



INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ

TENTO PROJEKT JE SPOLUFINANCOVÁN EVROPSKÝM SOCIÁLNÍM FONDEM A STÁTNÍM ROZPOČTEM ČESKÉ REPUBLIKY.

Průvodka dokumentem:

- nadpisy tří úrovní (pomocí stylů Nadpis 1-3), před nimi je znak #
- na začátku dokumentu je automatický obsah (#Obsah)
- obrázky vynechány, zůstávají pouze původní popisky vložené mezi znaky @...&
- odkaz na literaturu je uveden textem Literatura, pořadovým číslem, jako hypertextový odkaz na číslo v seznamu literatury, vložen mezi znaky \$...&
- dodatečný komentář editora vložen mezi znaky §...&
- tabulky jsou v textu pouze symetrické, vloženy mezi znaky @...&
- v textu se vyskytuje speciální symbol (¬), jehož význam je „volitelný spojovník“
- vyznačení řezu písma vloženo mezi znaky \$...\$
- poznámky pod čarou jsou umístěny na konci dokumentu
- v příkladech adaptovaných dokumentů nejsou použity styly nadpisů

Vladimír Bradáč

Angličtina studovaného oboru 2

Studijní opora k inovovanému předmětu: Angličtina studovaného oboru 2 (ANGI2)

Ostrava, říjen 2013

ISBN 978-80-7464-408-5

CONTENTS:

# INTRODUCTION	5
# 1 PORTABLE DEVICES	7
# 1.1 How portable systems evolved.....	7
# 1.2 Classification of mobile devices	8
# 1.3 Language work - Comparative and superlative of adjectives	10
# 1.4 Comparing.....	11
# 1.5 Summary.....	12
# 1.6 Vocabulary	13
# 1.7 Key.....	15
# 2 INPUT DEVICES	17
# 2.1 Mouse	17
# 2.2 Other input devices	18
# 2.3 Language work - Passive voice.....	19
# 2.4 Summary.....	22
# 2.5 Vocabulary	22
# 2.6 Key.....	23
# 3 REVISION 1.....	25
# 3.1 Key.....	26
# 4 KEYBOARD	27
# 4.1 Various keyboard arrangements	27
# 4.2 Ergonomic keyboards.....	27
# 4.3 Specialised keyboards	27
# 4.4 Language work - Present Perfect.....	29
# 4.5 Vocabulary	32
# 4.6 Key.....	33
# 5 OUTPUT DEVICES	35
# 5.1 Printers.....	35
# 5.2 Monitors	36
# 5.3 Specialised output device.....	37
# 5.4 Language work – Present perfect continuous	40
# 5.5 Summary.....	42
# 5.6 Vocabulary	43
# 5.7 Key.....	44
# 6 REVISION 2.....	46
# 6.1 Key.....	47
# 7 STORAGE DEVICES	48
# 7.1 Basic storage devices	48
# 7.2 Language work – modal verbs	50
# 7.3 Special constructions substituting modal auxiliary verbs.....	54
# 7.4 Summary.....	56
# 7.5 Vocabulary	56
# 7.6 Key.....	57

# 8	SOURCES AND RECOMMENDED LITERATURE	60
# 8.1	Printed.....	60
# 8.2	Online.....	60

INTRODUCTION

Dear student,

the material that you are about to start reading and studying is the second part of the three-semester course *English for specialisation degree* at the Department of Informatics and Computers, University of Ostrava.

I hope that you remember all the information from Part 1 as you will need it to continue in enlarging and deepening your knowledge of grammar and vocabulary as well as help you be better and more self-confident at using the language in practical/professional life.

This semester, the topics will rather concern the hardware perspective of computing, you will become familiar with various kinds of devices of everyday use, the topics will also cover specialised devices for the disabled as well as how to keep in good physical condition while using ICT.

How to work with this material.

The study material has a fixed structure. Each chapter presents a topic which is the base for studying the grammar of the chapter. The grammar part follows the texts and exercises placed at the beginning of the chapter. The final part of each chapter includes vocabulary of the unit and key to the exercises.

There are also two Assignments which you are supposed to work out. The assignments can help you improve in your writing as well as pass the course successfully because they can bring you points for the final evaluation.

The part called Appendix includes texts, exercises or other activities that are not compulsory. They can give you additional feedback, information or practice. I would definitely recommend you to go through them.

I wish you enjoyably spent hours studying this material.

author

After you finish this course, you should know:

- Present perfect simple and continuous tenses
- Comparatives and superlatives of adjectives
- Passive voice
- Modal verbs
- Types of portable computers
- Various kinds of input, output devices and storage media

You will acquire skills of:

- better reading
- finding specific information in a text

- writing a short paper about you and using ICT
- writing a technical paper
- speaking about topics related to hardware

1 PORTABLE DEVICES

\$Time: 3 hours\$

\$Study guide\$

The introductory lesson deals with a very popular topic – portable (mobile) devices. The unit gives an overview of various portable systems that are available as well as their evolution. The grammar part concerns comparing those devices – knowledge of adjective is necessary.

At the end of this chapter, the students should:

- be able to describe the difference between devices designed to be stationary and portable;
- distinguish various kinds of portable devices and their purpose
- be able to make comparisons using adjectives.

\$Keywords:\$ portable system, desktop, laptop, notebook, palmtop, PDA, netbook, ultrabook, tablet, smart phone.

1.1 How portable systems evolved

The following lines mention only some events of the “long” history of portable devices.

\$1981: The Osborne 1\$

The first commercially successful portable personal computer weighed 23.5 pounds, and when closed it looked like a lopsided, hard-body suitcase. Running the then-popular CP/M operating system, the Osborne 1 sported a tiny, 5-inch monochrome screen that couldn't even display a full line of text in the bundled WordStar word processor.

\$1982: The Compaq Portable\$

This model wasn't the first "luggable" to improve on the Osborne by enlarging the screen, but it was the first that was MS-DOS-based and IBM PC-compatible.

The Compaq Portable played a key role in making the PC a cross-manufacturer standard rather than a Big Blue monopoly

\$1983: The Epson HX-20\$

Possibly the first battery-operated portable computer sold to the general public, the HX-20 sported a frustratingly tiny 120-by-32-pixel LCD screen. It fit in a briefcase and ran without AC power, though--and at 3.5 pounds, it weighed less than many modern laptops do.

\$1989: The Poqet PC\$

Eighteen years before someone coined the word *netbook*, Poqet was selling a small, light, yet practical PC running MS-DOS, the standard OS of the day. Weighing only 1.5 pounds, it ran on AA batteries, and allegedly could go weeks without needing them replaced.

\$1991: The Apple PowerBook 100\$

Although not the first Mac laptop, the 100 was the first to carry the PowerBook name.

At a time when most laptops offered no built-in pointer, the PowerBook100 was the first model to place a trackball below the spacebar, where most modern laptops put their touchpads.

\$1995: The IBM ThinkPad 701\$

By the mid-1990s, laptops were shrinking into "notebooks," with smaller keyboards and thus more typos.

So IBM created the butterfly keyboard, which expanded to full size as you opened it. The notebook trend was short-lived, and the butterfly disappeared.

\$1999: The Apple iBook 3G\$

The first laptop to integrate Wi-Fi (and to put the antenna behind the screen), the G3 introduced convenient wireless.

We're all glad of that. Whether to be glad that the rounded, cheerful design didn't become ubiquitous is a matter of debate.

\$2007: The Asus Eee PC 4G\$

Asus launched the netbook category with this diminutive, inexpensive, Linux-based PC.

Before the Eee Pc 4G, the smaller the laptop, the more you had to pay for it. But Asus built this 2-pound computer and sold it for only \$400, changing everything.

\$2010: The Apple iPad\$

Well, no, it isn't really a laptop. But by creating the iPad, a lightweight, versatile tablet, Apple has changed the formula.

How much of what we now use laptops for will soon be done on something smaller and lighter, but still more legible than a smartphone?

Source: http://www.pcworld.com/article/197457/History_of_Portable_Computing.html

1.2 Classification of mobile devices

\$Smartphone and PDA\$

A smartphone is a device that lets you make telephone calls, but also adds in features that, in the past, you would have found only on a personal digital assistant or a computer--such as the ability to send and receive e-mail and edit Office documents, for example.

But, to really understand what a smartphone is (and is not), we should start with a history lesson. In the beginning, there were cell phones and personal

digital assistants (or PDAs). Cell phones were used for making calls--and not much else--while PDAs, were used as personal, portable organizers. A PDA could store your contact info and a to-do list, and could sync with your computer.

Eventually, PDAs gained wireless connectivity and were able to send and receive e-mail. Cell phones, meanwhile, gained messaging capabilities, too. PDAs then added cellular phone features, while cell phones added more PDA-like (and even computer-like) features. The result was the smartphone.

\$Desktop replacement\$

A desktop-replacement computer is a laptop that provides all of the capabilities of a desktop replacement, with a similar level of performance. Desktop replacements are usually larger and heavier than standard laptops. They contain more powerful components and have a 15" or larger display. They are bulkier and not as portable as other laptops, and their operation time on batteries is typically shorter.

\$Subnotebook\$

A subnotebook or ultraportable is a laptop designed and marketed with an emphasis on portability (small size, low weight and often longer battery life) that retains performance close to that of a standard notebook. Subnotebooks are usually smaller and lighter than standard laptops, weighing between 0.8 and 2 kg (2 to 5 pounds); the battery life can exceed 10 hours when a large battery or an additional battery pack is installed. Since the introduction of netbooks, the line between subnotebooks and higher-end netbooks has been substantially blurred.

At Computex 2011 Intel announced a new class for ultraportables called Ultrabooks.

\$Netbook\$

Netbooks are laptops that are light-weight, economical, energy-efficient and especially suited for wireless communication and Internet access. Hence the name *netbook* (as "the device excels in web-based computing performance"). With primary focus given to web browsing and emailing, netbooks are intended to "rely heavily on the Internet for remote access to web-based applications" and are targeted increasingly at cloud computing users who rely on servers and require a less powerful client computers. A common distinguishing feature is the lack of optical disk (i.e. CD, DVD or Blu-ray) drives. The big breakthrough for netbook computers did not happen until the weight, diagonal form-factor and price combination of < 1 kg, < 9", < U.S. \$400, respectively, became commercially available in around 2008.

\$Rugged laptop\$

A rugged (or ruggedized) laptop is designed to reliably operate in harsh usage conditions such as strong vibrations, extreme temperatures, and wet or dusty environments. Rugged laptops are usually designed from scratch, rather than adapted from regular consumer laptop models. Rugged laptops are bulkier,

heavier, and much more expensive than regular laptops, and thus are seldom seen in regular consumer use.

\$Tablet laptop\$

Typical modern convertible laptops have a complex joint between the keyboard housing and the display permitting the display panel to swivel and then lie flat on the keyboard housing.

Typically, the base of a tablet laptop attaches to the display at a single joint called a swivel hinge or rotating hinge. The joint allows the screen to rotate through 180° and fold down on top of the keyboard to provide a flat writing surface. This design, although the most common, creates a physical point of weakness on the laptop.

Adapted from: www.wikipedia.org

***Task 1**

Answer the following questions about the previous text true or false:

- 1) Ultrabooks appeared in 2010 for the first time.
- 2) Tablet laptop includes a joint that enables the screen to be folded on the keyboard part.
- 3) Smartphones have nothing to do with PDAs.
- 4) A 13" laptop can also be called a netbook.

1.3 Language work - Comparative and superlative of adjectives

@

Positive	Comparative	Superlative
small	smaller	the smallest
hot	hotter	the hottest
hard	harder	the hardest
large	larger	the largest
funny	funnier	the funniest
dry	drier	the driest
careful	more careful	the most careful
interesting	more interesting	the most interesting
good	better	the best
bad	worse	the worst
far	further	the furthest

&

\$Note:\$

- a) there are 3 types of adjectives: 1-syllable (or ending in -y), 2- and more syllable, irregular adjectives
- b) 1-syllable adjectives sometimes double the final consonant: hotter
- c) comparative is formed: "ER" to 1-syllable adjectives or ending in "-y"
OR adding "MORE" to more-syllable adjectives
- d) superlative is formed: "THE ...EST" to 1-syllable adjectives or ending in "-y" OR adding "THE MOST" to more-syllable adjectives
- e) the opposite of more and the most is less and the least:
My girlfriend is more beautiful than yours.
Your girlfriend is less beautiful than mine.

***Task 2**

Note: The exercise has been adapted.

Complete the adjectives with their other two forms.

Great

Stupid

The ugliest

More interesting

Colder

Talented

The kindest

The most efficient

More foolish

The sunniest

Patient

Fine

1.4 Comparing**\$As good as\$**

This expression is used with adjectives in *\$positive\$*; it says that the things equal, they are the same:

My city is **\$as large as\$** yours.

Prague isn't **\$as populated as\$** Paris. Or Prague isn't **\$so populated as\$** Paris.

\$Better than\$

This expression is used with adjectives in *\$comparative\$*; it compares two things or people:

Living in a village is **\$healthier than\$** living in a city.

Melbourne is **\$more relaxed than\$** Sydney.

If you want to make it more intensive, you can use *\$much\$* in front of the adjective:

Living in a village is **\$much healthier than\$** living in a city.

Melbourne is **\$much more relaxed than\$** Sydney.

!!! But be careful!!!:

\$much more healthier than\$ is wrong!

\$The best of\$

This expression is used with adjectives in *\$superlative\$*; it says that something or somebody is unique in some way:

She was **\$the fastest of\$** all the runners.

He's **\$the best in\$** the world.

It's **\$the best\$** known book all over the world.

***Task 3**

Complete the conversations. Use the comparative or superlative of the adjectives in brackets.

1 A: I want to buy that watch. B: But It's ... watch in the shop.
(expensive)

2 A: Who's winning the race? B: He's ... Brian. (fast)

3 A: I'm buying a T-shirt for my brother. Do you like that blue one? B
Yes. it's ... the red one over there. (nice)

4 A: That building is very old. B: Yes, it's ... building in our town. (old)

5 A: My bag's really heavy! B: Mine's ... yours, (heavy).

6 A: Excuse me - is there a bank near here? B: Yes - ... bank is in
Baker Street, next to the post office. (near)

7 A: Is that a good book? B: Yes, it's very good. It's ... this one.
(interesting)

8 A: Are you busy? B: Yes! Monday's always ... day of the week.
(busy)

9 A: Is Zoe ... her sister? (young) B: No. Zoe's 25 and Alice is 17.

10 A: What's ... sport in your country? (popular) B: Football.

***Task 4**

Read the following text and find examples of comparative and superlative forms of adjectives

\$Thin, light, and innovative beyond measure\$

It may be incredibly thin and light, but the all-new MacBook Pro is also incredibly powerful. To achieve all that in a single design required relentless focus and a willingness to make bold decisions. Every millimeter was designed, engineered, built, and assembled to the most exacting performance standards. Bulky legacy technologies like the spinning hard drive and optical disc drive were left behind in favor of newer, higher-performance technologies — all-flash storage, for example. It's much faster and far more reliable than a traditional hard drive. And it takes up 90 percent less space. Which is one of many reasons this MacBook Pro isn't just extremely capable, it's extremely portable, too.

Source: <http://www.apple.com/macbook-pro/design/>

1.5 Summary

\$One-syllable adjectives\$

- We add *-er* to the end of the adjective.

\$Two-syllable adjectives ending in -y\$

- Change the *-y* to *-i* and add *-er* to the end of the adjective.

\$Other adjectives with two or more syllables\$

- Put *more* before the adjective.

\$Irregular comparison\$

good	better	the best
bad	worse	the worst
far	farther/further	the farthest/furthest

One-syllable adjectives ending with one vowel and a consonant double the consonant: *hot - hotter - the hottest*. This doesn't happen when the consonant is *-w* or *-y*: *few - fewer - the fewest*.

We use *as + adjective + as + noun* to say that two people or things are equal in some way.

1.6 Vocabulary

@

accommodate	obsahovat
add-on	přídavný
adjective	přídavné jméno
achieve	dosáhnout
allow	dovolit
alloy	slitina
amazing	úžasný
blur	rozmazat
both	obojí
boundary	hranice
breakthrough	průlom
bubble	bublina
bulky	objemný
capability	schopnost
cell phone	mobilní telefon
column	sloupec
comparison	srovnání
complex	složitý
consonant	souhláska
demarcation	vymezení
describe	popsat
design	vy(projektovat)
device	zařízení
diagonal	úhlopříčný
distinguish	rozlišovat
dusty	prašný
employ	používat

feat	výkon, skutek
feature	rys, prvek
fewer	méně
foolish	bláhový
frame	rám
fur	kožešina
harsh	drsný, krutý
hinge	závěs, pant
hurt	zranit
illustrate	vyobrazit
incredibly	neuvěřitelně
joint	kloub
launch	vyпустit, spustit
layout	rozložení
legacy	dědictví (postarší)
lie	ležet
measurement	měření, míra
non-volatile	stabilní
obsolete	zastaralý
outsell	překonat v prodeji
packing	zahrnující
pain	bolest
perhaps	snad
peripheral	okrajový
permit	povolit
portable	přenosný
provide	poskytnout
range	škála, rozsah
regular	běžný
relentless	vytrvalý
rely on	spolehnout se na
rubber	guma
rugged	tvrdý, silný
scratch	škrábanec
seal	pečeť, těsnění
seldom	zřídka kdy
sheeting	obal
slate	tabulka (břidlice)
spin	točit se
stationary	stacionární, nehybný
substantially	podstatně
suitcase	kufř
swivel	otáčet se
syllable	slabika

thin	tenký
thus	tedy
tough	drsný
threshold	práh
until	dokud ne
weakness	slabina
wet	mokrý, vlhký
willingness	ochota
withstand	ustát, přestát
&	

1.7 Key

*Task 1

- 1) Ultrabooks appeared in 2010 for the first time. False
- 2) Tablet laptop includes a joint that enables the screen to be folded on the keyboard part. True
- 3) Smartphones have nothing to do with PDAs. False
- 4) A 13" laptop can also be called a netbook. False

Task 2

@

great	greater	the greatest
stupid	more stupid	the most stupid
ugly	uglier	the ugliest
interesting	more interesting	the most interesting
cold	colder	the coldest
talented	more talented	the most talented
kind	kinder	the kindest
efficient	more efficient	the most efficient
foolish	more foolish	the most foolish
sunny	sunnier	the sunniest
patient	more patient	the most patient
fine	funnier	the funniest

&

*Task 3

- 1 the most expensive
- 2 faster than
- 3 nicer than
- 4 the oldest
- 5 heavier than
- 6 the nearest
- 7 more interesting than
- 8 the busiest
- 9 younger than

10 the most popular

*Task 4

\$Thin, light, and innovative beyond measure\$

It may be incredibly thin and light, but the all-new MacBook Pro is also incredibly powerful. To achieve all that in a single design required relentless focus and a willingness to make bold decisions. Every millimeter was designed, engineered, built, and assembled to **\$the most exacting\$** performance standards. Bulky legacy technologies like the spinning hard drive and optical disc drive were left behind in favor of **\$newer\$, \$higher\$**-performance technologies — all-flash storage, for example. It's much **\$faster\$** and **\$far more reliable\$** than a traditional hard drive. And it takes up 90 percent less space. Which is one of many reasons this MacBook Pro isn't just extremely capable, it's extremely portable, too.

2 INPUT DEVICES

\$Time: 4 hours\$

\$Study guide\$

The second chapter introduces devices that are used to insert information to a PC or to control it. The grammar part focuses on passive voice, which is frequently used in technical texts.

At the end of this chapter, the students should:

- be familiar with various input devices and their function;
- know how to form passive voice and use it appropriately

\$Keywords:\$ joystick, keyboard, lightpen, microphone, scanner, touchscreen, touchpad, trackball.

Passive voice

Task 1

What do you suppose to be the most useful input device for you? Give the reasons.

2.1 Mouse

With the advent of GUI that replaced the text commands, one of the most important input devices became the mouse.

At first, it was the old good ball mouse, which made its users go mad due to frequent need to be cleaned. The new millennium witnessed the rise of a new technology:

“An optical mouse uses camera technology and digital processing to compare and track the position of the mouse, rather than a ball and rollers used on older mice. This technology, first introduced by Agilent technologies in 1999, helps give users more precise performance without the maintenance and cleaning needed on older mice.

Inside each optical mouse is a small camera that takes more than a thousand snapshot pictures every second. A small LED (light-emitting diode) provides light underneath the mouse, helping to highlight slight differences in the surface underneath the mouse. Those differences are reflected back into the camera, where digital processing is used to compare the pictures and determine the speed and direction of movement. This differs from older-technology mice, in which a round ball rolled against a mouse pad to indicate movement.

Optical mice have a number of benefits over older technologies. One of the biggest benefits is that the elimination of the mouse ball, which frequently required cleaning to scrape accumulated grime of the ball or the rollers inside. As there are no moving parts in optical mice, almost no maintenance or regular cleaning is required. Another benefit is that digital processing often results in smoother, more accurate performance than prior technologies.

Optical mice typically don't require a mouse pad and can be used on many surfaces, including those that are not entirely flat."

Source: www.wisegeek.org

***Task 2**

Note: This exercise has been removed

***Task 3**

Note: Images have been replaced by a description.

Identify the following input devices and state why they are beneficial for users with a certain disability.

1 four colour buttons for navigation and two buttons for left and right click

2 four colour buttons for navigation and one button for left click

3 black keyboard with yellow keys and black characters

2.2 Other input devices

Note: Images were only for illustration, therefore they have been removed

\$Joystick\$

Joystick is also a pointing device which is used to move cursor position on a monitor screen. It is a stick having a spherical ball at its both lower and upper ends. The lower spherical ball moves in a socket. The Joystick can be moved in all four directions.

The function of joystick is similar to that of a mouse. It is mainly used in Computer Aided Designing(CAD) and playing computer games.

\$Light Pen\$

Light pen is a pointing device which is similar to a pen. It is used to select a displayed menu item or draw pictures on the monitor screen. It consists of a photocell and an optical system placed in a small tube.

When light pen's tip is moved over the monitor screen and pen button is pressed, its photocell sensing element detects the screen location and sends the corresponding signal to the CPU.

\$Track Ball\$

Track ball is an input device that is mostly used in notebook or laptop computer, instead of a mouse. This is a ball which is half inserted and by moving fingers on ball, pointer can be moved.

Since the whole device is not moved, a track ball requires less space than a mouse. A track ball comes in various shapes like a ball, a button and a square.

\$Scanner\$

Scanner is an input device which works more like a photocopy machine. It is used when some information is available on a paper and it is to be transferred to the hard disc of the computer for further manipulation.

Scanner captures images from the source which are then converted into the digital form that can be stored on the disc. These images can be edited before they are printed.

OCR is software used to read a printed text. OCR scans text optically character by character, converts them into a machine readable code and stores the text on the system memory.

\$Digitizer\$

Digitizer is an input device which converts analog information into a digital form. Digitizer can convert a signal from the television camera into a series of numbers that could be stored in a computer. They can be used by the computer to create a picture of whatever the camera had been pointed at. Digitizer is also known as Tablet or Graphics Tablet because it converts graphics and pictorial data into binary inputs. A graphic tablet as digitizer is used for doing fine works of drawing and images manipulation applications.

\$Microphone\$

Microphone is an input device to input sound that is then stored in digital form. The microphone is used for various applications like adding sound to a multimedia presentation or for mixing music.

\$Magnetic Ink Card Reader(MICR)\$

MICR input device is generally used in banks because of a large number of cheques to be processed every day. The bank's code number and cheque number are printed on the cheques with a special type of ink that contains particles of magnetic material that are machine readable. This reading process is called Magnetic Ink Character Recognition(MICR). The main advantages of MICR is that it is fast and less error prone.

\$Bar Code Readers\$

Bar Code Reader is a device used for reading bar coded data (data in form of light and dark lines). Bar coded data is generally used in labelling goods, numbering the books etc. It may be a hand held scanner or may be embedded in a stationary scanner.

\$Optical Mark Reader(OMR)\$

OMR is a special type of optical scanner used to recognize the type of mark made by pen or pencil. It is used where one out of a few alternatives is to be selected and marked. It is specially used for checking the answer sheets of examinations having multiple choice questions.

Source:

http://www.tutorialspoint.com/computer_fundamentals/computer_input_devices.htm

2.3 Language work - Passive voice

It is highly important to understand the difference between the passive and active voice. Not only for the purposes of their correct form, but rather of their correct usage when needed.

Active voice is used for most non-scientific writing. Using active voice makes the meaning clear and keeps the sentences from being too complicated. However, even in scientific writing excessive usage of passive voice can cloud the meaning of the sentences.

Forming the passive voice: **\$Be+past participle\$**

@

	Active Voice	Passive Voice
Present Simple	He delivers letters.	Letters are delivered .
Past Simple	He delivered the letters.	The letters were delivered .
Present Perfect	He has delivered the letters.	The letters have been delivered .
Future Simple	He will deliver the letters.	The letters will be delivered .
Past Perfect	He had delivered the letters.	The letters had been delivered .
Present Continuous	He is delivering the letters.	The letters are being delivered .
Past Continuous	He was delivering the letters.	The letters were being delivered .
Modals	He has to deliver the letters.	The letters have to be delivered .
(Modal + be + past part.)	He must deliver the letters.	The letters must be delivered .

&

\$Usage:\$

1 when the agent (= the person who does the action) is unknown, unimportant or obvious from the context.

Jane was shot. (We don't know who shot her.)

This church was built in 1815. (unimportant agent)

He has been arrested. (obviously by the police)

2 to make more polite or formal statements.

The car hasn't been cleaned. (more polite)

You haven't cleaned the car. (less polite)

3 when the action is more important than the agent, as in processes, instructions, events, reports, headlines, news items, and advertisements.

30 people were killed in the earthquake.

\$Example:\$

The technology \$was introduced\$ in 2005 (by Intel).

Research \$will be presented by\$ Mr.Hopkinson.

Each time when deciding which voice to use, it is necessary to know what to highlight and mention. Passive voice makes sense when the agent performing the action is known, obvious, unimportant, unknown, or avoiding it is deliberate. Passive voice is effective in such circumstances because it highlights the action rather than the agent performing it.

Rules \$are made\$ to be broken.

It \$will be done\$ soon.

My car \$has been stolen\$.

***Task 4**

Put the following sentences into the passive voice with a personal subject:

1. They gave **\$my little sister\$** a ticket, too.
2. People will show **\$the visitors\$** the new buildings.
3. Someone has already paid **\$the electrician\$** for his work.
4. They promise **\$us\$** higher wages.
5. Somebody will tell **\$you\$** what time the train leaves.
6. Someone ordered **\$the prisoners\$** to stand up.
7. Somebody recommended **\$me\$** another doctor.
8. Someone taught **\$him\$** French and gave him a dictionary.
9. They will allow **\$each boy\$** a second plate of ice-cream.
10. The authorities refused **\$my boy-friend Cyril\$** a passport.
11. They will ask **\$us all\$** several questions.

***Task 5**

Change the sentences from active to passive.

- 1 A large number of people speak English.
- 2 New ways of communication fascinate many people.
- 3 Computers solve many problems.
- 4 We investigate given problems in complexity theory.
- 5 Researchers use Finite automata in circuit design.

***Task 6**

Turn the following sentences into the passive voice. Omit the agent, if possible:

1. They educated him in Europe.
2. They finished the work in time.
3. They will bring some water from the well.
4. People will forget the matter in a few months.
5. People speak English in almost every country today.
6. They published the book in June.
7. We will discuss this matter at our next meeting.
8. They are testing him now.
9. They are building a new subway in that town.
10. He is putting some chairs in that room now, isn't he?

***Task 7**

Complete these sentences with one of the following verbs in the correct form:

Verbs to use: arrest, wake, knock, check, translate, find, drive, make, spend, , carry

\$Example:\$ The music at the party was very loud and could be heard from far away.

1. A decision will not ...until the next meeting.
2. That building is dangerous, it ought to ... down before it falls down.
3. When you go through Customs, your luggage may ... by a customs officer.

4. I told the hotel receptionist that I wanted to ... up at 6.30.
5. Her new book will probably ... into a number of foreign languages.
6. If you kicked a policeman, you'd
7. Police are looking for the missing boy. He can't ... anywhere.
8. Do you think that less money should ... on arms?
9. The injured man couldn't walk and had to...
10. I don't mind driving but I prefer to ... by other people.

2.4 Summary

\$Present simple passive\$

To be + past participle (solved, done)

\$Positive\$

- The problem is solved.
- Computers are sold.

\$Negative\$

- The visit is not required.
- It isn't made in Poland.

\$Question\$

- Are distributed systems built using networked computers?
- Is trackball used to input sound?

\$Short answer\$

- Yes, they are. No, it isn't.
- To make the present simple passive use am/is/are + past participle (used, made)
- Use the present simple passive when the person or thing that did the action isn't important, or when we don't know who did the action.
- When we want to say who did the action (agent), we use the word by.

2.5 Vocabulary

@

background	pozadí
barcode	čárkový kód
benefit	přínos
circumstances	okolnosti
complaint	stížnost
complexity	složitost
deliberate	záměrný
determine	určit
drawing	nákres
due to	vzhledem k
elimination	odstranění
emphasis	důraz
entirely	zcela
establish	ustavit, založit
excessive	nadměrný

highlight	zvýraznit, poukázat na
include	zahrnout
injure	zranit
inside	uvnitř
knock	zaklepat
mention	zmínit se
millennium	tisíciletí
movement	pohyb
pad	podložka
passive voice	trpný rod
pattern	vzor, vzorec
polite	zdvořilý
probably	pravděpodobně
promote	prosazovat, dělat reklamu
pronoun	zájmeno
purpose	účel
recognition	rozpoznání
relate to	vztahovat se na/k
rise	vzestup
roller	váleček
rule	pravidlo
scrape	oškrabat, sedřít
surface	povrch
underneath	pod, vespod
witness	být svědkem, svědčit
&	

2.6 Key

*Task 1

Subject of a class discussion

*Task 2

Exercise has been removed

*Task 3

Subject of a class discussion

*Task 4

1. She was given a ticket, too.
2. They will be shown the new buildings.
3. He has already been paid for his work.
4. We are promised higher wages.
5. You will be told what time the train leaves.
6. They were ordered to stand up.
7. I was recommend another doctor.
8. He was taught French and given a dictionary.

9. They will be allowed a second plate of ice-cream.
10. He was refused a passport.
11. We will be asked several questions.

*Task 5

- 1 English is spoken by a large number of people.
- 2 Many people are fascinated by new ways of communication.
- 3 Many problems are solved by computers.
- 4 Given problems are investigated in complexity theory.
- 5 Finite automata are used in circuit design.

*Task 6

1. He is educated in Europe.
2. The work was finished in time.
3. Some water will be brought from the well.
4. The matter will be forgotten in a few months.
5. English is spoken in almost every country today.
6. The book was published in June.
7. This matter will be discussed at our next meeting.
8. He is being tested now.
9. A new subway is being built in that town.
10. Some chairs are being put in that room now, aren't they?

*Task 7

1. A decision will not be made until the next meeting.
2. That building is dangerous, it ought to be knocked down before it falls down.
3. When you go through Customs, your luggage may be checked by a customs officer.
4. I told the hotel receptionist that I wanted to be woken up at 6.30.
5. Her new book will probably be translated into a number of foreign languages.
6. If you kicked a policeman, you'd be arrested.
7. Police are looking for the missing boy. He can't be found anywhere.
8. Do you think that less money should be spent on arms?
9. The injured man couldn't walk and had to be carried.
10. I don't mind driving but I prefer to be driven by other people.

3 REVISION 1

\$Time: 1 hour\$

\$Study guide\$

This revision unit summarises what you know about the comparatives and superlatives of adjectives and the passive voice.

*Task 1

Read the following article and fill in the gaps with correct forms of adjectives or correct form of verbs in active or passive voice

\$Ban it? Google Glass actually made me a safer driver, says app developer\$

The use of Google Glass specs could make driving 1... (safe) than when using traditional in-car devices, according to one developer creating apps for the future-thinking device.

This week, the UK government's Department for Transport 2... (suggest) the device will suffer the same fate as mobile phones and be banned from the use while driving, with offenders incurring up to £90 in fines.

While the DfT said Google Glass could be a distraction for drivers, the maker of the TeslaGlass app, said using his Google Glass Explorer Edition behind the wheel has helped his focus.

No distractions

He said: "Cellphones are extremely distracting in a vehicle. But I've been using Glass for about three months now and my experience so far 3... (be) that I've completely stopped touching my phone ... Glass has eliminated that necessity for me."

Katta added that, while performing complex tasks like browsing the web could certainly be distracting for road users, Glass has proved to 4... (be) a 5... (safe) solution for navigation compared with traditional sat navs.

He said: "With navigation, it's 6... (good) technology I've used to date – there's no in-car, mounted or smartphone navigation system that can beat the experience of having Glass so far.

"With a dashboard navigation, at night it's glowing and is very distracting, and through the day it's reflective and sometimes you can't see it. With Glass on the other hand, your entire dash is completely clear, there's nothing on the windshield.

"With Glass, as you approach a turn it makes a little sound and tells you there's a turn coming up, and then once you're closer, it turns on for a second time to remind you that it's time to turn. It 7... (remove) any constant distraction so you're not seeing anything on the screen."

'OK Glass: Save my life'

The developer, whose app gives drivers limited control over Tesla electric cars, says Glass has already made him a 8... (safe) driver, but suggested future innovations could even save lives.

He said eye sensors rumoured to be present within the device could alert drivers if detects their eyes 9... (close) for too long. It's interesting stuff, but will the tech ever 10... (give) the opportunity to flourish?

3.1 Key

- 1 safer
- 2 suggested
- 3 is
- 4 be
- 5 safer
- 6 best
- 7 removes
- 8 safer
- 9 are closed
- 10 be given

4 KEYBOARD

\$Time: 4 hours\$

\$Study guide\$

The third chapter deals only with one input device – a keyboard, which is one of the most important input devices. The grammar part introduces one of the most complicated issue – the Present perfect tense.

At the end of this chapter, the students should:

- be able to distinguish various kinds of keyboards
- know how to form and use Present Perfect tenses

\$Keywords:\$ keyboard, ergonomic keyboard, QWERTY keyboard, typing area, function keys
Present perfect

4.1 Various keyboard arrangements

*Task 1

Note: The exercise has been adapted. The images have been replaced by text.

What is the difference between the following keyboard arrangements:
QWERTY – QWERTZ – AZERTY - DVORAK

*Task 2

Note: The exercise has been removed because it was based on the images removed in Task 1

4.2 Ergonomic keyboards

This trend is to change the shape of the keyboard instead of altering the character layout. This has resulted in a number of different so-called ergonomic designs. The goal is to shape the keyboard to better fit the human hand. The most common of these designs split the keyboard in the centre, bending the sides back. Some allow the angle between the sides to be adjusted, while others are fixed. These split or bent designs more easily conform to the natural angle of the hands while typing. They can improve productivity and typing speed, as well as help prevent medical problems such as Carpal Tunnel Syndrome.

Although these ergonomic keyboards sound like a good idea, people are resistant to change, and none of these designs have replaced the standard keyboard layout.

4.3 Specialised keyboards

Note: Images have been removed. They were only for illustrative purposes.

\$Easy typing and quick access to ZoomText\$

Designed for anyone who struggles to see the lettering on their keyboard, the new ZoomText keyboard makes typing faster and easier than ever before. Each key and button label is easy to see, even in low light, thanks to its 36-point text and choice of high-contrast color schemes: “Black on Yellow” or “White on Black”.

The ZoomText keyboard also provides quick access to ZoomText (9.04 and later) features. Eighteen dedicated buttons allow you to instantly start ZoomText, change magnification levels, toggle screen enhancements, launch AppReader and DocReader, and more, all without having to memorize hotkeys. You can even reassign each feature key to your choice of ZoomText commands, Internet and multimedia commands, or to open an application, document or web page.

\$MAGic® Large Print Keyboard for Low Vision Use with MAGic or JAWS\$

The MAGic Large Print Keyboard provides low vision users with an easy-to-read keyboard with 22 dedicated MAGic keys that make learning and using MAGic screen magnification software easier than ever.

\$Easy to See\$

Bold high contrast keys with oversized characters provide fast, accurate typing with less of the eye fatigue experienced when straining to locate keys on standard keyboards.

\$One Touch Access to MAGic Features\$

The most-used functions of MAGic screen magnification software are preassigned to single keys to provide quick access to these features. Press a single key to launch MAGic. Quickly zoom out to 1x to check your formatting and then return to your working magnification level. Toggle on and off visual enhancements for mouse, cursor, and focus tracking. Adjust reading speed on the fly. Control all these features and more with the 22 specialized keys, making the MAGic keyboard a true independent living aid

\$IntelliKeys Keyboard\$

IntelliKeys is an intelligent, alternative keyboard that plugs into any Macintosh or Windows computer. It’s an ideal solution for individuals who have difficulty using a standard keyboard.

Keys require very little effort and they provide a larger target area. Optionally, you can change the size of the keys to a very large target and you can add a keyguard which helps individuals who might accidentally depress keys.

IntelliTools® has created a keyboard that’s flexible enough to meet a wide variety of needs. Unlike the keyboard on your computer, you can change the way IntelliKeys looks and functions by sliding in different overlays. To get you

started, IntelliKeys comes with six standard overlays that are ready to use with any word processing program or software that has keyboard input.

\$Dragon Dictate/NaturallySpeaking Wake up Keyboard\$

What every NaturallySpeaking user has asked for!

No more "Wake up" or "Go to Sleep" failures!

No more waiting for an attendant to arrive home to get your system awake!

No more nuisance unsolicited wake up's while the system is sleeping!

Almost every NaturallySpeaking hands free user has been stuck with the system not responding to the "Wake up" or the system waking up inadvertently. The Wake Up Keyboard is perfect for quadriplegics who need hands free control of their computer.

The keyboard has two industry standard 1/8" jacks which accepts all switches designed for quadriplegics (button switches, sip-puff, toggle, eye-wink, etc.).

One jack controls the "microphone off/on" function and the other controls the "Oops" function in NaturallySpeaking. Simply select a switch of your choice and plug it into the Wake Up Keyboard and you will become independent of "wake up" and "go to sleep" problems. After you install the keyboard and your switch (no additional software required), just depress the switch to toggle your microphone off and on! No more hassles with wake up and go to sleep.

Source: <http://www.nanopac.com/Special%20Keyboards.htm>

4.4 Language work - Present Perfect

Before we start talking about Present Perfect, let's revise a bit other tenses that you know.

Task 2

What auxiliary verbs do you need to form:

Present Simple: ...

Present Continuous: ...

Past Simple: ...

In the following table about present simple, you can see that the auxiliary verb is the verb **\$TO HAVE\$**

\$Positive:\$

I have worked in the garden.

You have worked in the garden.

He/she/it has worked in the garden.

We have worked in the garden.

You have worked in the garden.

They have worked in the garden.

\$Negative:\$

I have not worked in the garden. I haven't worked in the garden.

You have not worked in the garden. You haven't worked in the garden.
He/she/it has not worked in the garden. He/she/it hasn't worked in the garden.

We have not worked in the garden. We haven't worked in the garden.
You have not worked in the garden. You haven't worked in the garden.
They have not worked in the garden. They haven't worked in the garden.

\$Question and short answer:\$

Have I worked in the garden? Yes, I have. No, I haven't.

Have you worked in the garden? Yes, you have. No, you haven't.

Has he/she/it worked in the garden? Yes, he/she/it has. No, he/she/it hasn't.

Have we worked in the garden? Yes, we have. No, we haven't.

Have you worked in the garden? Yes, you have. No, you haven't.

Have they worked in the garden? Yes, they have. No, they haven't.

\$Note:\$

- 1) The verb "*have*" is only an auxiliary verb; it does not have any meaning of possession.
- 2) Present Perfect needs past participle (often called as the 3rd form of irregular verbs) of full verb.
- 3) In informal language, contracted forms are much more usual:
I've just done it.
She's been very patient.

\$Use:\$

a) to express an action which happened in the past without time specification:

I have won a students' competition.

An unknown driver has killed 6 six people.

b) to express an experience in one's life:

My boss has gone through a lot of jobs.

How many countries has she travelled?

c) to express an action which started in the past and continues to present usually with certain words, such as *since*, *for*):

They've lived here for a long time.

I'm much happier since I got married.

d) to express an action which happened in the past and has certain impact on the present.

David has broken his leg. (He has a plaster on his leg)

I've lost my wallet. (I do not have it now and I cannot pay)

When using Present Perfect, do not forget its name - PRESENT PERFECT – it expresses a kind of transition between the past and the present.

A lot of sentences that are in the present tense in Czech are expressed in the Present Perfect in English. Or sentences in the past tense in Czech are in the Present Perfect in English again. Compare:

Žiji tu už 5 let. - I have lived here for 5 years.
Byl jsem tam. - I have been there.

*Task 3

Note: the exercise has been modified

Use the following verbs in all their three forms:

Speak

Fall

Show

Say

Give

Fight

Spend

Drive

Pay

Have

Buy

Be

Put

Hit

Do

*Task 4

Are the underlined parts of these sentences right or wrong?

- 1 In 1969 Intel \$has introduced\$ a 1 K-bit memory chip.
- 2 \$I've bought\$ a new digital camera. Do you want to see it?
- 3 Albert Einstein \$has been\$ the scientist who \$has developed\$ the theory of relativity.
- 4 Where \$have you been\$ born?
- 5 \$I've lost\$ my key. I can't find it anywhere.

*Task 5

In the following, supply the past tense or the present perfect tense (whichever is correct) of the verb:

1. I ... (visit) Chicago many times.
2. The Smiths ... (go) to Chicago last week.
3. I ... (read) that book several times.
4. I first ... (read) it while I was on my vacation.
5. John ... (fall) as he was crossing the street.
6. I ... (see) Mary a few days ago.
7. When the bell rang, John ... (jump) from his seat and ... (run) from the room.
8. I ... (complete) writing my exercise.
9. He ... (start) to study English last winter.

10. I hear that you ... (give) up the idea of studying Russian.

***Task 6**

Translate into English

1. Pan Smith se právě vrátil z Mexika.
2. Tuto knihu jsem četl už několikrát. Poprvé jsem ji četl vloni o prázdninách.
3. Koupili jsme si auto před dvěma roky a od té doby jsme najeli 80 000 km.
4. Odjeli pracovat do Jižní Ameriky, že ano?
5. Vlak už odjel.
6. Odjel už vlak?
7. Helena teď píše dopisy. Od rána jich už napsala pět.
8. Používala někdy čtečku čárkových kódů?

***Task 7**

The alphanumeric keypad occupies the largest part of the PC keyboard. In addition to alphabetic and numeric characters it includes some punctuation marks and linguistic characters.

\$Do you know them?\$

! # \$ & } { () @ ^ _ - ~ * / \ ; ,

4.5 Vocabulary

@

action	děj
add	přidat
adjustability	nastavitelnost
already	už
angle	úhel
appear	objevit se
arm	ručička, rameno (stroje)
arrangement	uspořádání
assign	přidělit
augment	zvýšit
auxiliary verb	pomocné sloveso
bend	ohnout
customisation	přizpůsobení
ergonomic	ergonometrický
excited	naděšený
familiar	známý
frightened	vystrašený
impact on	dopad na
imprint	otisknout
jam	zablokovat se
layout	rozložení
modest	mírný
never	nikdy

possession	vlastnictví
result	výsledek
since	od (doby)
split	rozdělit
type	psát (na klávesnici)
typewriter	psací stroj
(not) yet	už, ještě (ne)
&	

4.6 Key

*Task 1

Subject of a class discussion

*Task 2

Subject of a class discussion

*Task 3

@

speak	spoke	spoken
fall	fell	fallen
show	showed	shown
say	said	said
give	gave	given
fight	fought	fought
spend	spent	spent
drive	drove	driven
pay	paid	paid
have	had	had
buy	bought	bought
be	was/were	been
put	put	put
hit	hit	hit
do	did	done

&

*Task 4

1. wrong: In 1969 Intel introduced a 1 K-bit memory chip.
2. right
3. wrong: Albert Einstein was ... developed (he doesn't live anymore)
4. wrong: Where were you born?
5. right

*Task 5

1. I **have visited** Chicago many times.
2. The Smiths **went** to Chicago last week.
3. I **have read** that book several times.
4. I first **read** it while I was on my vacation.

5. John **\$fell\$** as he was crossing the street.
6. I **\$saw\$** Mary a few days ago.
7. When the bell rang, John **\$jumped\$** from his seat and **\$ran\$** from the room.
8. I **\$have completed\$** writing my exercise.
9. He **\$started\$** to study English last winter.
10. I hear that you **\$have given\$** up the idea of studying Russian.

*Task 6

1. Mr. Smith has just arrived from Mexico.
2. I have already read this book for several times I read it first last holiday.
3. We bought a car two years ago and we have done 80 000 km since then.
4. They have left for work to South America, haven't they?
5. The train has already departed.
6. Has the train already departed?
7. Helena is writing letters. She has written five since morning.
8. Has she ever used a barcode reader?

5 OUTPUT DEVICES

\$Time: 4 hours\$

\$Study guide\$

The fourth chapter deals with output devices, which are used to present information to the user. Specialised output devices are also discussed. The grammar part follows up the last topic – the Present perfect tense, now in its continuous form.

At the end of this chapter, the students should:

- be familiar with various output devices and their function;
- know how to form and use Present perfect continuous

\$Keywords:\$ monitor, printer, dot/matrix printer, laser, inkjet, resolution.

Present perfect continuous

Output is the result of processing of input. There may be different forms of input such as text, graphics, sound etc. So, correspondingly there will be different forms of output. Following table shows the commonly found forms of output and output devices.

@

<i>Form of output</i>	<i>Output devices used</i>
Soft copy output	Visual Display Unit or Monitor
Hard copy output	Printers, Plotters
Sound output	Speakers

&

5.1 Printers

\$Dot Matrix Printer\$ It prints characters as combination of dots. Dot matrix printers are the most popular among serial printers. These have a matrix of pins on the print head of the printer which form the character. The computer memory sends one character at a time to be printed by the printer. There is a carbon between the pins & the paper. The words get printed on the paper when the pin strikes the carbon. There are generally 24 pins.

\$Laser Printer\$ is a type of printer that utilizes a laser beam to produce an image on a drum. The light of the laser alters the electrical charge on the drum wherever it hits. The drum is then rolled through a reservoir of toner, which is picked up by the charged portions of the drum. Finally, the toner is transferred to the paper through a combination of heat and pressure.

The available resolutions range from 300 dpi at the low end to 1,200 dpi at the high end. In addition to text, laser printers are very adept at printing

graphics, so you need significant amounts of memory in the printer to print high-resolution graphics. To print a full-page graphic at 300 dpi, for example, you need at least 1 MB (megabyte) of printer RAM. For a 600 dpi graphic, you need at least 4 MB RAM.

\$Non-Impact Printers\$ These printers use non-Impact technology such as ink-jet or laser technology. These printers provide better quality of O/P at higher speed. These printers are of two types :

\$Ink-Jet Printer\$ It prints characters by spraying patterns of ink on the paper from a nozzle or jet. It prints from nozzles having very fine holes, from which a specially made ink is pumped out to create various letters and shapes. The ink comes out of the nozzle in a form of vapors. After passing through a reflecting plate, it forms the desired letter/shape at the desired place.

Source: <http://ecomputernotes.com/fundamental/input-output-and-memory/what-is-a-printer-and-what-are-the-different-types-of-printers>

5.2 Monitors

5.2.1 Advantages of LCDs over CRTs

One major advantage of LCD monitors are their size; they are commonly 1 to 3 inches thick and weigh less than 10 pounds. CRT monitors, on the other hand, have a depth five times as large, and a weight of 30 to 50 pounds or more. As such, LCDs can take up 90% less space, and are far easier to move or adjust.

A wide variety of screen sizes are available, from 15 to 30 inches or larger. For average sizes — 22 to 24 inches — the price of an LCD monitor is about the same as a traditional CRT. LCD screens tend to last longer, however; in addition, if a few pixels on the screen fail, the monitor is still usable in most cases.

LCDs use relatively little electricity, especially when compared to their CRT counterparts, and produce far less heat. They also emit very low levels of electromagnetic radiation. LCD monitors are also easier on the eyes; glossy or matte screens are usually available, and matte screens reduce glare.

5.2.2 Disadvantages of LCDs

LCD monitors have largely displaced CRTs in most monitors, except for very cheap and very expensive models. CRTs still can offer better color content and depth at the high end, and also have the advantage of multisync, or the ability to keep colors consistent even when a picture's resolution is changed. Colors on LCDs may also change hue as the viewer moves to the outer limits of the viewing angle, particularly on displays with narrow viewing angles and low contrast ratios. Graphics, photography, and design professionals, as well as medical professionals, usually have preferred CRT monitors for these advantages.

A potential weak link of an LCD monitor is the backlight. Since the liquid crystals do not produce any light on their own, if the backlight fails, the

monitor is unusable. Many monitors come with a three-year warranty, but stipulate one year for the backlight.

Source: <http://www.wisegeek.com/what-is-a-lcd-monitor.htm#slideshow>

5.2.3 How to read a monitor add

*Task 1

Study this text about monitors. Then decide if each statement is true or false. Give reasons for your answers.

- 1 A dot pitch of 0.31 mm is better than one of 0.25 mm.
- 2 A maximum resolution of 1600 x 1200 is better than 1280 x 1024.
- 3 A refresh rate of 85 Hz is better than one of 75 Hz.
- 4 A 17-inch monitor is 17 inches wide.
- 5 The price of the monitor depends only on the size.

\$Philips 20.1 inch LCD Monitor 200P4SS/00\$

\$Specifications: \$

Picture/Display

- LCD panel type: 1600x1200 pixels, Anti glare polarised
- Panel size: 20.1 " / 51 cm
- Effective viewing area: 408 x 306 mm
- Pixel pitch: 0.255 x 0.255 mm
- Brightness: 250 cd/m²
- Contrast ratio: 400:1
- Display colours: 16M
- Viewing angle (Horizontal): 176 degree
- Viewing angle (Vertical): 176 degree
- Maximum resolution: 1600 x 1200 @ 60 Hz
- Factory present modes: 15 modes
- Refresh rate (V): 56Hz – 85 Hz

5.3 Specialised output device

Note: images have been removed. They were for illustrative purposes.\

5.3.1 Braille Displays

A braille display is an electronic device that connects to a computer to display braille characters. The display is made up of a line of 'soft' cells, each with 6 or 8 pins that move up and down to represent the dots of a braille cell. The display is used to represent a line of text on a computer screen.

The mechanism which raises the dots uses the piezo effect of some crystals, where they expand when a voltage is applied to them. Such a crystal is connected to a lever, which in turn raises the dot. There has to be a crystal for each dot of the display, i.e eight per character. The user can 'read' a line of braille cells by touching the pins of each cell as they pop up. After a line has been read the user can 'refresh' the display in order to read additional lines.

The number of braille cells in a display can vary. A full size display is 80 cells long which matches the character width of a word processor screen. Smaller displays will read the same line of text in stages (for instance a 40-cell display will read a line in 2 stages and so on).

Source: http://www.tiresias.org/research/devices/braille_displays.htm

5.3.2 Mouse button box

This device is perfect for those who prefer using their hands, despite some physical deficiencies.

It's USB so it works on both Mac and Windows (requires accompanying software for both). Very adjustable speeds and functions, even a dwell-click (Windows).

Choose either a Mouse Button Box with 1 button on the left or right (above pic), or with both left & right click buttons on the left or right (below pic).

Source: <http://www.disabledonline.com/keyboards-and-mice/ergonomic-mice/mouse-button-box.html>

5.3.3 An Atlas for the Blind

A failed experiment in speed: while I was rushing down into the basement without flicking on the light, the door closed before I had reached the downstairs switch. Frantically searching and failing to find it, I was rendered helpless by the dread of pitch darkness enveloping me. That part of my brain in charge of worst-case scenarios kicked into gear. Clawing my way back up, towards the light, the worst-case lobe was imagining what a lifetime without sight might be like. Only after regaining the safe, seeing side of the basement door was I struck by the paradox of trying to envision visionlessness.

Perhaps extrapolated from that childhood trauma, my idea of blindness is one of extreme claustrophobia and disorientation. That idea of blindness merely as a defect is probably the result of - *excusez le mot* - a lack of vision. It's often said that whoever misses one of the five senses [1], is compensated by a sharpening of the other four. It's probably closer to the truth that it's the blind *person*, not the blindness, that is doing the sharpening, finding new ways around the obstacle between themselves and observable reality.

One such innovative detour has been the invention of Braille [2], a raised type enabling those without sight to identify letters on the page, and enjoy reading just like everyone else. Somehow, it never struck me that this translation of the inked word to a tactile script would also be possible for that other information medium of the printed page - maps. In fact, as these images prove, maps composed of raised lines and dots were in use almost as early as the invention of Braille itself

Source: <http://bigthink.com/strange-maps/574-lines-in-the-darkness-an-atlas-for-the-blind>

5.3.4 Screen Readers For Blind Or Visually Impaired Users

It is not difficult for a sighted person to imagine how being blind or visually impaired could make using a computer difficult. Just close your eyes and you will instantly experience that even processing text is impossible – or impossible without additional software at least. Now a range of software is

available that can help to make using a computer an easier, more enjoyable and more productive experience for blind or visually impaired users.

5.3.5 Essential Software: A Screen Reader

A screen reader is an essential piece of software for a blind or visually impaired person. Simply put, a screen reader transmits whatever text is displayed on the computer screen into a form that a visually impaired user can process (usually tactile, auditory or a combination of both). While the most basic screen readers will not help blind users navigate a computer, those with additional features can give people with visual impairment much more independence.

Whilst most screen readers work by having a synthetic voice that reads text aloud, others can also communicate data via a refreshable braille display. Such screen readers make use of crystals that can expand when exposed to particular voltage levels (thanks to a phenomenon known as the Piezo Effect), allowing visually impaired users to use their fingers to read the text that is displayed on screen. But while screen-reading software can be affordable, such hardware is usually very expensive.

Source: <http://usabilitygeek.com/10-free-screen-reader-blind-visually-impaired-users/>

5.3.6 JAWS

Using JAWS, get started today, working with Microsoft and IBM Lotus Symphony applications. JAWS[®] is the world's most popular screen reader, developed for computer users whose vision loss prevents them from seeing screen content. JAWS reads aloud what's on the PC screen and gives the user a unique set of intelligent tools for navigating and accesses Web pages and all screen content.

JAWS enables you to work with Lotus Symphony, a suite of IBM tools for word processing, spreadsheets, and presentation creation and with Lotus Notes by IBM. JAWS also is compatible with Microsoft Office Suite, MSN Messenger, Corel WordPerfect, Adobe Acrobat Reader, Internet Explorer, Firefox - and many more applications that are used on a regular basis on the job and in school.

With a refreshable Braille display like Freedom Scientific's Focus, JAWS also provides Braille output in addition to, or instead of, speech. An array of versatile features and customizable options lets you tailor JAWS for your individual needs and preferences.

JAWS Professional: \$1,095

Source: <http://www.freedomscientific.com/products/fs/JAWS-product-page.asp>

5.3.7 Desktop Video Magnification at Its Best

The TOPAZ[®] desktop video magnifier provides a clear, crisp image on a 17-inch monitor or widescreen 20-, 22-, and 24-inch monitors for more magnified text on the screen. The large work surface is illuminated with long life LEDs, and the forward-mounted camera is 8.25 inches above the table, providing ample room for long sessions of reading, writing, or enjoying your favorite hobby.

\$Simple to Use, Yet Packed with Features\$

Just flip the switch to turn on the TOPAZ, and three dials are all you need for your basic video magnification functions – increase and decrease magnification, step through the enhanced color modes, and adjust brightness.

\$Freeze Frame Feature\$

Need to reference a phone number as you dial it? Just point to it with your finger, and press the Freeze Frame button. You've got it fixed on the screen and both hands free for the phone.

The monitor raises and lowers
and swivels 180 degrees side to side

TOPAZ Pricing for U.S. Customers

Camera only (no monitor): \$1,895

17-inch monitor (1.9x to 49x magnification): \$2,595

20-inch widescreen (2.4x to 64x magnification): \$2,795

22-inch widescreen (2.6x to 68x magnification): \$2,995

24-inch super widescreen (2.9x to 77x magnification): \$3,195

Source: <http://www.freedomscientific.com/products/lv/TOPAZ2-product-page.asp>

5.4 Language work – Present perfect continuous**\$Positive:\$**

I have got a problem

You have got a problem

He/she/it has been working in the garden.

We have got a problem

You have got a problem

They have got a problem

\$Negative:\$

I have not been working in the garden. I haven't been working in the garden.

You have not been working in the garden. You haven't been working in the garden.

He/she/it has not been working in the garden. He/she/it hasn't been working in the garden.

We have not been working in the garden. We haven't been working in the garden.

You have not been working in the garden. You haven't been working in the garden.

They have not been working in the garden. They haven't been working in the garden.

\$Question and short answer:\$

Have I been working in the garden? Yes, I have. No, I haven't.

Have you been working in the garden? Yes, you have. No, you haven't.

Has he/she/it been working in the garden? Yes, he/she/it has. No, he/she/it hasn't.

Have we been working in the garden? Yes, we have. No, we haven't.
 Have you been working in the garden? Yes, you have. No, you haven't.
 Have they been working in the garden? Yes, they have. No, they haven't.

\$Note:\$

- 1) The rules for using Present perfect continuous are the same as for the Present perfect simple (see p. 38) when differing them from Present and Past tenses.
- 2) Thus, you have to decide if to use Present, Past or Perfect tense. If you decide for the Perfect tense, read their use below:

\$Use:\$

They have been producing printers here for 5 years. (They started producing printers 5 years ago. They are still producing printers.)

I have been trying to ring them all day. (I started trying to ring them this morning. I am still trying to ring them.)

\$BUT\$

We normally use the present perfect simple with static verbs, or about situations we consider permanent.

Mark has been in Ostrava since 9 o'clock this morning. (NOT: has been being...)

I have lived in Ostrava all my life. (NOT: have been living...)

We use the present perfect simple when talking about a completed action, the present perfect continuous when something is still going on.

I've written a report for Catherine. (It is finished.)

I've been writing a report for Catherine. (I am still writing it.)

We use the present perfect simple when talking about how much, how many the present perfect continuous when talking about how long.

I've written \$five pages\$ so far.

I've been writing them \$the whole afternoon\$.

\$Note:\$

As with all other continuous tenses, be careful about the use of certain verbs that are not usually used in "ing" form:

@

be, believe, belong, care, concern, consider (uvažovat), consist, contain, cost, depend, deserve, desire, dislike, doubt, equal, find, fit, feel, forget, guess, hate, have, hear, hope, imagine, include, intend, involve, know, lack, like, love, matter, mean, mind, need, notice, obtain, owe, own, possess, prefer, realize, receive, recognize, refuse, regard, remember, remain, require, resemble, satisfy, see, seem, smell, suppose, taste, trust, think (domnívat se), understand, want, wish, wonder

&

***Task 2**

Read the situation and write two sentences using the words in brackets.

- 1 Peter started reading a book two hours ago. He is still reading it and now he is on page 60.
(read / for two hours)
(read / 42 pages so far)
- 2 Linda is from Poland. She is travelling round Europe at the moment. She began her tour two months ago.
(travel / for two months) She
(visit / five countries so far)
- 3 When they left college, Sue and Ellen started making films together. They still make films.
(make / ten films since they left college)
(make / films since they left college)
- 4 You have just arrived to meet a friend. She is waiting for you. You ask:
(how long / wait?)
- 5 Some friends of yours are having a party next week. You ask:
(how many people / invite?)

*Task 3

Put the verbs in brackets into the present perfect simple or the present perfect continuous.

- 1 I am thinking about finding a job in Ireland, so I *\$have been learning\$* English at evening classes for the last two years.
- 2 By the way, I *\$have worked\$* out those figures. They are on your desk now.
- 3 Marry is still writing letters. She 1... (write) letters all day.
- 4 She 2... (write) four letters today.
- 5 I'm sorry; I didn't know that you were here. 3... (you/ wait) long?
- 6 Look! Somebody 4... (break) that window.
'Is it still raining?' 'No, it 5... (stop).'

5.5 Summary

\$Output device\$ is a machine capable of representing information from a computer. Monitor is the main output device used to display the output from a computer on a screen. VDU is abbreviation for a computer monitor. Printer is another common output device used for printing the output of a computer on paper.

\$Present perfect continuous\$

To make the Present perfect continuous we use has/have + been+ -ing form of the verb.

\$Positive sentence\$

I/You/We/They've (have) been working.

He/She/It's (has) been writing.

\$Negative\$

I/You/We/They haven't (have not) been working.

He/She/It hasn't (has not) been writing.

\$Question\$

Have you been working? Yes, I have. / No, I haven't.

Has it been writing? Yes, it has. / No, it hasn't.

- The present perfect continuous is used with **for, since, How long...?** and other expressions of duration (e.g. **all day**), to talk about activities that started happening in the past and are still happening now.
- We use the present perfect continuous when something is still going on.

5.6 Vocabulary

@

accuracy	přesnost
barrage	přítal, záplava
be aware of	být si vědom
beam	paprsek
below	níže, pod
blurry	rozmazaný
brightness	jas
capable	schopný
carbon copy	kopie (na papíře)
cartridge	zásobník (náplň)
coated	obalený, pokrytý
college	vysoká škola
consist of	skládat se z
correspondingly	podobně, stejně tak
degree	stupeň
dot	tečka
drum	buben
fatigue	únava
flicker	mihotat se
fraction	zlomek
fuzzy	nejasný
grill pitch	rozteč
handout	leták
heat	teplo, žár
high end	náročný (zákazník)
hold true	být platné
hole	díra
character	znak
chart	diagram
ink	inkoust
intact	netknutý
jet	tryska
maintenance	údržba
make up	tvořit
matrix	matice

metal plate	plech
needle	jehla
nozzle	hubice, tryska
pin	jehlička
printer	tiskárna
printing head	tisková hlava
raise	zvednout
refresh rate	obnovovací frekvence
resolution	rozlišení
retain	udržet si
ribbon	páska
scale to	přizpůsobit se
strain	námaha
stride	kráčet
suitable	vhodný
surface	povrch
tend to	mít sklon k
trace out	vykreslit
tube	trubice
unique	unikátní
upwards	nahoru
viewing angle	pozorovací úhel
wax	vosk
&	

5.7 Key

*Task 1

- 1 False - A dot pitch of 0.31 mm is better than one of 0.25 mm.
- 2 True - A maximum resolution of 1600 x 1200 is better than 1280 x 1024.
- 3 True - A refresh rate of 85 Hz is better than one of 75 Hz.
- 4 False - A 17-inch monitor is 17 inches wide.
- 5 False - The price of the monitor depends only on the size.

*Task 2

- 1 He has been reading for two hours. He has read 42 pages so far.
- 2 She has been travelling for two months. She has visited five countries so far.
- 3 Sue and Ellen have made ten films since they left college. They have been making films since they left college.
- 4 How long have you been waiting?
- 5 How many people have you invited?

*Task 3

- 1 has been writing
- 2 has written

3 Have you been waiting
4 has broken
5 has stopped

6 REVISION 2

\$Time: 1 hour\$

\$Study guide\$

This revision unit summarises what you know about the Present perfect simple and continuous tenses. They are combined with the Present and Past tenses.

*Task 1

Read the article below and complete the gaps with verbs in their correct form. Use Present, Past or Perfect tenses – simple and continuous.

\$Letter from Apple CEO Steve Jobs\$

\$January 5, 2009\$

Dear Apple Community,

For the first time in a decade, I 1 ... (get) to spend the holiday season with my family, rather than intensely preparing for a Macworld keynote.

Unfortunately, my decision to have Phil deliver the Macworld keynote set off another flurry of rumors about my health, with some even publishing stories of me on my deathbed.

I 2... (decide) to share something very personal with the Apple community so that we can all relax and enjoy the show tomorrow.

As many of you know, I 3... (lose) weight throughout 2008. The reason 4... (be) a mystery to me and my doctors. A few weeks ago, I 5... (decide) that getting to the root cause of this and reversing it needed to become my #1 priority.

Fortunately, after further testing, my doctors 6... (think) they 7... (find) the cause—a hormone imbalance that has been “robbing” me of the proteins my body 8... (need) to be healthy. Sophisticated blood tests 9... (confirm) this diagnosis.

The remedy for this nutritional problem 10... (be) relatively simple and straightforward, and I 11... (already begin) treatment. But, just like I didn't lose this much weight and body mass in a week or a month, my doctors expect it will take me until late this Spring to regain it. I will continue as Apple's CEO during my recovery.

I 12... (give) more than my all to Apple for the past 11 years now. I will be the first one to step up and tell our Board of Directors if I can no longer continue to fulfil my duties as Apple's CEO. I 13... (hope) the Apple community will support me in my recovery and know that I will always put what is best for Apple first.

So now I 14... (say) more than I 15... (want) to say, and all that I am going to say, about this.

Steve

Source: <http://www.apple.com/pr/library/2009/01/05Letter-from-Apple-CEO-Steve-Jobs.html>

6.1 Key

- 1 am getting to spend
- 2 have decided
- 3 have been losing
- 4 has been
- 5 decided
- 6 think
- 7 have found
- 8 needs
- 9 have confirmed
- 10 is
- 11 have already begun
- 12 have given
- 13 hope
- 14 have said
- 15 wanted

7 STORAGE DEVICES

Time: 4 hours

\$Study guide\$

This unit introduces the topic of various storage devices used for short term and long term storage of data. The grammar part focuses on the use of modal verbs.

At the end of this chapter, the students should:

- learn basic information about memory types and storage media (devices);
- be familiar with using modal verbs

\$Keywords:\$ RAM, flash memory, optical memory, magnetic memory, SSD, cloud computing, medium/media
Modal auxiliary verbs

7.1 Basic storage devices

*Task 1

What kinds of storage devices do you know and use?

Alternatively referred to as storage, storage media, or storage medium, a storage device is a hardware device capable of holding information. There are two storage devices used in computers; a primary storage device such as computer RAM and a secondary storage device such as a computer hard drive. The secondary storage could be a removable, internal, or external storage. Without a storage device, you and your computer would not be able to save any settings or information and would be considered a dumb terminal. Below, are some additional examples of storage devices that are used with computers.

7.1.1 Floppy disk

A Floppy Disk Drive, or FDD or FD for short, is a computer disk drive that enables a user to save data to removable diskettes. Although 8" disk drives were first made available in 1971, the first real disk drives used were the 5 1/4" floppy disk drives, which were later replaced with 3 1/2" floppy disk drives. Today, because of the limited capacity and reliability of floppy diskettes many computers no longer come equipped with floppy disk drives and are being replaced with CD-R, other writable discs, and flash drives.

7.1.2 Compact disk

Alternatively referred to as a CD writer, CD-WO (Write once), WORM (Write Once Read Many) drive. CD-R is short for CD-Recordable and is a writable disc and drive that is capable of having information written to the disc once and then having that disc read many times after that.

A CD-R disc is coated with a photosensitive organic dye that allows a user to record information. Once the CD-R disc is placed within the computer, the recording process begins. The laser inside the drive heats the dye to reveal areas that diffuse the light like a traditional CD pit. The CD-R drive does not create pits on the CD; instead the burner creates reflective sections on the CD causing the computer's CD-ROM laser to interpret it as a pit. Once a CD-R disc is finished recording, the CD will be able to be used in any standard CD-ROM, CD-R, CD-RW, or DVD drive. Although, there were issues with the first revision DVD drives reading CD-R discs.

CD-Rs are a low cost solution for backing up software. Each CD-R often only costs a few cents (as of 2010 around 17-cents a disc) and are capable of holding up to 650 MB (74 minutes of music) or 700MB (80 minutes of music).

7.1.3 Cloud computing

A term used to describe services over a network by a collection of servers. These computers or cloud of computers enable the users visiting to have access to much faster computers or servers, be able to access programs and services from anywhere with Internet access often without having to install other software, and get access to the services from any device capable of reaching the network or Internet.

Because the term cloud computing is a broad term, it's likely if you've spent any time on the Internet or use devices connected to the Internet that you've used some cloud computing.

7.1.4 USB key

1. Alternatively referred to as a USB flash drive, data stick, pen drive, keychain drive and thumb drive, a jump drive is a portable drive that is often the size of your thumb that connects to the computer USB port. Today, flash drives are available in sizes such as 256MB, 512MB, 1GB, 5GB, and 16GB and are an easy way to transfer and store information.

Unlike an HDD the flash drive only contains an integrated circuit memory board capable of storing information and has no movable parts.

2. The term flash drive may also be used to describe an SSD.

7.1.5 Hard drive

Alternatively referred to as a hard disk drive and abbreviated as HD or HDD. The hard drive is the computer's main storage media device that permanently stores all data on the computer. The hard drive was first introduced on September 13, 1956 and consists of one or more hard drive platters inside of air sealed casing.

7.1.6 ZIP drive

Hardware data storage device developed by Iomega in 1994 that functions like a Standard 1.44" floppy drive. What makes the Iomega zip drive unique is

its capability to hold up to 100 MB of data or 250 MB of data on new drives. Iomega Zip Drives became very popular in late 1990s, however, became less popular as users needed larger storage capabilities. This drive was later replaced by larger and cheaper CD-R and CD-RW drives and discs. In the picture to the right, is an example of an Iomega Zip diskette. This diskette is bigger than the standard floppy diskette and is made out of a much harder plastic.

Source: <http://www.computerhope.com/jargon/s/stordevi.htm>

***Task 2**

Are the following statements true or false?

1. ZIP drive appeared in early 90's.
2. An SSD disk is similar in technology to a hard disk.
3. Cloud computing is rather related to the Internet.
4. There are two types of computer memories: primary and secondary.

7.2 Language work – modal verbs

***Task 3**

Note: Table has been removed and replaced by text

Study the following verbs and place them into the correct group:

Full verbs, Auxiliary verbs, Modal verbs

play - have - could - grow - do - can - should - want - have to - must - ought to - be - decide - may - might

***Task 4**

Which modal verbs are missing in the table above?

\$Use:\$

Modal auxiliary verbs are used to talk about things that we expect to happen, or events that are possible, necessary, improbable or impossible to happen. A special grammar construction of modal verbs enables to say that things did not happen or we are not sure if they happened.

\$Rules:\$

a) Modal verbs have no “-s” in the third person singular

He can speak.

It must be done.

b) Questions and negatives are made without “do”

May I close the door?

Could you help me?

c) Modal verbs have no past forms (“could” and “would” are exceptions).

We had to do it.

d) These verbs are followed by the infinitive without to (“ought” is an exception)

I can go there.

We should mend it.
We ought to mend it.

e) They are not preceded by “to”. Instead, other expressions are used.
I want to be able to learn some foreign language.

f) There cannot be 2 modal verbs in one sentence. Instead, other expressions are used.

She will have to take the examination again.
They must be able to give advice instantly.

*Task 5

Study the following sentences and try to define the difference:

I learn English. (a mere fact).
I must learn English. (obligation)
I can learn English. (possibility)
I can swim. (ability)
I could learn English. (possibility)
I might learn English. (possibility)
I may go out now. (permission)
He should be there by now. (assumption)

A general summary of the preceding examples reveals that modal auxiliary verbs somehow *modify the mode* (aspect) of the sentence, change the meaning of the message. Sometimes we wish to express an obligation, permission or possibility. Then we have to know which modal verb to use in which situation (see the following lines):

7.2.1 List of modal auxiliary verbs

@

Positive	Negative full form	Negative contracted form
can	cannot	can't
could	could not	couldn't
may	may not	doesn't exist
might	might not	mightn't (rare)
must	must not	mustn't
should	should not	shouldn't
ought to	ought not to	oughtn't (rare)
would	would not	wouldn't
will	will not	won't
shall	shall not	shan't

&

7.2.2 Meaning of modal auxiliary verbs

1) Certainty

Verbs used: shall, shan't, will, won't, must, can't, couldn't, would, wouldn't
That can't be John. He is abroad.

This child could one day rule the world.
Things will be alright.
I shall see you tomorrow.
You must be tired.

2) Probability

Verbs used: should, shouldn't, ought to, ought not to, may, may not
He should/ought to be here soon.
It shouldn't be difficult to get there.
We may purchase a new house.
The water may not be warm enough.

3) Weak probability

Verbs used: might, might not, could
I might see you again – who knows.
Things might not be so bad as they seem.
We could be millionaires one day.

4) Theoretical or habitual possibility.

Verbs used: can
Scotland can be warm in September.

5) Ability

Verbs used: can, can't, could, couldn't,
She can develop software. (present)
We couldn't read when we were two. (past)

6) Suggestion

Verbs used: shall, shan't, should, shouldn't, ought to, ought not to
People shouldn't use their cars so much, they should rather walk.
Shall we go?

7) Obligation, necessity

Verbs used: must
Students must obey their teacher.

8) Prohibition

Verbs used: mustn't, can't
Passengers at the airport mustn't leave their luggage unattended at any time.
You can't leave!

9) Permission

Verbs used: can, could, may (used in questions)
Can they leave?
Could they leave?
May they leave?

*Task 6

Which of the words will fit in the sentences? (More than one might fit.)

Verbs to use: may – can – might – could

- 1 ... I ask you something?
- 2 I ... go out this evening: I haven't decided yet.
- 3 You ... usually get a table without booking.
- 4 You ... find driving on the left a little strange at first.
- 5 Ask her: she ... be able to help you.
- 6 He says you ... go out if you want to
- 7 I ... be young, but I'm not stupid.
- 8 You ... never tell when you will need one.

*Task 7

Complete the following in the affirmative or negative, using words provided:

Verbs to use: must – have/had to – should – can/may

- 1 You ... get a visa if you want to enter the United States from Great Britain. There are no exceptions to this rule, so you ...try to get in without one.
- 2 Some years ago, when smallpox outbreaks were quite common, you ... have a smallpox vaccination certificate, but these days you ... have one.
- 3 I think you ... take a camera, even if it is a small one, as there are many interesting things to photograph.
- 4 In my opinion, you ... take too much luggage with you, as this makes it difficult to move from place to place.
- 5 You ... take perfume and cigarettes with you if you like, but you ... take large amounts or you ... pay import taxes.
- 6 If you are going to travel around the country you ... plan your trip carefully - it's much better that way - and you ... investigate the possibility of special tour-tickets for foreigners. I think they are a very good idea, but you ... buy them before entering the country as they are not on sale there.
- 7 I think you ... take most of your money in the form of travellers' cheques: it's safer and you can change them in most places.
- 8 Remember, you ... work in the United States without permission: it's absolutely forbidden for foreigners to do this.
- 9 If you want to hire a car you ... take your driver's licence with you; it's the first thing they ask you for. Remember that you ... drive on the right and not on the left, as in Britain.
- 10 When you enter the United States, the Immigration Officer gives you permission to stay for a certain time and, of course, you ... stay longer than that.

7.3 Special constructions substituting modal auxiliary verbs

Some modal auxiliary verbs need to be substituted in certain situations, either due to grammatical rules or meaning. Let's introduce them:

1) be able to (ability, possibility)

Verbs substituted: can, could

She will be able to buy a new PC soon. (can is not possible due to will)

I have been able to pass the exam. (can, could not possible in Present perfect)

They were able to escape. (when talking about a particular occasion, could is not possible)

Sometimes, there is no difference:

I can speak 4 languages. = I am able to speak 4 languages.

I could speak 4 languages. = I was able to speak 4 languages. (in the past)

2) be allowed to (permission)

Verbs substituted: can, could

She will be allowed to buy a new PC soon. (can is not possible due to will)

I have been allowed to take the exam. (can, could not possible in Present perfect)

They were allowed to enter. (when talking about a particular occasion, could is not possible)

Sometimes, there is no difference:

I can speak 4 languages. = I am allowed to speak 4 languages.

I could speak 4 languages. = I was allowed to speak 4 languages. (in the past)

3) have to; have got to (obligation)

Verbs substituted: must

She will have (got) to buy a new PC soon. (must is not possible due to will)

Driver: "You must fasten your seatbelt." (the driver says it - personal)

Driver: "You have to fasten your seatbelt." (the law says it – 3rd party)

The verbs have to/have got to are very similar verbs in meaning, but they cause problems with use because of their grammatical differences. Let's have a look at them a bit closer.

\$Positive:\$

I have a problem.

You have a problem.

He/she/it has a problem.

We have a problem.

You have a problem.

They have a problem.

I have got a problem. I've got a problem.

You have got a problem. You've got a problem.
 He/she/it has got a problem. He/she/it 's got a problem.
 We have got a problem. We've got a problem.
 You have got a problem. You've got a problem.
 They have got a problem. They've got a problem.

\$Negative:\$

I don't have a problem. I haven't got a problem.
 You don't have a problem. You haven't got a problem.
 He/she/it doesn't have a problem. She/she/it hasn't got a problem.
 We don't have a problem. We haven't got a problem.
 You don't have a problem. You haven't got a problem.
 They don't have a problem. They haven't got a problem.

\$Question and short answer:\$

Do I have a problem? Yes, I do. No, I don't.
 Have I got a problem? Yes, I have. No, I haven't.
 Do you have a problem? Yes, you do. No, you don't.
 Have you got a problem? Yes, you have. No, you haven't.
 Does he/she/it have a problem? Yes, he/she/it does. No, he/she/it doesn't.
 Has he/she/it got a problem? Yes, he/she/it has. No, he/she/it hasn't.
 Do we have a problem? Yes, we do. No, we don't.
 Have we got a problem? Yes, we have. No, we haven't.
 Do I have a problem? Yes, you do. No, you don't.
 Have I got a problem? Yes, you have. No, you haven't.
 Do they have a problem? Yes, they do. No, they don't.
 Have they got a problem? Yes, they have. No, they haven't.

\$Use:\$

- a) Have to and have got to mean the same expressing obligation:
 I have to / I've got to go.
 We have to/ We've got to learn it.
- b) Have to is used in American English, have got to in British English.
 At the same time, have to is used in more formal language, have got to in informal style.
- c) Have to is used in questions, rather than must
 She must do it. – Does she have to do it?
- d) In the past, the have got to form is not used:
 When I was young, I had to wear a uniform at school.
 My friend didn't have to work so hard.

***Task 8**

Complete the sentences by choosing the most appropriate alternative.

- 1 I must go to the bank a. I'm giving a training course there.
 2 I have to go to the bank b. I've got no money left.
 3 I must get more exercise c. it's doctor's orders!

4 I have to get more exercise d. it makes me feel so much better.

5 I have to finish this report e. I've already spent too long on it.

6 I must finish this report f. the company directors need it.

*Task 9

Make the following statements

a) questions

and for b) add negative answers:

1. He has to go to the post-office now.
2. You will have to wait outside.
3. They have to leave New York right away.
4. We had to stay in Chicago for two days.
5. They had to wait a long time for a reply to their letter.
6. One has to be very strong to do that type of work.
7. You will have to come back later.

7.4 Summary

There are many different kinds of storage device for computers, e.g. hard disk (a disk drive that reads and writes data to the disk), CD-a compact disk (a storage device in the form of a disk that is read using laser light), DVD (digital versatile disk read only memory – an optical disk storage device that can hold a large amount of video data), flash, USB flash disk, external hard disk, SSD disk, etc.

\$Modal verbs\$

Modals are special auxiliary verbs that add extra meaning to the main verb. For example, modals can express advice, necessity, and possibility.

\$Ability and possibility\$ can

\$Past ability\$ could

\$Past possibility\$ could + have done /could + have been done

\$Requesting actions and asking for permission\$

Can/Could?

Can/Could/May?

\$Obligation and necessity\$

\$Obligation\$ must, have to, need to

\$Negative\$ needn't, don't have to

\$Prohibition\$ mustn't, can't, (be) not allowed to

7.5 Vocabulary

@

affordable	cenově dostupný
although	ačkoliv
amount	množství
assume	předpokládat
backup	zálohovat

beefed up	vylepšit
bet	vsadit se
cargo	náklad
contents	obsah
drawbacks	nevýhody
encased	obalený
ensure	zajistit
erase	vymazat
exception	výjimka
floppy disk	disketa
generally	obecně
cheque	šek
instead	místo (něčeho)
interrupted	přerušen
lack of	nedostatek
medium/media	médium/média
modal verb	způsobové sloveso
modifiable	upravitelný
obligation	povinnost
permission	dovolení
possibility	možnost
precede	předcházet
predecessor	předchůdce
purchase	koupit
rectangular	obdélníkový
removable	odstranitelný
reveal	odhalit
spin up	roztočit se
spreadsheet	tabulkový procesor
steadily	plynule
stock	zásoba, sklad
summary	shrnutí
therefore	proto, tudíž
ultimately	hlavně, maximálně, vrcholně
versatile	všestranný
volatile	nestabilní
wear out	opotřebovat
within	v rámci
wrapped	zabalený
&	

7.6 Key

*Task 1

Subject of a class discussion

***Task 2**

1. False - ZIP drive appeared in early 90's.
2. False - An SSD disk is similar in technology to a hard disk.
3. True - Cloud computing is rather related to the Internet.
4. True - There are two types of computer memories: primary and secondary.

***Task 3**

Full verbs: play-have-grow-do-want-have to-be-decide

Auxiliary verbs: do-be-have

Modal verbs: could-can-should-must-ought to-may-might

***Task 4**

Subject of a class discussion

***Task 5**

Subject of a class discussion

***Task 6**

- 1 may/can/could
- 2 might/may
- 3 can
- 4 may/might could
- 5 might/may
- 6 can/may
- 7 may
- 8 can
- 9 can

***Task 7**

- 1 You **\$must\$** get a visa if you want to enter the United States from Great Britain. There are no exceptions to this rule, so you **\$shouldn't\$** try to get in without one.
- 2 Some years ago, when smallpox outbreaks were quite common, you **\$had to\$** have a smallpox vaccination certificate, but these days you **\$don't have to\$** have one.
- 3 I think you **\$should\$** take a camera, even if it is a small one, as there are many interesting things to photograph.
- 4 In my opinion, you **\$shouldn't\$** take too much luggage with you, as this makes it difficult to move from place to place.
- 5 You **\$can\$** take perfume and cigarettes with you if you like, but you **\$shouldn't\$** take large amounts or you **\$have to\$** pay import taxes.
- 6 If you are going to travel around the country you **\$should\$** plan your trip carefully - it's much better that way - and you **\$should\$** investigate the possibility of special tour-tickets for foreigners. I think they are a very good idea, but you **\$have to\$** buy them before entering the country as they are not on sale there.

7 I think you **\$should\$** take most of your money in the form of travellers' cheques: it's safer and you can change them in most places.

8 Remember, you **\$cannot\$** work in the United States without permission: it's absolutely forbidden for foreigners to do this.

9 If you want to hire a car you **\$must\$** take your driver's licence with you; it's the first thing they ask you for. Remember that you **\$have to\$** drive on the right and not on the left, as in Britain.

10 When you enter the United States, the Immigration Officer gives you permission to stay for a certain time and, of course, you **\$may\$** stay longer than that.

***Task 8**

1 I must go to the bank b. I've got no money left.

2 I have to go to the bank a. I'm giving a training course there.

3 I must get more exercise. d. it makes me feel so much better.

4 I have to get more exercise. c. it's doctor's orders!

5 I have to finish this report. f. the company directors need it.

6 I must finish this report. e. I've already spent too long on it.

***Task 9**

1. He doesn't have to go to the post-office now. – Does he have to go?

2. You will not have to wait outside. – Will you have to wait outside?

3. They don't have to leave New York right away. – Do they have to?

4. We didn't have to stay in Chicago for two days. – Did we have to?

5. They didn't have to wait a long time for a reply to their letter. – Did they have to?

6. One doesn't have to be very strong to do that type of work. – Does one have to?

7. You won't have to come back later. – Will you have to?

8 SOURCES AND RECOMMENDED LITERATURE

8.1 Printed

- Boeckner, K., Brown, Ch.: Oxford English for Computing. Oxford University Press, Oxford, 1994.
- Cotton, D., Robbins, S.: Business Class. Longman, Essex, 1996.
- Douša, J., Pluháček, A.: Introductions to computer systems. Vydavatelství ČVUT v Praze, Praha, 2000.
- Eastwood, J.: Oxford Practice Grammar, OUP, 2007, ISBN: 0194579808
- Glendinning, E., McEwan, J.: Basic English for Computing. Oxford University Press, Oxford, 2001.
- Glendinning, E., McEwan, J.: Oxford English for Information Technology. Oxford University Press, Oxford, 2002.
- Gráf, T.: Cvičebnice anglické gramatiky, Polyglot, 2000
- Hais, K.: Anglická mluvnice. 4. vydání. SPN Praha, 1991.
- Havlíček, M.: Osobní počítače a základy elektroniky anglicky. BEN, Praha, 1997.
- Kollmanová, L.: Angličtina pro samouky. LEDA, Praha, 1994.
- McCarthy, M., O'Dell F.: English Vocabulary in Use. University Press, Cambridge, 2002.
- Murphy, R.: English Grammar in Use. 4th edition. Cambridge University Press, Cambridge, 2012, ISBN: 978-0-521-18906-4.
- Swan, M.: Practical English Usage. 3rd edition, Oxford University Press, Oxford, 2005, ISBN: 0-19-442096-5.

8.2 Online

- <http://en.wikipedia.org/wiki/Laptop#Classification>
- <http://s3.amazonaws.com/>
- www.apple.com
- <http://cellphones.about.com/>
- <http://compreviews.about.com/od/multimedia/a/CRTvsLCD.htm>
- <http://www.computerhope.com/jargon/v/volamemo.htm>
- <http://dineshbakshi.com/igcse-gcse-ict/storage-devices-and-media>
- <http://www.dummies.com/how-to/content/how-does-a-computer-program-work.html>
- http://www.ehow.com/list_5990039_advantages-disadvantages-ssd-hard-drives_.html
- <http://www.geekosystem.com/unusual-tech-innovations/>
- <http://www.gradmalaysia.com/career-sector/article/current-and-future-trends-ict-2012>
- www.helpforenglish.cz
- http://www.historylearningsite.co.uk/personal_computer.htm
- <http://www.osu.eu/index.php?kategorie=689>
- http://www.sciencedaily.com/encyclopedia/computer_science
- www.ted.com

<http://www.wisegeek.org/what-is-an-optical-mouse.htm>

[http://www.zenith-](http://www.zenith-india.com/zen/trainingmaterial/details/how_computer_keyboards_work.htm)

[india.com/zen/trainingmaterial/details/how_computer_keyboards_work.htm](http://www.zenith-india.com/zen/trainingmaterial/details/how_computer_keyboards_work.htm)

http://www.zerocut.com/tech/c_terms.html