident monitor functions that could automatically run different programs in succession to speed up processing. Operating systems did not exist in their modern and more complex forms until the early 1960s. Hardware features were added, that enabled use of runtime libraries, interrupts, and parallel processing. When personal computers became popular in the 1980s, operating systems were made for them similar in concept to those used on larger computers.

[5] In the 1940s, the earliest electronic digital systems had no operating systems. Electronic systems of this time were programmed on rows of mechanical switches or by jumper wires on plug boards. These were special-purpose systems that, for example, generated ballistics tables for the military or controlled the printing of payroll checks from data on punched paper cards. After programmable general purpose computers were invented, machine languages (consisting of strings of the binary digits 0 and 1 on punched paper tape) were introduced that sped up the programming process.

OS/360 was used on most IBM mainframe computers beginning in 1966, including computers utilized by the Apollo program.

[6] In the early 1950s, a computer could execute only one program at a time. Each user had sole use of the computer for a limited period of time and would arrive at a scheduled time with program and data on punched paper cards and/or punched tape. The program would be loaded into the machine, and the machine would be set to work until the program completed or crashed. Programs could generally be debugged via a front panel using toggle switches and panel lights. It is said that Alan Turing was a master of this on the early Manchester Mark 1 machine, and he was already deriving the primitive conception of an operating system from the principles of the Universal Turing machine.

2 Comprehension questions. Read Paragraphs [1] [2] and [3]. There is one ready-made question for each paragraph. Form the missing ones and ask and answer them together with your partner.

[1]   a) Define an operating system.

        b) ....

        c) ....

[2]   a) What is the role of an operating system for hardware functions?

        b) ....

        c) ....

[3]   a) ....
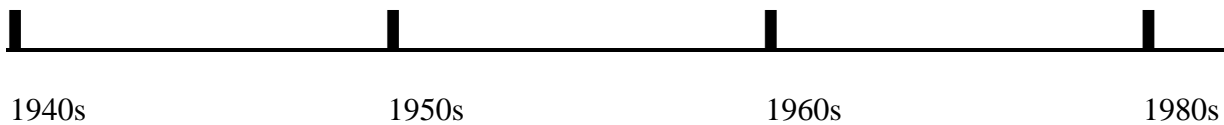
        b) Which operating systems do not share roots in UNIX?

3 Read Paragraphs [4] [5] and [6] and fill in this timeline showing the development of early operating systems.

| 1940s | 1950s | 1960s | 1980s |

4 Vocabulary. Explain the following terms:

1) application program [1]
2) intermediary [2]
3) cellular phone [2]
4) supercomputer [2]
5) task [4]
6) succession [4]
7) parallel processing [4]
8) jumper wire [5]
9) plug board [5]
10) punched cards [6]
11) debug [6]

LANGUAGE FOCUS 1 SUBJECT-VERB AGREEMENT (CONCORD)

Concord is the agreement between the subject and the verb.

When the subject is singular, the verb should be singular too, e.g. My sister is a student.

When the subject is plural, the verb is also expected to be plural, e.g. All my friends are students.

But there are some specific rules of concord:

A) with the phrase "a pair of" – A pair of jeans is put on the chair.

B) rule of proximity – is applied when there is a list of nouns or pronouns with or/nor, neither/nor, either/or, not only/but also used as the subject. Then the nearest noun or pronoun determines the choice of the verb, e.g. The parents or the grandmother has to care about the child. Either me or my colleagues have to do that business. Either the students or their teachers have failed.

C) with a collective noun; it is a noun which stands for many units constituting a single word, e.g. group, family, police, e.g. Our group was founded five years ago. (collective noun), The group always meet on 23 December. (a group of people)

D) mathematics, physics, economics, measles, ergonomics are singular and take singular verbs, e.g. Ergonomics is the science of work and a person's relationship to that work.

E) when two subjects refer to the same person or thing, a singular verb is used, e.g. The CEO and head of economic department is the company's most important figure.

F) phrases such as "two hundred times", "five percent", "fourteen days" that refer to a unit distance, time or money take a singular verb, e.g. Fourteen days is not such a long period of time.

G) with "all" – meaning everything – a singular verb is used, "all" – meaning all the people – a plural verb is used, e.g. All is well with him. (Everything is well ...), All are waiting for you. (All the people are waiting ...)

H) with as well as, together with, in association with, including, in collaboration with etc - if the subject coming before any of these phrases is singular, the verb is singular; if it is plural, the verb is also plural. The children together with their mother are here. The teacher together with his students is in the classroom.

5 Put the verb in brackets in the correct form.

a) Either my grandmother or my brother (was/were) at home. I don't remember which one.
b) Neither me nor my sister (is/are) good at math.
c) Each of the parents (is/are) responsible for the child's school attendance.
d) The CEO along with his staff (was/were) present at the opening of the new company headquarters.
e) There (is/are) only little money left.
f) The staff (is/are) thinking about going on strike.
g) A number of staff (was/were) present at the meeting with the Director General.
h) The President, together with the First Lady, (greets/greet) the guests.

i) The President and the First Lady (greets/greet) the guests.
j) The book, including the annexes, (takes/take) about two weeks to read.
k) One million cars (was/were) produced in Slovakia last year.
l) Almost a half of tropical rainforests (has/have) been destroyed by man.
m) The police (is/are) after a criminal.
n) 10 € (is/are) not a large sum of money nowadays.
o) The United States (is/are) the world's leading economy.

PART 2

OPERATING SYSTEMS (2)

1 Fast reading 1

a) What replaced B?
b) Which subcategories make up the UNIX family?
c) Which operating systems are referred to as UNIX-like?
d) Which system had been Apple's primary since 1984?
e) Which company did Apple purchase in 1997?
f) What is an open source license?
g) What does 1.82% refer to?
h) What has Microsoft done to promote the use of Windows as a server operating system?

UNIX and UNIX-like operating systems

Unix was originally written in assembly language. Ken Thompson wrote B, mainly based on BCPL, based on his experience in the MULTICS project. B was replaced by C, and Unix, rewritten in C, developed into a large, complex family of inter-related operating systems which have been influential in every modern operating system.

The UNIX-like family is a diverse group of operating systems, with several major sub-categories including System V, BSD, and Linux. The name "UNIX" is a trademark of The Open Group which licenses it for use with any operating system that has been shown to conform to their definitions. "UNIX-like" is commonly used to refer to the large set of operating systems which resemble the original UNIX.

OS X (formerly "Mac OS X") is a line of open core graphical operating systems developed, marketed, and sold by Apple Inc., the latest of which is pre-loaded on all currently shipping Macintosh computers. OS X is the successor to the original Mac OS, which had been Apple's primary operating system since 1984. Unlike its predecessor, OS X is a UNIX operating system built on technology that had been developed at NeXT through the second half of the 1980s and up until Apple purchased the company in early 1997. The operating system was first released in 1999.

Linux and GNU

Linux (or GNU/Linux) is a Unix-like operating system that was developed without any actual Unix code, unlike BSD and its variants. Linux can be used on a wide range of devices from supercomputers to wristwatches. The Linux kernel is released under an open source license, so anyone can read and modify its code. It has been modified to run on a large variety of electronics. Although estimates suggest that Linux is used on 1.82% of all personal computers, it has been widely adopted for use in servers and embedded systems (such as cell phones). Linux has superseded Unix in most places. The Linux kernel is used in some popular distributions, such as Red Hat, Debian, Ubuntu, Linux Mint and Google's Android.

Microsoft Windows

Microsoft Windows is a family of proprietary operating systems designed by Microsoft Corporation and primarily targeted to Intel architecture based computers, with an estimated 88.9 percent total usage share on Web connected computers.

Microsoft Windows originated in 1985 as an operating environment running on top of MS-DOS, which was the standard operating system shipped on most Intel architecture personal computers at the time. In 1995, Windows 95 was released which only used MS-DOS as a bootstrap. Windows ME, released in 2000, was the last version in the Win9x family. Later versions have all been based on the Windows NT kernel.

Server editions of Windows are widely used. In recent years, Microsoft has expended significant capital in an effort to promote the use of Windows as a server operating system. However, Windows' usage on servers is not as widespread as on personal computers, as Windows competes against Linux and BSD for server market share.

2 Fast reading 2

    a) What devices do mobile OS operate?
    b) What is the main user-facing platform supplemented by?
    c) Give the examples of software on Android devices which is proprietary and licensed.
    d) How did the Android market share rise between the second quarter of 2009 and 2010?
    e) How do Blackberry, iOS, and Windows Phone differ from Android from the source point of view?
    f) When was Windows Phone launched?

MOBILE OPERATING SYSTEMS

A mobile operating system, also referred to as mobile OS, is an operating system that operates a smartphone, tablet, PDA, or other mobile device. Modern mobile operating systems combine the features of a personal computer operating system with other features, including a

touchscreen, cellular, Bluetooth, Wi-Fi, GPS mobile navigation, camera, video camera, speech recognition, voice recorder, music player, near field communication and infrared blaster.

Mobile devices with mobile communications capabilities (e.g. smartphones) contain two mobile operating systems - the main user-facing software platform is supplemented by a second low-level proprietary real-time operating system which operates the radio and other hardware. Research has shown that these low-level systems may contain a range of security vulnerabilities permitting malicious base stations to gain high levels of control over the mobile device.

The most common mobile operating systems are:

Android

Android is from Google Inc. Most of Android is free and open source, but a large amount of software on Android devices (such as Play Store, Google Search, Google Play Services, Google Music, and so on) are proprietary and licensed. Android's releases prior to 2.0 (1.0, 1.5, 1.6) were used exclusively on mobile phones. Android 2.x releases where mostly used for mobile phones but also some tablets. Android 3.0 was a tablet-oriented release and does not officially run on mobile phones. Most major mobile service providers carry an Android device. Since HTC Dream was introduced, there has been an explosion in the number of devices that carry Android OS. From second quarter of 2009 to the second quarter of 2010, Android's worldwide market share rose by 850% from 1.8% to 17.2%. On November 15, 2011, Android reached 52.5% of the global smartphone market share.

Blackberry

BlackBerry 10 - it is closed source and proprietary. BlackBerry 10 (previously BlackBerry BBX) was the next generation platform for BlackBerry smartphones and tablets. One OS was planned for both Blackberry smartphones and tablets going forward.

iOS

iOS is from Apple Inc. It is closed source and proprietary and built on open source Darwin core OS. The Apple iPhone, iPod Touch, iPad and second-generation Apple TV all use an operating system called iOS, which is derived from Mac OS X. Native third party applications were not officially supported until the release of iOS 2.0 on July 11, 2008. Before this, "jailbreaking" allowed third party applications to be installed, and this method is still available. Currently all

iOS devices are developed by Apple and manufactured by Foxconn or another of Apple's partners.

 Windows Phone

Windows Phone is from Microsoft. It is closed source and proprietary. On February 15, 2010, Microsoft unveiled its next-generation mobile OS, Windows Phone. The new mobile OS includes a completely new over-hauled UI inspired by Microsoft's "Metro Design Language". It includes full integration of Microsoft services such as OneDrive and Office, Xbox Music, Xbox Video, Xbox Live games and Bing, but also integrates with many other non-Microsoft services such as Facebook and Google accounts. Windows Phone devices are made primarily by Nokia, along with HTC, Samsung, Huawei and other OEMs.

3 Discussion points.

   a) Why is Android the currently most popular mobile OS?

   b) Have you ever used or do you use a mobile OS other than Android? Share your experience(s) with your partner.

   c) Which other mobile OS except those mentioned in the above article do you know? Do they have any common features with the above systems?

PART 3   EXTRA WORK

LANGUAGE FOCUS 2 - DESCRIPTION OF GRAPHS

When we have to describe a graph, the following should be mentioned:

- What the graph shows

- What values and units are represented on axes x(horizontal) and y(vertical)

- The course of the curve(s) with regard to axes x and y has to be described

Tense use:

Present Simple is used for a simple description of a graph, e.g. The horizontal axis shows the years and the vertical the number of tablets sold in these years in Slovakia.

Past Simple is used to describe the past situation, e.g. The sale of cell phones rose sharply in 1994.

Present Perfect Simple/Continuous is used to show a trend that started in the past and continues up to the present, e.g. The unemployment rate in Slovakia has remained almost steady since 2011. The sale of tablets has been growing steadily since 2012.

Useful words and phrases

fluctuate, level off, remain steady, reach a peak, fall/rise sharply/steadily/slightly, gradually, dramatically

**Types of graphs:** pie chart, bar chart, line graph

1 Put the verb in brackets in the correct form.

a) The unemployment rate (increase) from 12.4% in 2010 to 13.5% in 2014.

b) The vertical axis (show) the number of manufactured cars.

c) Nowadays inflation in the EU (remain) almost steady.

d) Trade between Slovakia and Germany (increase) constantly in the last twenty years.

e) We (register) a slight increase in car production between 2012 and 2014.

f) The birth rate (drop) sharply in the 1990s.

2 Fill in the missing prepositions in these sentences.

a) The figures …… the number …… visitors ….. Slovakia show similar trends.

b) Car production rose ……… ten thousand last year.

c) Slovakia has become an increasingly popular destination …… visitors.

d) The figures shown in this graph do not correlate …….. those shown …….. my colleague's presentation.

e) In 2012 there was an increase ……… the number of smart phones sold in the EU countries.

f) The figures shown are …….. stark contrast with 1998.

g) The figures started ……… a similar amount around 5,000.

h) There are fluctuations ………. the number of people using public transport in Bratislava.

i) Then there is a rapid rise ……… a peak ……… 20,000 passengers ……… 4 and 6 p.m.

3   Describe the following graphs:
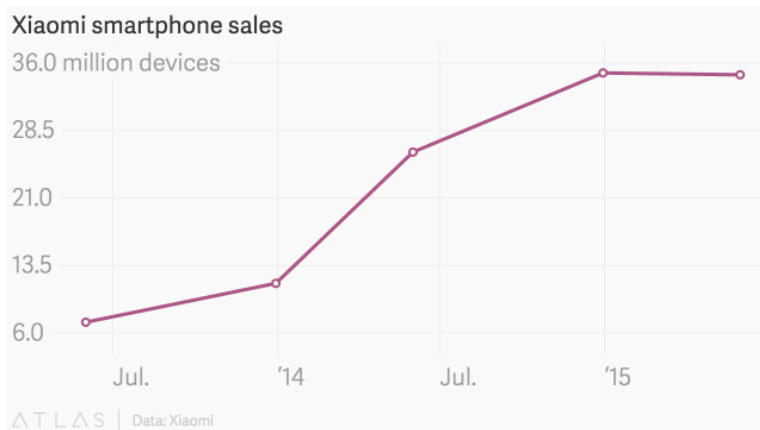
Source: Xiaomi Company
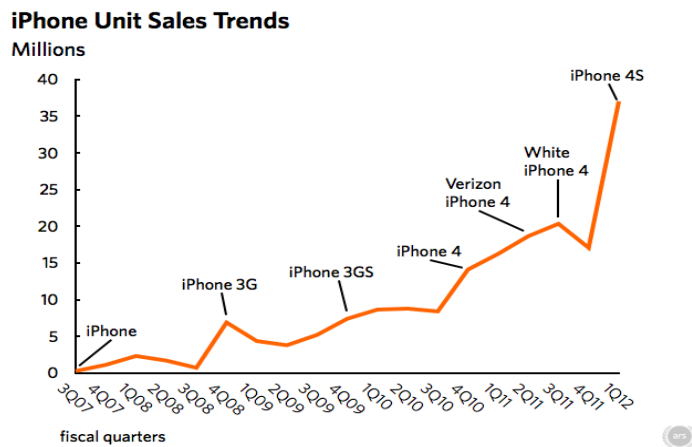
Source: Apple financial reports

4   Home assignment: Find or design a graph and describe it in writing.

UNIT 3

COMPUTER CRIME

PART 1

1 Lead-in

Discuss these questions with your partner.
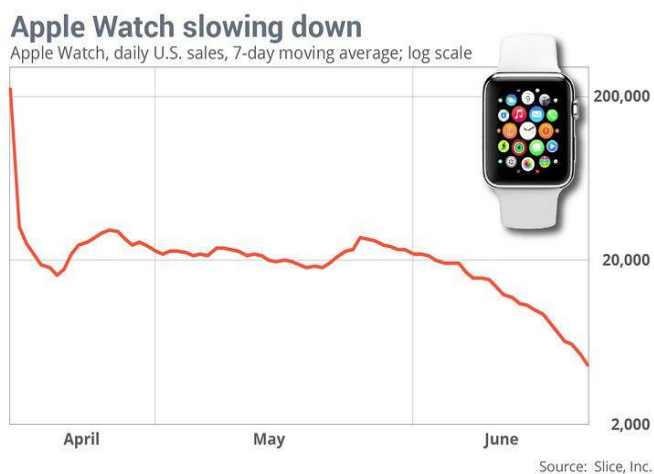
Have you ever been a victim of any type of computer crime? What happened?

What do people commit computer crimes for?

Which types of computer crime do you take for most dangerous?

What protective measures can be introduced?

2 Fast reading

Scan the article to answer the following questions:

    a) Does computer crime involve damage to physical property?

    b) What are the two ways of carrying out phishing?

    c) What activities fall under the class of cyberstalking?

    d) Why is identity theft one of the most serious frauds?

3 Reading

Read the article, complete the missing parts on your own and compare them with your partner.

Introduction: Computer crime involves criminal activities, which include the use of information technology to gain an illegal or an unauthorized access to a computer system with intent of damaging, deleting or altering computer data. Computer crime may not necessarily involve damage to physical property. They rather include the manipulation of confidential data and critical information. Computer crime involves activities of software theft, wherein the

privacy of the users is hampered. The different types of computer crime have necessitated the introduction and use of newer and more effective security measures.
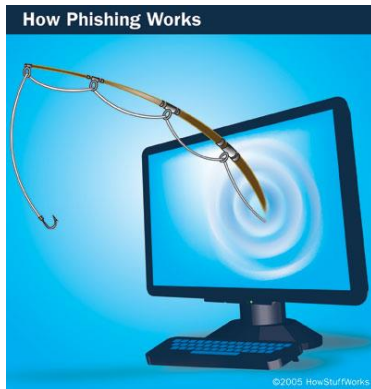
Phishing: Phishing is the act of attempting to acquire sensitive information like usernames, passwords and credit card details by disguising as a trustworthy source. Phishing is carried out through emails or by luring the users to enter personal information at a fake website. Criminals often use websites that have a look and feel of some popular website, which makes the users feel safe to enter their details there.

Hacking:

....
....
....
....

Cyberstalking: The use of communication technology, mainly the Internet, to torture other individuals is known as cyberstalking. False accusations, transmission of threats and damage to data and equipment fall under the class of cyberstalking activities. Cyberstalkers often target the users by means of chat rooms, online forums and social networking websites to gather user information and harass the users on the basis of the information gathered. Obscene emails, abusive phone calls and other such serious effects of cyberstalking have made it a type of computer crime.

Computer Viruses:

....

....

....

....

Identity Theft: This is one of the most serious frauds as it involves stealing money and obtaining other benefits through the use of a false identity. It is the act of pretending to be someone else by using someone else's identity as one's own. Financial identity theft involves the use of a false identity to obtain goods and services and a commercial identity theft is the using of someone else's business name or credit card details for commercial purposes. Identity cloning is the use of another user's information to pose as a false user. Illegal migration, terrorism and blackmail are often made possible by means of identity theft.

Malware:

....

....

....

....

(Adapted from the article written by Manali Oak (available at www.buzzle.com)

4 Comprehension questions

Find answers to the given questions and write the missing ones on your own.

(Introduction) How does computer crime influence user's privacy?

(Phishing). How do criminals confuse the users?

(Hacking) ....

(Cyberstalking) How do cyberstalkers contact the users?

(Computer Viruses) ....

(Identity Theft) What is the difference between identity theft and identity cloning?

(Malware) ....

What other types of computer crime do you know?

5 Vocabulary

Which words from the text have a similar meaning to these?

change (Introduction)	obtain (Phishing)	aim (Cyberstalking))
restrict (Introduction)	attract (Phishing)	claim (Identity Theft)
require (Introduction)	irritate (Cyberstalking))	pretend (Identity Theft)

PART 2

FAMOUS COMPUTER HACKERS

Kevin Poulsen

Like Kevin Mitnick, Kevin Poulsen was hunted by the FBI and was the subject of a book "The Watchman": The Twisted Life and Crimes of Serial Hacker Kevin Poulsen" chronicling his hacking exploits. And like Mitnick, Poulsen eventually went straight, giving up hacking.

But before Poulsen rediscovered the right side of the law, he accrued a litany of hacking exploits, some of them illegal. While still a child, he learned how to whistle into a payphone in order to get free calls (he channelled the sound through his braces). He hacked a radio station's phone lines in order to win a call-in contest whose prize was a Porsche. He eventually earned the distinction of being the first hacker charged with espionage after he allegedly stole classified information from the Air Force. Other charges against him include hacking into Pacific Bell. Eventually he was sentenced to 51 months for his crimes.

Since giving up hacking, Poulsen has become a journalist, working as a senior editor at Wired magazine, where he often writes about hackers.

Adrian Lamo

Earlier on in his hacking career, Adrian Lamo was something of a good Samaritan, known by the moniker "the homeless hacker" because he sometimes took up residence in abandoned buildings. As a hacker, Lamo broke into the networks of a number of major companies - Excite@Home, MCI WorldCom, Yahoo, Microsoft and Google - but he often contacted the companies and told them about the security holes. In some cases, he also helped them fix these holes without accepting any compensation.

He finally got into trouble when he hacked into The New York Times - from a computer at a Kinko's - in 2003. He found a <u>trove</u> of information there, including personal details on thousands of people who had written for the paper, including celebrities and ex-presidents. To avoid jail time, he <u>negotiated a plea bargain</u> that included six months of house arrest.

In recent years, Lamo has been in the news for reporting Bradley Manning to police. Manning, a U.S. Army private first class, allegedly <u>funnelled</u> thousands of classified documents to the <u>whistleblower organization</u> WikiLeaks and then contacted Lamo, who said that Manning <u>boasted</u> about his actions. Lamo's role in the affair, in which he presented himself as a journalist, has attracted some <u>controversy.</u>

Gary McKinnon

Like Adrian Lamo, Gary McKinnon has been diagnosed with Asperger's syndrome. This Scottish hacker's supporters have protested plans for the U.K. government to <u>extradite</u> him to the United States to face trial for allegedly hacking into U.S. government computers. Those working on McKinnon's behalf worry that he is "too psychologically fragile" and may commit suicide. His case has contributed to a serious debate about the U.K.'s extradition policies.

McKinnon is under suspicion for hacking into U.S. government computer networks in late 2001 and early 2002, in what's been called a historic breach of security. A British court judgment accuses McKinnon of infiltrating 97 computers, installing hacking software, deleting important files and stealing information. He <u>confessed</u> that he left a threatening note on one Army computer, in which he identified himself by the name "SOLO."McKinnon has admitted to the hacks and said he thought he could find evidence that the United States was <u>covering up</u> the existence of UFOs. His case remains ongoing.

Gary McKinnon is accused of hacking into U.S. government computer networks in late 2001 and early 2002.

Source: dsc.discovery.com

1 Order the hacking attempts from (in your opinion) the most to the least dangerous. Justify your order.

1..
....

2..
....

3..
....

2 Do you know any other hackers or cases of hacking?

3 Vocabulary

Step 1 – Try to guess the meaning of the underlined words and phrases from context.

Step 2 – Search the web for their definitions which best suit the context.

4 Make questions in such a way that the bold printed part of the sentence will be the answer. In your answers use the same tense as in the given sentences.

   a) Poulsen was the subject of a book **"The Watchman"**.

   b) Before Poulsen rediscovered the right side of the law, **he accrued a litany of hacking exploits**.

   c) Earlier on in his hacking career, Adrian Lamo was **something of a good Samaritan**.

   d) **Lamo** sometimes took up residence in abandoned buildings.

   e) McKinnon has been diagnosed with **Asperger's syndrome**.

LANGUAGE FOCUS 1   PRESENT PERFECT VS PAST SIMPLE

Here are the less frequent uses of Present Perfect and Past Simple:

Present Perfect
is used
- **for an action that has just been concluded - it is new to the recipient**
  I have lost my phone, can I use yours? I need to make an urgent call.
  Hurrah, I have passed math!

- **with "This is the first time"**
  This is the first time I have had a holiday like this.

- **With this morning, this afternoon etc. if it is said during this time**
  I have seen Pete this afternoon. (it is still afternoon), compare with I saw Pete this afternoon (this is said in the evening).

Past Simple:
is used
- **For talking about the origin of something present (mostly when we talk about the doer)**
  George locked this door.
  It was us who finished this project.

Do you know the frequent uses of the above tenses?

5 Put the verb in brackets in Present Perfect or Past Simple.

a) Precipitation .... (become) more frequent in Central Europe in recent years.

b) I .... (not see) James since we .... (take) the finals at university.

c) Who .... (lose) this umbrella?

d) I .... (hear) Susan speak in the kitchen when I was watching TV in the living room.

e) Oh, look! The Simpsons .... (come) to see us!

f) When I was walking out of the school building, I .... (meet) Frank. It .... (be) fully unexpected for me.

g) Unfortunately the bank .... (fail) to provide a mortgage.

h) Julia .... (call on) me while I .... (be) in the garden.

i) I am glad to know that you .... (succeed) in passing the Cambridge First Certificate in English.

j) This computer is not working anymore. It .... (break) by my brother.

LANGUAGE FOCUS 2 - PREPOSITIONS OF PLACE

Here are some example sentences showing the use of prepositions of place to describe how a computer works:

Peripheral devices allow information to be retrieved **from** an external source.

Data moves **between t**he CPU and RAM.

Data is transferred **along** the data bus.

6 Complete each sentence using the correct preposition.

a) Data is moved .... one location .... another.

b) A message is sent .... some external device.

c) These instructions are read .... the computer's memory.

d) Peripherals are devices .... the computer but linked .... it.

e) The computer can be instructed to "put the number 123 .... the cell numbered 1357".

f) A specialized program called the BIOS that orchestrates loading the computer's operating system .... the hard disk drive .... RAM.

g) The CPU puts the address .... the address bus.

h) The location of required data is typically stored .... the instruction code.

i) Any computer that is capable of performing just the simplest operations can be programmed to break down the more complex operations .... simple steps that it can perform.

j) Frequently needed data is moved .... the cache automatically.

UNIT 4

ELECTRICITY AROUND US

PART 1

1 Lead-in

Step 1

Work with your partner. Write down 10 words which are linked to electricity, e.g. its use, effects, importance etc.

Step 2

Together with your partner prepare a two minute talk about the importance of electricity in our life using the words from Step 1.

2 Read the texts printed in *italics* and inform your partner about new facts that you have learnt from them.

3 Reading

Suggest a subheading for each numbered paragraph.

ELECTRICITY

General characteristic

[1] Electricity is the set of physical phenomena associated with the presence and flow of electric charge. Electricity gives **a wide variety of well-known effects**, such as lightning, static electricity, electromagnetic induction and electrical current. In addition, electricity permits the creation and reception of electromagnetic radiation such as radio waves.

[2] Electrical phenomena have been studied since antiquity, though progress in theoretical understanding remained slow **until the seventeenth and eighteenth centuries**. Even then, practical applications for electricity were few, and it would not be until the late nineteenth century that engineers were able to put it to industrial and residential use. **The rapid expansion in electrical technology at this time** transformed industry and society. Electricity's extraordinary versatility means it can be put to an almost limitless set of applications which include transport, heating, lighting, communications, and computation. Electrical power is now the backbone of modern industrial society.

Ancient records

[3] Long before any knowledge of electricity existed people were aware of **shocks from electric fish**. Ancient Egyptian texts dating from 2750 BC referred to these fish as the "Thunderer of the Nile", and described them as the "protectors" of all other fish. Electric fish were again reported **millennia later** by ancient Greek, Roman and Arabic naturalists and physicians. Patients suffering from ailments such as gout or headache were directed to touch electric fish in the hope that the powerful jolt might cure them.


Gymnarchus niloticus – commonly known as the aba, aba aba, frankfish, freshwater rat-tail, poisson-cheval, or African knifefish – is an electric fish. It is nocturnal and has a poor vision. Instead, it navigates and hunts smaller fish using a weak electric field. It is found exclusively in swamps and near vegetated edges in the Nile, Turkana, Chad, Niger, Volta, Senegal, and Gambia basins.

[4] Ancient cultures around the Mediterranean knew that certain objects, such as rods of amber, could be rubbed with **cat's fur** to attract light objects like feathers. **Thales of Miletus** made a series of observations on static electricity around 600 BC, from which he believed that friction rendered amber magnetic, in contrast to minerals such as magnetite, which needed no rubbing. Thales was incorrect in believing the attraction was due to a magnetic effect, but later science would prove a link between magnetism and electricity. According to a controversial theory, the Parthians may have had knowledge of electroplating, based on the 1936 discovery of the Baghdad Battery, which resembles a galvanic cell, though it is uncertain whether the artifact was electrical in nature
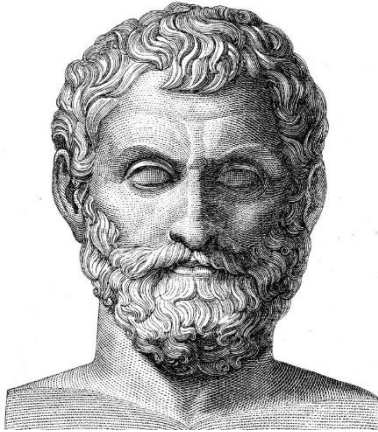
Thales of Miletus (624 – 546 BC) was a Greek philosopher from Miletus in Asia Minor, Thales attempted to explain natural phenomena without reference to mythology and was tremendously influential in this respect. In mathematics, Thales used geometry to solve problems such as calculating the height of pyramids and the distance of ships from the shore.
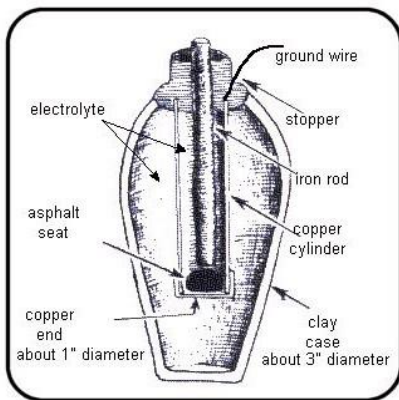
The small earthenware jar has an asphalt seal on the lid, and has an iron rod with a copper cylinder around it. Reproductions of the jar, when filled with any acid such as vinegar, produce about 2 volts of electricity. The jar is thought to have been used to electroplate small items. By electroplating, silver or other jewellery could be plated with gold, or copper plated with silver. One source states that local craftsmen in Iraq still use a primitive method of electroplating to plate jewellery.

[5] Electricity would remain little more than an intellectual curiosity **for millennia until 1600**, when the English scientist William Gilbert made a careful study of electricity and magnetism, distinguishing the lodestone effect from static electricity produced by rubbing amber. He coined the New Latin word *electricus* ("of amber" or "like amber", from ἤλεκτρον [*elektron*], the Greek word for "amber") to refer to the property of attracting small objects after being rubbed. This association gave rise to the English words "**electric" and "electricity**", which made their first appearance in print in Thomas Browne's *Pseudodoxia Epidemica* of 1646.

William Gilbert *(24 May 1544 – 30 November 1603), also known as Gilberd, was an English physician, physicist and natural philosopher. He is credited as one of the originators of the term "electricity". He is regarded by some as the father of electrical engineering or electricity and magnetism.*

4 What questions do you have to ask to obtain the information printed in bold typeface?

[1] ....

[2] ....

[2] ....

[3] ....

[3] ....

[4] ....

[4] ....

[5] ....

[5] ....

5 Quiz. Which option is correct?

gout [3]   a/ a disease which affects the veins feeding the brain. Its characteristic symptom is periodical headache that is often very strong

b/ a painful disease which affects joints. It is caused by an excess of uric acid in the blood

c/ a low level of sugar in the blood which leads to dizziness or even loss of consciousness

artifact [4]   a/ a piece of information related to a work of art

b/ a handmade object e.g. a tool characteristic of an earlier time

c/ a painting or sculpture publically displayed on a street or square

amber [5]   a/ a pale yellow translucent fossil resin used for making jewellery

b/ dark green or dark grey volcanic glass that was used for making jewellery in ancient Rome

c/ a hard ash coloured substance produced by a whale species usually found floating on the ocean or cast ashore

lodestone [5] a/ a hard stone that was used for producing cannonballs in the Middle Ages

b/ a reddish coloured rock that was formed in the cretaceous (a geologic time which ended 65 million years ago when the dinosaurs died out)

c/ a variety of magnetite that possesses magnetic polarity and attracts iron

6 Explain the following terms (they are also underlined in the article).

phenomenon [1]   computation [2]

electrical current [1]   millennium [3]

antiquity [1]   coin (v.) [5]

versatility [2]   property [5]

7 Find synonyms to these words in the text:

allow [1]   shock [3]

household, adj. [2]   cause, v. [4]

fast [2]   be similar to [4]

healer [3]   differentiate [5]

illness [3]   originate [5]

PART 2

1 Scan the text to obtain the following information:

  a) main purpose of a fuse

  b) alternative to a fuse

  c) material used for the fuse element

  d) difference between the fuse and the circuit breaker

  e) American term used for socket

FUSES, PLUGS AND SOCKETS

[1] In electronics and electrical engineering, a fuse (from the French *fuser*, Italian *fuso*, "spindle") is a type of low resistance resistor that acts as a sacrificial device to provide overcurrent protection, of either the load or source circuit. Its essential component is a metal wire or strip that melts when too much current flows through it, interrupting the circuit that it connects. Short circuits, overloading, mismatched loads, or device failure are the prime reasons for excessive current. Fuses are an alternative to circuit breakers.

[2] A fuse consists of a metal strip or wire fuse element, of small cross-section compared to the circuit conductors, mounted between a pair of electrical terminals, and (usually) enclosed by a non-combustible housing.

[3] The fuse element is made of zinc, copper, silver, aluminium, or alloys to provide stable and predictable characteristics. The fuse ideally would carry its rated current indefinitely, and melt quickly on a small excess. The element must not be damaged by minor harmless surges of current, and must not oxidize or change its behaviour after possibly years of service.

A sample of the many markings that can be found on a fuse. Most fuses are marked on the body or end caps with markings that indicate their ratings.

[4] A circuit breaker is an automatically operated electrical switch designed to protect an electrical circuit from damage caused by overload or short circuit. Its basic function is to detect a fault condition and interrupt current flow. Unlike a fuse, which operates once and then must be replaced, a circuit breaker can be reset (either manually or automatically) to resume normal operation. Circuit breakers are made in varying sizes, from small devices that protect an

individual household appliance up to large switchgear designed to protect high voltage circuits feeding an entire city.

A two-pole miniature circuit breaker

[5] AC power plugs and sockets are devices that allow electrically operated equipment to be connected to the primary alternating current (AC) power supply in a building. Electrical plugs and sockets differ in voltage and current rating, shape, size and type of connectors. The types used in each country are set by national standards.

[6] Generally the plug is a movable connector attached to an electrically operated device's mains cable, and the socket is fixed on equipment or a building structure and connected to an energised electrical circuit. The plug has protruding prongs, blades, or pins (referred to as *male*) that fit into matching slots or holes (called *female*) in the sockets. Sockets are designed to prevent exposure of bare energised contacts.

[7] The normal technical term (in both British and International English) for an AC power socket is *socket-outlet*, but in non-technical common use a number of other terms are used. In British English the general term is *socket,* in American English *receptacle* and *outlet* are common. In the pictures you can see different socket and plug types.

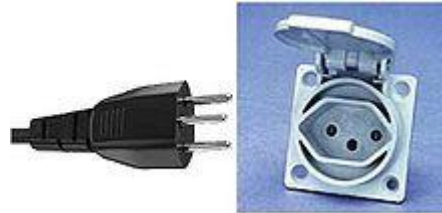

Australian 2005 standard power plug with insulated pins.

10 A Australasian switched 3-pin dual socket

Schuko plug and socket used in Germany

Swiss plug and covered socket

Soviet plug, 6 A 250 V AC

2 Can you explain the meaning of these terms from context?

overcurrent [1]

excess [3]

sacrificial device [1]

surge [3]

 mismatched load [1]

short circuit [4]

circuit [1]

reset [4]

strip [2]

voltage and current rating [5]

non-combustible housing [2]

protruding [6]

cross-section [2]

bare contacts [6]

alloy [3]

LANGUAGE FOCUS 1 – DESCRIPTION OF OBJECTS

When describing an object, we have to answer the following questions:

What does it look like? – colour, shape

What is it made of? – material

What is it used for + -ing/to + information?/What can/could it be used as?

Useful vocabulary:

The …………….. is a/an ………………….. shaped object which is made of …………… .

It is used ………………..

On the right/left/in the centre there is/are a/an/the/0 …………………. .In the top/bottom/right hand/left hand corner we can see …………… The …………… is placed between ……… and ………... .

Unlike Socket 1, socket 2 is/has ……, Socket 2 is/has ………… whereas Socket 3 ………….

Socket 2 is …………… than ……………

3 Write down

10 colours

5 shapes

5 materials

4 Work with your partner. Using the vocabulary from the article and language focus describe these sockets.

Step 1

Take turns and describe the socket types to your partner

Step 2

Take turns and compare a/ Sockets 1 and 2   b/ Sockets 2 and 3   c/ Sockets 1 and 3
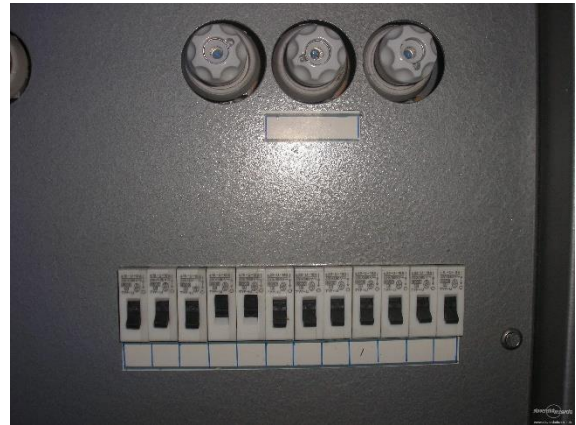

1.   **Brazilian type socket**

2. **French type socket**

3. British type socket

Step 3

Describe this distributor box

1 Home assignment. Describe the electrical wiring in the place where you live and write what devices and appliances are connected to it. Choose one of these - house, block of flats, hostel room. Use the terms used in the unit and those shown in the pictures.

    electricity meter   junction box   electrical cable

PART 3   EXTRA WORK

LANGUAGE FOCUS 2   MODAL VERBS

Verb	Meaning	Example	Negative
can	ability	I can swim	cannot/can't
must	necessity	We must be ready by noon.	need not/don't have to
	certainty	It must be John. (I am sure it is John.)	cannot, can't
	order/strong suggestion	You must slow down.	must not, mustn't
may	possibility *(appr. 50%)*	Mary may be at home	may not
	permission	You may use my phone.	may not / must not (strong refusal, prohibition)
might	weaker possibility *(less than 50%)*	Sheila might be at home too.	might not
should	less strong suggestion	You should call him and apologise.	should not
ought to	the same as should		ought not to

PLEASE REMEMBER

Cannot is the only case where not is written together with the verb. In all other cases not is written separately.

1 Rewrite these sentences using an appropriate modal verb.

1   I'm sure Peter will pass the exam.

2   I know this isn't Susan, as she's in Holland.

3   I allow you to use my bathroom.

4   It's fine if you come to meet me at the station.

5   It's possible that it will rain tomorrow.

6   I don't know how to cook a fish.

7   I strongly recommend you to take a holiday.

8   It is good if you have your hair cut for summer.

9   I recommend you to be at the airport two hours before plane departure.

10 Passengers are strongly prohibited to take any liquid on board.

PLEASE REMEMBER

Modal verbs have no infinitives or participles. Expressions like **to be able to, to be allowed to, to have to** are used instead.

2 Complete the sentences. Choose from the expressions below.

be able to	to be able to	been able to	been allowed to
have to	to have to	had to	

1   I would like …………………… ride a horse. (NOT ~~I'd like to can~~ …)

2   I've never …………………… understand the differential equations. (NOT ~~I've never could~~ …)

3   I'm sorry …………………… inform you about this accident. (NOT ~~I'm sorry to must~~ …)

4   Our dog has always …………………… run around without a leash. (NOT ~~He has always might~~ …)

5   We've …………………… get new wind jackets for Jack and Peter. (NOT ~~We have must~~ …)

6   In twenty years everybody will …………………… go on holiday wherever they like.

7   I'm really sorry, but you will …………………… work next Saturday.

8   I would hate ………………… wash the dishes three times a day.

9   I would have enjoyed the holiday much more if I had …………………… speak English.

PLEASE REMEMBER

Can and could are used to ask for and to give permission.

> E.g. **Can** you repeat the question?

Using **could** is **more polite/formal**.

> E.g. **Could** I have a look at your magazine?

Cannot/can't is used **to refuse permission**.

> E.g. I'm sorry, you **can't** see Peter at the moment.

May is used in the same way as could, but **it is very formal**.

> E.g. **May** I help you with your luggage, madam?

We use **can or could (not may)** for **what is normally allowed**.

> E.g. Can we park in this street also on working days?

3   Rewrite these sentences using can, could or may. Be careful about expressing the required level of formality.

1   I'd like to talk to you for a while, Sue. (friendly)

2   I would like to leave earlier today. (formal)

3   Are young people allowed to buy cigarettes?

4   Take my car if you want to.

5   I would like to speak to Mr. Brown. (polite)

6   I would like to make a photocopy here. (friendly)

7   I don't want you to play the music so loud.

8   Are students entitled to use the computers at the department?

9   I would like to come to the cinema with you. (friendly)

10 I'd like to help you with the bag. (formal)

4 Regular or irregular? Fill in the table below.

infinitive	past tense	past participle
lie		
	lay	
lay		