

3 Input Devices

Topic

Various types of input devices and their use

Learning objectives

Students will be able:

- to explain what an input device is
- to classify and describe input devices and their uses
- to identify different keys on a keyboard
- to understand and describe basic mouse actions
- to use technical vocabulary associated with input devices

Key words

mouse, keyboard, scanner, trackball, graphics tablet, light pen, joystick, game controller, barcode reader, touchpad, touch screen, webcam, microphone, cursor,

interact, control, select, click, double-click, drag, control, grab, release

Input devices

Input devices are pieces of hardware which allow us to enter data into the computer. The most frequently used are the **keyboard** and the **mouse**.

There is a variety of other devices which enable user to interact with a computer, such as a **scanner**, a **touchpad**, a **touch screen**, a **graphic tablet**, a **light pen**, a **trackball**, a **microphone**, a **game controller**, a **bar code reader**, a **webcam**, a **joystick**, etc.

The keyboard

The keyboard is an input device that enables the user to enter characters (letters, numbers and symbols) into a computer.

It consists of rows of keys with each key representing a different character.



The keys can be divided into five groups:

1. *Alphanumeric keys* – represent letters and numbers
2. *Function keys* – at the top of the keyboard, can be programmed to do special tasks
3. *Cursor control keys* – arrow keys allowing moving the cursor up, down, right and left, and keys “End”, “Home”, “Page Up” and “Page Down” serving for moving around a long document.
4. *Dedicated keys* – like the “Ctrl” or “Alt” key are used to issue commands or to produce alternative characters
5. *A numeric keypad* – on the right of the main keyboard

There are different types of keyboards available, for example, QWERTY keyboards, ergonomic keyboards, Braille keyboards.

The mouse

The mouse is an input device used to specify the position of the cursor or to make choices from menus. As you move the mouse, the cursor on the display screen moves in the same direction. Mice contain one or more buttons. Newer mice also include a *scroll wheel* for scrolling through long documents.



The mouse is important for graphical user interfaces because you can simply point to options and objects and click a mouse button. It is also useful for graphics programs that allow you to draw pictures by using the mouse like a pen, pencil, or paintbrush.

There are two basic types of mice:

- A **mechanical mouse** - has a rubber or metal ball underneath that can roll in all directions. Mechanical sensors within the mouse detect the direction the ball is rolling and move the cursor accordingly.
- An **optical mouse** uses light (a laser) to detect the movement of the mouse. It operates more quickly and precisely than a mechanical one.

The mouse can be wired or wireless.

The scanner

Using a scanner, you can input printed drawings, photographs or text directly into electronic codes that can be understood by the computer. A scanner works like a photocopier – a light is shone on the material and the scanner detects the reflected light. The image is read as the series of dots and then the digitised image is generated and stored as a file.



The trackball

The trackball or the trackerball works in exactly the same way as a mouse, but the ball is on top. The user rolls the ball around with his hand. They are often used on small portable computers or video game machines.



The graphics tablet

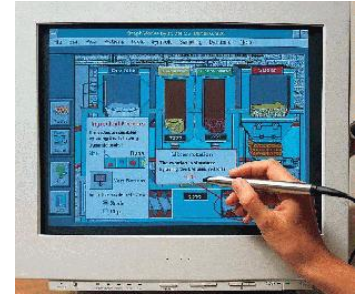
The graphics tablet is an input device which is often used by graphics designers and illustrators.

It has two parts – an electronic tablet with a flat surface and a special pen - stylus. The tablet can sense how the pen is moving around on its flat surface. By moving the pen around you are able to draw lines and pictures.



The lightpen

The lightpen is similar to an ordinary pen. It works by detecting light from the computer screen. It allows the user to draw pictures, diagrams or graphics directly on the screen display



The joystick

Joystick is a type of pointing device usually used for playing games. It has a gear like lever which is able to move in eight directions and control the movement of a pointer or some other display symbol. There is a button on the top of a lever which is used for selection. In industries it is used to control the robot and also in flight simulation training.



The barcode reader

Barcode Reader is a type of electronic device used for reading data in the form of bars and strips. It utilizes the laser beam of light that is sensitive to the reflections from the strips, space thickness and variation and translates the reflected optical impulses into digital data. Bar codes are used for labeling goods in big stores. After scanning the code, it transmits the data to store's computer, which located the current price, updates the stock and prints the receipt for the customer.



The touchpad

The touchpad is small, touch-sensitive pad used as a pointing device on some portable computers. By moving a finger or other object along the pad, you can move the pointer on the display screen. And you click by tapping the pad.



The touch screen

The touch screen is a type of display screen that has a touch-sensitive transparent surface. Instead of using a pointing device such as a mouse or light pen, you can use your finger to point directly to objects on the screen.



Such displays can be attached to computers, or to networks as terminals. They also play a prominent role in the design of digital appliances such as the personal digital assistant (PDA), satellite navigation devices, mobile phones, and video games.

The webcam

This is a small video camera, about the size of a golf ball that can send video pictures when attached to a computer with the right software.

Web Cams are used for video conferencing or to monitor something from across the Internet.



The microphone

A microphone converts sound into an electrical signal. Sound is basically rapidly changing air pressure and so a microphone contains a 'diaphragm' that moves back and forth as the sound waves hit it. This movement is detected by some electronics which produces an electrical signal. This signal is then fed into a sound card or audio amplifier.



Vocabulary

	Definition	Translation
barcode reader	an optical input device that uses the reflection of a light beam to read barcode labels	čtečka čárového kódu
cursor	the symbol on the screen indicating the point on the screen that is being used	kurzor
game controller	a device used to control video games	herní ovladač
graphics tablet	a graphical input device that tracks the movement of a stylus across a flat surface	grafický tablet
joystick	a cursor control input device consisting of a vertical handle that can move freely in two directions, used mainly in computer games	pákový ovladač, joystick
keyboard	the most common input device that has the keys arranged in a similar layout as a typewriter plus other keys for specific purposes	klávesnice
light pen	a pen-shaped input device used for drawing on a display screen. It detects light on the screen	světelné pero
microphone	a device used to input sound	mikrofon
mouse	a small input device used to specify the position of the cursor or to make choices from menus	myš
scanner	an optical input device that uses the reflection of light to transfer images or text from paper to a digital format	skener
touch screen	an input device in the form of a monitor screen that responds when touched by the user	dotykový displej
touchpad	a cursor control input device that that senses the movement of a finger across a flat surface	
trackball, tracker ball	a cursor control input device that has a ball on top that is moved by the user's fingers or the palm	kulový ovladač
webcam	a small video camera, about the size of a golf ball, that can send live video images via the Internet	webkamera

click	press and release (the mouse button)	kliknout
control	handle and cause to function	ovládat
double-click	press and release (the mouse button) twice quickly	dvojklik
drag	to draw slowly	táhnout
grab	to take	uchopit, chytit
release	to stop pressing	uvolnit
scroll	move through the text	rolovat
select	pick out, choose an element	vybrat, zvolit

Summary

Input devices are pieces of hardware which allow us to enter data into the computer. The most frequently used are the **keyboard** and the **mouse**.

There is a variety of other devices which enable user to interact with a computer, such as a **scanner**, a **touchpad**, a **touch screen**, a **graphic tablet**, a **light pen**, a **trackball**, a **microphone**, a **game controller**, a **bar code reader**, a **webcam**, a **joystick**, etc.

Tasks

1. Match the device with its use, then describe the use of each device in a sentence, use the phrases from ex. 2.

Device	Use
1. lightpen	a move the cursor rapidly
2. scanner	b input sound
3. mouse	c input text
4. joystick	d produce photo without a film
5. keyboard	e select from a menu
6. microphone	f read price labels in shops
7. digital camera	g an alternative to a mouse on laptop computers
8. barcode reader	h copy texts or pictures into a computer
9. touchpad	i draw pictures on a display screen

2. Complete the text about the mouse with the following verbs in the correct form.

click double click drag grab select move release control

A mouse 1)..... the movement of the cursor on the screen. As you 2)..... the mouse on the mouse mat, the cursor moves in the same direction.

A mouse has one or more buttons to communicate with the computer. If you want to place the cursor or choose the menu option, just 3)..... (press and release) on the mouse button.

The mouse is also used to start a program or open a file – put the pointer on the file name or the program icon and 4)..... on it.

The mouse also serves for 5)..... text and items on the screen. You can highlight text to be deleted, copied or edited.

When you want to move an image, position the pointer on the object you want to move, press the mouse button and 6)..... to a new location and finally 7)..... the button.

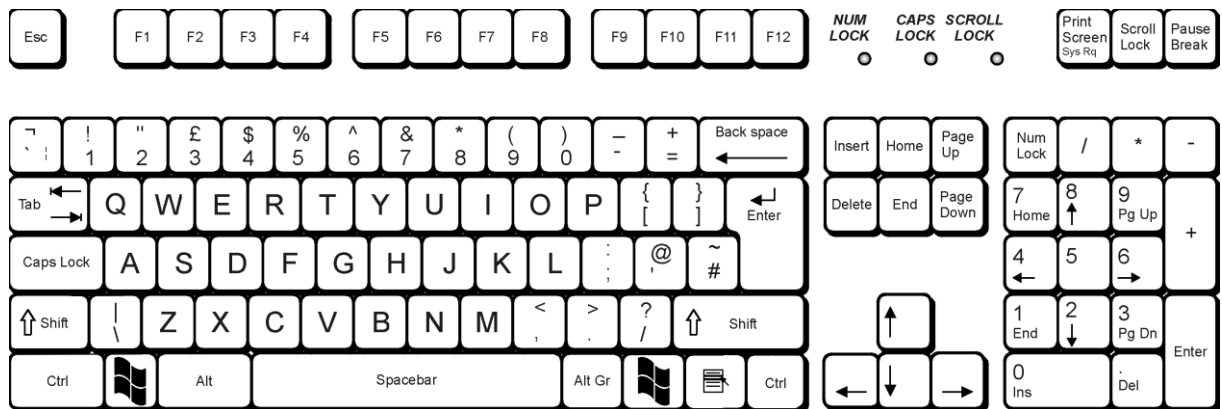
You can also change the shape of the object (picture, etc.) – just 8)..... one corner of the square (a rectangle) and stretch it into a desired shape.

3. Explain the use of the mouse, use the phrases from the box

- The mouse **is used in**(some application)
- The mouse **is used for**(-ing form)
- The mouse **is used to**(infinitive)
- **Using** a mouse **you can**(do something)
- You **can use** the mouse **to**(do something)

4. Label the picture of a standard keyboard with the groups of keys.

1. Alphanumeric keys
2. Function keys
3. Cursor control keys
4. Dedicated keys
5. A numeric keypad



5. Describe the function of following keys; use the phrases from the box in ex. 3.



6. With the help of the previous exercises write a short description of a keyboard.

Start with “Most keyboards have four sections...”, describe briefly each section and give examples of using individual keys.

7. Choose one of the input devices and write a short description.

Stage 1

Complete the information about the device:

What is it called?	
Who can use it?	
What does it look like?	
What is it used for?	
How is it connected to the computer?	

Stage 2

Use the table to write your description.

Stage 3

Check your description for grammar and spelling.

Questions

1. What is an input device?
2. Name 8 commonly used input devices.
3. How can you move the icon using the mouse?
4. How can you copy a file using the keyboard?
5. Describe the operation of a touchpad.
6. How does the light pen work?
7. What is the difference between a trackball and a mouse?
8. Name two parts of a graphics tablet.
9. What does a scanner do?
10. What is the difference between a mechanical mouse and an optical one?
11. What is a barcode reader, where and how is it used?
12. Describe a keyboard.
13. Describe the operation of a mouse.
14. What is a joystick?
15. What is a touch screen?
16. What is a webcam?
17. What is a microphone?

Literatura

- [1] ESTERAS, Santiago Remarcha. *Infotech : English for computer users*. 4th ed. Cambridge : Cambridge University Press, 2008. 168 s. ISBN 978-0-521-702997.
- [2] ESTERAS, Santiago Remarcha; FABRÉ, Elena Marco. *Professional English in Use : ICT*. 1st ed. Cambridge : Cambridge University Press, 2007. 118 s. ISBN 978-0-521-68543-6.
- [3] GLENDINNING, Eric H.; MCEVAN, John. *Basic English for Computing*. Revised and Updated. Oxford : Oxford University Press, 2003. 136 s. ISBN 0194574709.
- [4] CUSHING, Steve. *ICT: written by GCSE examiners*. London: Letts, 2005. ISBN 1-84315-511-7.
- [5] <http://thecomputereducation.com>
- [6] <http://www.webopedia.com>
- [7] <http://www.teach-ict.com>