English for IT

Presenter: Dr. Hai Tran

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Tran Son Hai

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Information Technology Department
Verified email at hcmup.edu.vn
Computer Science and Com... Image Classification

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TITLE	CITED BY	YEAR
Image classification using support vector machine and artificial neural network LH Thai, TS Hai, NT Thuy International Journal of Information Technology and Computer Science 4 (5 ...	159	2012
A Facial Expression Classification System Integrating Canny, Principal Component Analysis and Artificial Neural Network TSH Le Hoang Thai, Nguyen Do Thai Nguyen International Journal of Machine Learning and Computing 1 (4)	56 *	2011
Applying Multi-CNNs model for detecting abnormal problem on chest x-ray images PN Kieu, HS Tran, TH Le, T Le, TT Nguyen 2018 10th International Conference on Knowledge and Systems Engineering (KSE ...	41	2018
Advertisement image classification using convolutional neural network	37	2017

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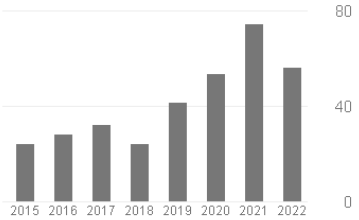
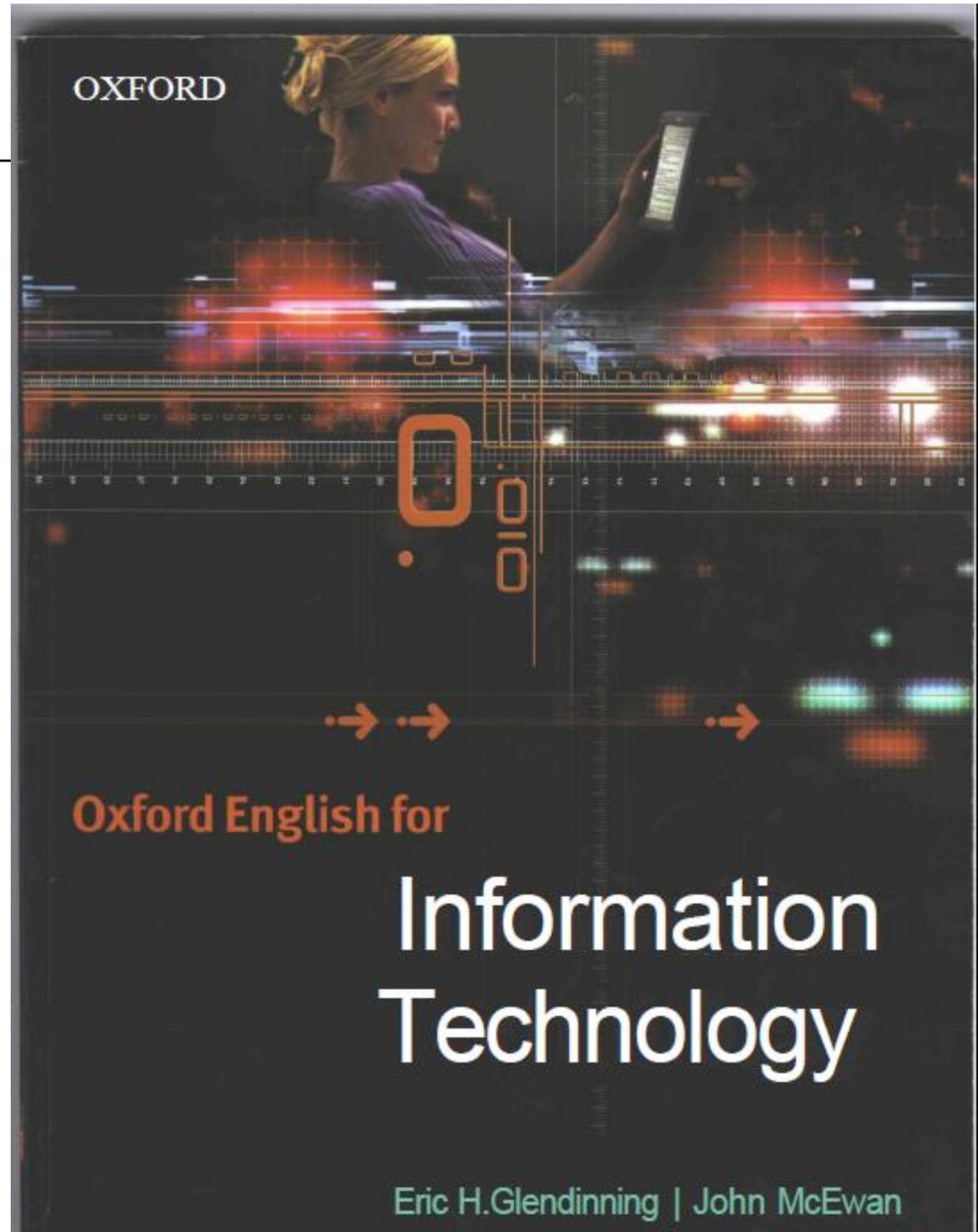


Initial– Find a group

Textbook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Oxford English for
Information Technology
Eric H.Glendinning | John McEwan

Agenda

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18	3 Computer Applications	Present passive	Reading diagrams Ignoring irrelevant info		Describing a process	Describing a process
24	4 Peripherals	Revision: Comparison and contrast		Listening for detail		Describing function Comparing and contrasting
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36	6 Operating Systems	*-ing* form: as noun and after prepositions	Matching text and diagram Prediction		Exchanging technical information	
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Unit 1-4

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Listen a song and summary

Unit 1

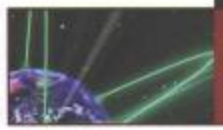
- Past simple and Present Perfect
- **English Tenses: Learn PRESENT PERFECT with a game!** https://www.youtube.com/watch?v=FtR3e9xk688
- **PRESENT PERFECT in 3 minutes**
- https://www.youtube.com/watch?v=TNv00g8R-Go
- **Simple Past in 3 minutes**
- https://www.youtube.com/watch?v=3V0VxBlih0A

Unit 1

- Past simple and Present Perfect
- **Learn English Tenses: PAST SIMPLE in 40 Mins**
  https://www.youtube.com/watch?v=dmJrYbDjxQY
- **Simple Past in 3 minutes**
  https://www.youtube.com/watch?v=TNv00g8R-Go

Unit 1

UNIT 1



Computer Users

STARTER **1** Work in groups. Share information on how you use computers in your free time. Compare answers with other groups and make a list of uses for your class.

LISTENING **2** 🎧 You are going to hear four people talk about how they use computers. Before you listen, try to predict the uses they describe.

User	Possible use
primary school teacher Open University student girl (Louise), aged 6 artist	

3 🎧 Now listen to the recordings and note the actual uses described.

User	Actual use
primary school teacher Open University student girl (Louise), aged 6 artist	

4 🎧 Now listen to the recordings again to find the answers to these questions:

1 How does the story-telling program encourage children to work together?
2 In what way is the children's reaction to this program different from other uses they make of computers?
3 What is the OU student studying?
4 What opportunity has she to meet other students?
5 What can you do with Pets 3?
6 What does Louise do with clipart?
7 How did the artist display work to dealers in the past?
8 What is the difficulty in selling through a website?

LANGUAGE WORK **Revision: Past simple and Present perfect**

Study these examples of the Present perfect from the recording of the artist.

1 *I've scanned* in about a third of these photographs.
2 *I've organised* the paintings into themes.
3 *I've added* a sound track.

Why doesn't the speaker use the Past simple?

4 *I scanned* in about a third of these photographs.
5 *I organised* the paintings into themes.
6 *I added* a sound track.

We use the Present perfect to describe past actions with present relevance. The artist uses the Present perfect because he is describing a CD he has just made and what he is going to do with it in the near future.

We use the Past simple to describe completed actions in the past. It is often used with time expressions such as *last year, before PCs were introduced, in 1998.* Note these examples from the recording:

7 I made one for Mary's birthday *last week.*
8 We tried it out *last term.*

Unit 1

- **Computer Users**
- **Primary school teacher** We've got a new program with [redacted] to encourage young children to tell stories. We tried it out last term and now we use it regularly. There's a mat in front of the monitor, like a carpet. There are pressure pads under the mat. When the[redacted] stand on them, they can move about inside the [redacted]on the screen. If they stand on the right, they, er, can move to the right, and so on. The good thing is that it works better if there are more children on the mat. This encourages them to work together. What I like about this[redacted] is that if you ask the children what they've been doing, they don't say, 'We've been working with the computer', they say 'We've been telling stories'. The computer doesn't get in the way of learning, it's just a tool. We don't get that reaction when we sit them down at a [redacted].

Unit 1

- **Computer Users**
- **Open University student** I've had a computer for about, oh, three years now. I'm an OU student doing a degree in mathematics. I work full time so I study at home in the evenings and at weekends. Some Saturdays there are tutorials I can attend in town but mostly I work alone. I use the computer to write my assignments. I also use the Internet to email my tutor if I have any problems with the course work. There's a help group too on the Web made up of other students doing my course ... not just here in the UK but around the world. We can chat about assignments and help each other out if we're in difficulty.

Unit 1

- **Computer Users**
- **Louise, aged 6** Well, I make cards for my friends. I made one for Mary's birthday last week. I use Word and you go into clipart. Then these things come up on the screen. And you can click on any one like animals and two people with a heart, and a star and a hat. I've got CDROMS. I like Splat the Cat and Pets 3. You click on Go to the Adoption Centre, then you go to Pick a Pet and you can choose what you want, a cat or a dog. And you can give it a name and feed it. The one I'm going to adopt is a cat. ... And you've got to give your cat a name. But first I'll take its picture, then I'll save it.

Unit 1

- **Computer Users**
- **Artist** I paint mainly figures in imaginary interiors. Erm, they represent myths. I work in acrylics although I also make woodcuts. Erm, I keep photographs of most of what I've done apart from the work I've destroyed ... the ones I didn't like. I've scanned in about a third of these photographs, around 100 paintings, to make a CD. I've organised the paintings into themes and added a sound track so that each group of paintings is accompanied by music. Erm, I'll send the CD to dealers. In the past it would have been slides. I'm also going to start my own website to try to sell directly. The difficult thing is trying to get people to visit your site.

Unit 1

5 The artist is being interviewed. Make questions to match his answers. Use the correct form of the Past simple or Present perfect, whichever is correct. For example:

Question: What *did you do yesterday?*
Answer: Worked on the computer.

1 Q What...
A Worked on a CD of my paintings.
2 Q How many...
A About a third.
3 Q What...
A I destroyed them.
4 Q How...
A I scanned them in.
5 Q How...
A I've organised them into themes.
6 Q Have...
A Yes, I've added a sound track.
7 Q How long...
A It's taken me about a week.
8 Q When...
A I started about ten years ago.
9 Q What...
A Before I had a computer, I had to use slides.
10 Q Have...
A Yes, I've sold a few.

6 Put the tenses in this dialogue in the correct form: Past simple or Present perfect.

1 A What (do) today?
2 B I (work) on my project. I (search) the Web for sites on digital cameras.
3 A (find) any good ones?
4 B I (find) several company sites - Sony, Canon, ... but I (want) one which (compare) all the models.
5 A Which search engine (use)?
6 B Dogpile mostly. (ever use) it?

7 A Yes, I (try) it but I (have) more luck with Ask Jeeves. Why don't you try it?
8 B I (have) enough for one night. I (spend) hours on that project.
9 A I (not start) on mine yet.
10 B Yeh? I bet you (do) it all.

PROBLEM-SOLVING **7** How do you think these professions might use computers? Compare answers with others in your group.

architects
interior designers
farmers
landscape gardeners
musicians
rally drivers
sales people

SPEAKING **8** Work in pairs. Find out this information from your partner. Make sure you use the correct tense in your questions. For example:

download music from the Internet [what site]
A *Have you ever downloaded music from the Internet?*
B *What site did you use?*

1	send a video email attachment	[who to, when]
2	fit an expansion card	[which type]
3	replace a hard disk	[what model]
4	fix a printer fault	[what kind]
5	make your own website	[how]
6	have a virus	[which virus]
7	watched TV on the Internet	[which station]
8	write a program	[which language]

WRITING **9** Describe how you use computers in your study and in your free time.

Describe how to use computers

- IT professionals rely on computers for both study and leisure.
- In their studies, they use computers to research, analyze data, and develop software or solutions. They leverage programming languages, virtual environments, and online resources to enhance their skills.
- During leisure time, IT enthusiasts often *game, watch* tech-related content, or tinker with personal projects, exploring new technologies and trends. They may also engage in online communities, forums, and coding challenges to stay updated and connected with peers.
- Whether for work or play, computers are essential tools that IT individuals leverage to learn, create, and unwind in the ever-evolving world of technology.

Unit 1

SPECIALIST READING

A Find the answers to these questions in the following text.

1 Name some types of devices that use 'computers on a chip'.
2 What uses of handheld computers are mentioned in the text?
3 What are the benefits of using computers with the following items?
   a Security systems
   b Cars
   c Phones
4 What smart devices are mentioned in the text?
5 What are smart cards used for?
6 What are the advantages of multimedia?
7 What can medical expert systems do?
8 How can computers help the disabled?
9 What types of computing systems are made available to people in remote locations using electronic classrooms or boardrooms?
10 What aspects of computing can people power determine?

Computers Make the World Smaller and Smarter

The ability of tiny computing devices to control complex operations has transformed the way many tasks are performed, ranging from scientific research to producing consumer products. Tiny 'computers on a chip' are used in medical equipment, home appliances, cars and toys. Workers use handheld computing devices to collect data at a customer site, to generate forms, to control inventory, and to serve as desktop organisers.

Not only is computing equipment getting smaller, it is getting more sophisticated. Computers are part of many machines and devices that once required continual human supervision and control. Today, computers in security systems result in safer environments, computers in cars improve energy efficiency, and computers in phones provide features such as call forwarding, call monitoring, and call answering.

These smart machines are designed to take over some of the basic tasks previously performed by people; by so doing, they make life a little easier and a little more pleasant. Smart cards store vital information such as health records, drivers' licenses, bank balances, and so on. Smart phones, cars, and appliances with built in computers can be programmed to better meet individual needs. A smart house has a built-in monitoring system that can turn lights on and off, open and close windows, operate the oven, and more.

With small computing devices available for performing smart tasks like cooking dinner, programming the VCR, and controlling the flow of information in an organization, people are able to spend more time doing what they often do best - being creative. Computers can help people work more creatively.

Multimedia systems are known for their educational and entertainment value, which we call 'edutainment'. Multimedia combines text with sound, video, animation, and graphics, which greatly enhances the interaction between user and machine and can make information more interesting and appealing to people. Expert systems software enables computers to 'think' like experts. Medical diagnosis expert systems, for example, can help doctors pinpoint a patient's illness, suggest further tests, and prescribe appropriate drugs.

Connectivity enables computers and software that might otherwise be incompatible to communicate and to share resources. Now that computers are proliferating in many areas and networks are available for people to access data and communicate with others, personal computers are becoming interpersonal PCs. They have the potential to significantly improve the way we relate to each other. Many people today telecommute - that is, use their computers to stay in touch with the office while they are working at home. With the proper tools, hospital staff can get a diagnosis from a medical expert hundreds or thousands of miles away. Similarly, the disabled can communicate more effectively with others using computers.

Distance learning and videoconferencing are concepts made possible with the use of an electronic classroom or boardroom accessible to people in remote locations. Vast databases of information are currently available to users of the Internet, all of whom can send mail messages to each other. The information superhighway is designed to significantly expand this interactive connectivity so that people all over the world will have free access to all these resources.

People power is critical to ensuring that hardware, software, and connectivity are effectively integrated in a socially responsible way. People - computer users and computer professionals - are the ones who will decide which hardware, software, and networks endure and how great an impact they will have on our lives. Ultimately people power must be exercised to ensure that computers are used not only efficiently but in a socially responsible way.

[Adapted from 'Computing in the Information Age', 2nd edition, Nancy Stern & Robert A. Stern, (Wiley), pages 19-22]

B Re-read the text to find the answers to these questions:

1 Match the terms in Table A with the statements in Table B.

Table A

a	Edutainment
b	Multimedia
c	Expert system
d	Telecommute
e	Information superhighway

Table B

i	Software that enables computers to 'think' like experts
ii	Use computers to stay in touch with the office while working at home
iii	Internet system designed to provide free, interactive access to vast resources for people all over the world
iv	Multimedia materials with a combination of educational and entertainment content
v	A combination of text with sound, video, animation, and graphics

2 Mark the following statements as True or False:

a Desktop organisers are programs that require desktop computers.
b Computers are sometimes used to monitor systems that previously needed human supervision.
c Networking is a way of allowing otherwise incompatible systems to communicate and share resources.
d The use of computers prevents people from being creative.
e Computer users do not have much influence over the way that computing develops.

Unit 1

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Matching after reading

1 Match the terms in Table A with the statements in Table B.

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Table B	
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Recap Grammar

- Present tense & Past tense
- Present perfect and How to describe an item
- Present and past passives: https://www.youtube.com/watch?v=mAFd4jjo0YU
- Compare
- If clause

Unit 2

2 What do these abbreviations mean? Use the Glossary if necessary.

1 CD-ROM
2 RDRAM
3 MB
4 GHz
5 AGP
6 SDRAM
7 SVGA

Unit 2

HOW TO READ A COMPUTER AD.

1. Intel Pentium IV 1.7GHz Processor
2. Mini Tower Chassis
3. 256MB Rambus RDRAM
4. 60GB Hard Drive
5. Embedded Intel 3D Direct AGP video with 64MB SDRAM
6. 64-voice wavetable sound
7. 48 X CD-ROM Drive
8. 19" (1 7.9" VIS) Colour SVGA monitor
9. Microsoft Windows XP
10. 1.44MB 3.5" Floppy Drive
11. Microsoft Intellimouse
12. 105-key keyboard

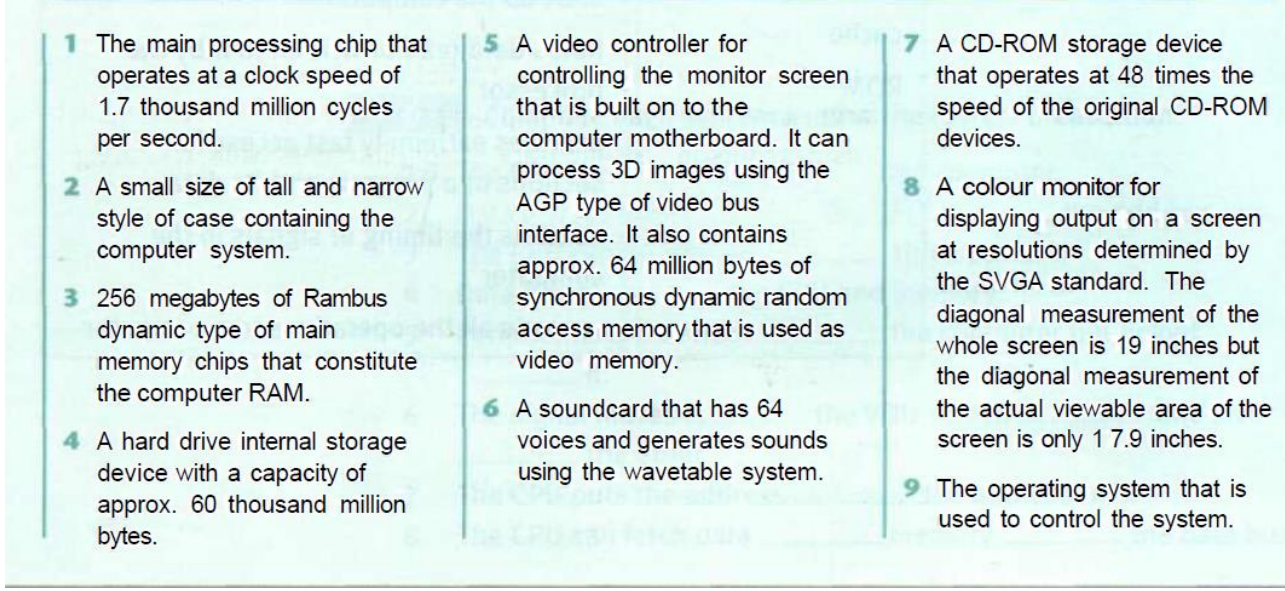
Fig 2
Dell computer

Unit 2

1. The main processing chip that operates at a clock speed of 1.7 thousand million cycles per second.
2. A small size of tall and narrow style of case containing the computer system.
3. 256 megabytes of Rambus dynamic type of main memory chips that constitute the computer RAM.
4. A hard drive internal storage device with a capacity of approx. 60 thousand million bytes.
5. A video controller for controlling the monitor screen that is built on to the computer motherboard. It can process 3D images using the AGP type of video bus interface. It also contains approx. 64 million bytes of synchronous dynamic random access memory that is used as video memory.
6. A soundcard that has 64 voices and generates sounds using the wavetable system.
7. A CD-ROM storage device that operates at 48 times the speed of the original CD-ROM devices.
8. A colour monitor for displaying output on a screen at resolutions determined by the SVGA standard. The diagonal measurement of the whole screen is 19 inches but the diagonal measurement of the actual viewable area of the screen is only 17.9 inches.
9. The operating system that is used to control the system.

Answer the questions

- 1 What is the memory size of this PC?
- 2 Which input devices are supplied?
- 3 What size is the monitor?
- 4 How fast is the processor?
- 5 What is the capacity of the hard drive?
- 6 Which operating system does it use?
- 7 What multimedia features does the computer have?



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Unit 2

LANGUAGE **WORK** Function of an item

We can describe the function of an item in a number of ways. Study these examples.

Using the Present simple

1 ROM *holds* instructions which are needed to start up the computer.

Used to-infinitive. *Used for* + *-ing* form

2 ROM is *used to hold* instructions which are needed to start up the computer.

3 ROM is *used for holding* instructions which are needed to start up the computer.

Emphasising the function

4 *The function of ROM is* to hold instructions which are needed to start up the computer.

Unit 2

4 Match each item in Column A with its function in Column B. Then describe its function in two ways.

A Item	B Function
RAM	controls the cursor
processor	inputs data through keys like a typewriter
mouse	displays the output from a computer on a screen
clock	reads DVD-ROMs
3.5" floppy drive	reads and writes to removable magnetic disks
monitor	holds instructions which are needed to start up the computer
keyboard	holds data read or written to it by the processor
DVD-ROM drive	provides extremely fast access for sections of a program and its data
cache	controls the timing of signals in the computer
ROM	controls all the operations in a computer

Quiz – Past and present perfect tense

1. She _____ (visit) Paris last summer. a) visited b) visits c) has visited d) is visiting
2. By the time we arrived, they _____ (already / finish) dinner. a) already finished b) are already finishing c) already finish d) have already finished
3. I _____ (live) in this city for five years. a) lived b) live c) have lived d) living
4. They _____ (not / see) that movie yet. a) didn't see b) don't see c) haven't seen d) aren't seeing
5. Last night, she _____ (study) for her final exams. a) studied b) studies c) has studied d) is studying
6. By the time you get back, I _____ (already / leave) for work. a) already left b) am already leaving c) already leave d) have already left
7. Tom _____ (play) soccer with his friends every weekend. a) played b) plays c) has played d) playing
8. They _____ (just / arrive) at the airport. a) just arrived b) are just arriving c) just arrives d) have just arrived
9. My grandmother _____ (cook) dinner when I called her. a) cooked b) cooks c) has cooked d) cooking
10. We _____ (not / visit) that museum before today. a) didn't visit b) don't visit c) haven't visited d) aren't visiting

Unit 2

5 With the help of the Glossary if necessary, describe the functions of these items.

1 scanner
2 printer
3 ATM
4 PDA
5 hard disk drive
6 supercomputer
7 mainframe computer
8 barcodes
9 swipe cards
10 memory

Unit 2

SPEAKING **8** Work in pairs, A and B. Find out as much as you can about your partner's computer and complete this table.

Student A your computer details are on page 184.
Student B your computer details are on page 190.

Feature	A	B
processor type		
processor speed		
bus speed		
memory (RAM)		
memory type		
hard disk capacity		
hard disk type		
monitor size		
monitor resolution		
CD-ROM drive speed		

Questions

- Which one is the most important : skill, tool and process? Why?

As an **IT project manager**, it's essential to understand that skills, tools, and processes are all crucial components of *successful* project management. They are interconnected and play different but equally important roles in achieving project objectives. It's challenging to definitively say which one is the most important, as they are interdependent, and their significance can vary depending on the specific project and its context. However, I can provide some insights into the importance of each:

Skills:
Skills refer to the knowledge, expertise, and competencies of the project manager and the project team. These include leadership, communication, problem-solving, technical proficiency, and domain knowledge. Skills are foundational because even with the best tools and processes, a lack of essential skills can lead to project failure. Skilled individuals can adapt to changing circumstances, make informed decisions, and effectively lead and motivate the team.
Why skills are important: Skills are essential because they drive the effectiveness of the project manager and the team. Without the right skills, it's challenging to execute processes and utilize tools effectively. Skilled project managers can adapt to different situations and overcome obstacles, ensuring that the project stays on track.

Tools:
Tools encompass the software, technology, and resources used to manage and support the project. This includes project management software, communication tools, data analytics platforms, and more. Tools are valuable because they enhance efficiency, facilitate collaboration, and provide visibility into project progress.
Why tools are important: Tools are crucial because they enable project managers and teams to implement processes efficiently. They help with scheduling, tracking, reporting, and communication, reducing manual effort and minimizing errors. The right tools can significantly streamline project management activities.

Processes:
Processes are the structured methods and workflows that guide the execution of a project from initiation to completion. These processes include project planning, risk management, change control, quality assurance, and more. They provide a systematic approach to project management, ensuring consistency and accountability.
Why processes are important: Processes are vital because they provide a framework for managing projects. They help project managers and teams work cohesively towards common goals. Well-defined processes promote efficiency, reduce uncertainty, and enhance the overall project's predictability.

In summary, while it's challenging to prioritize one over the others, it's more practical to view skills, tools, and processes as interrelated components of successful project management. Skills provide the foundation for effective project leadership, tools enhance efficiency and collaboration, and processes provide structure and consistency. A skilled project manager should be adept at leveraging the right tools and implementing suitable processes to achieve project success. Ultimately, the synergy between these three elements is what leads to the best project outcomes.

Writing task

- Writing task : Information Technology essay
  You should spend about 40 minutes on this task.
- Write about the following topic:
- ***In the last 20 years there have been significant developments in the field of information technology (IT), for example the World Wide Web and communication by email. However, these developments in IT are likely to have more negative effects than positive in the future.***
- ***To what extent do you agree with this view?***
- Give reasons for your answer and include any relevant examples from your own experience or knowledge.
- Write at least 250 words.

Writing task

- ***Some people believe that developments in the field of artificial intelligence will have a positive impact on our lives in the near future. Others, by contrast, are worried that we are not prepared for a world in which computers are more intelligent than humans. Discuss both of these views and give your own opinion.***
- People seem to be either excited or worried about the future impact of artificial intelligence. Personally I can understand the two opposing points of view; I am both fascinated by developments in artificial intelligence and apprehensive about its possible negative effects.
- On the one hand, the increasing intelligence of technology should bring some obvious benefits. Machines are clearly able to do many jobs better than humans can, especially in areas that require high levels of accuracy or calculations using large amounts of data. For example, robots are being developed that can carry out surgical procedures with greater precision than a human doctor, and we already have cars that use sensors and cameras to drive themselves. Such technologies can improve safety by reducing the likelihood of human errors. It is easy to imagine how these developments, and many others, will steadily improve our quality of life.
- On the other hand, I share the concerns of people who believe that artificial intelligence may harm us if we are not careful. In the short term, it is likely that we will see a rise in unemployment as workers in various industries are replaced by machines or software programs. For example, self-driving vehicles are expected to cause redundancies in driving jobs, such as lorry drivers, taxi drivers and bus drivers. In the medium term, if intelligent technologies gradually take jobs away from humans, we may find that people become deskilled and lose their sense of purpose in life. A longer term fear is that computers become so intelligent that they begin to make decisions without human oversight and without regard for our well-being.
- In conclusion, while intelligent machines will no doubt improve our lives in many ways, the potential risks of such technologies should not be ignored.

Writing task

- ***Sample essay:***

The last two decades have seen enormous changes in the way people's lives are affected by IT, with many advances in this field. However, while these technological advances have brought many benefits to the world, it can be argued that these developments in IT will result in more negative impacts than positive.

To begin, email has made communication, especially abroad, much simpler and faster, resulting in numerous benefits for commerce and business. Furthermore, the World Wide Web means that information on every conceivable subject is now available to us. For example, people can access news, medical advice, online education courses and much more via the internet. It is evident that these improvements have made life far easier and more convenient for large numbers of people and will continue to do so for decades to come.

Nevertheless, the effects of this new technology have not all been beneficial. For example, many people feel that the widespread use of email is destroying traditional forms of communication such as letter writing, telephone and face-to-face conversation. This could result in a decline in people's basic ability to socialize and interact with each other on a day-to-day basis.

In addition, the large size of the Web has meant that it is nearly impossible to regulate and control. This has led to many concerns regarding children accessing unsuitable websites and viruses. Unfortunately, this kind of problem might even get worse in the future at least until more regulated systems are set up.

In conclusion, developments in IT have brought many benefits, yet I believe developments relating to new technology are likely to produce many negative effects in the future that must be addressed if we are to avoid damaging impacts on individuals and society.

Unit 3

- Introduction to Computer applications (https://www.youtube.com/watch?v=CeaSZlnDC1w

Unit 3

READING 2 Study this diagram. Using only the diagram, try to list each stage in the operation of this computerised speed trap to make an explanation of how it operates. For example:

1 Camera 1 records the time each vehicle passes.

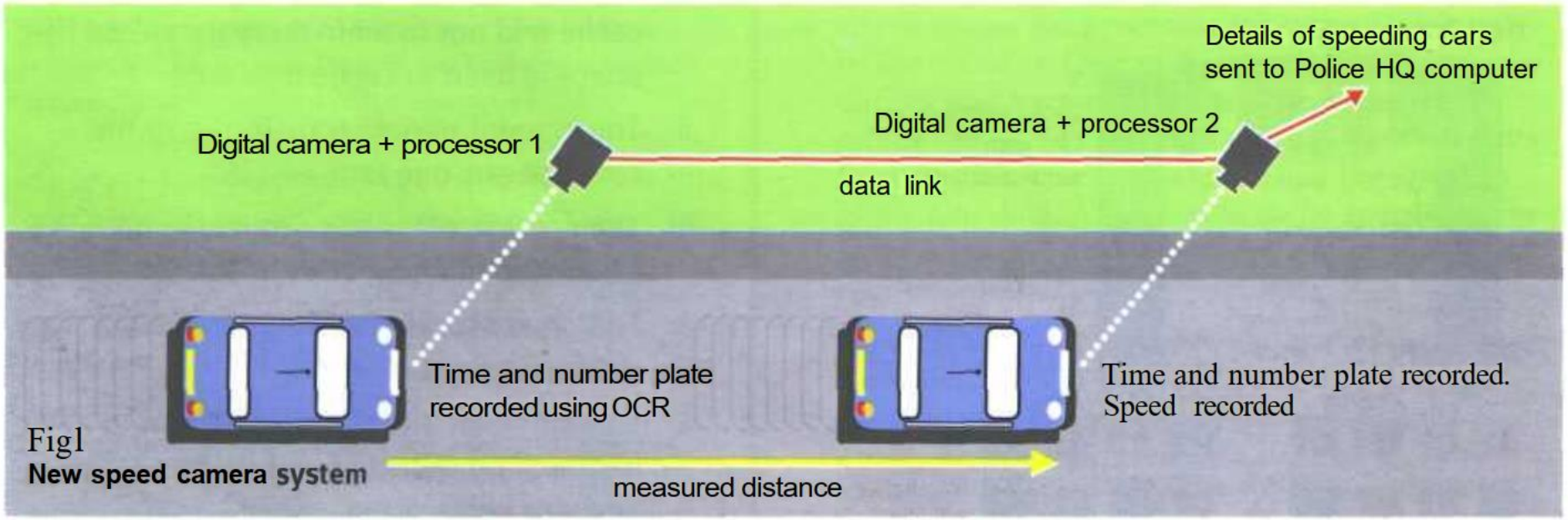

Fig1
New speed camera system

Test

Part 1: ANSWER:

1. What's computer?
2. How many steps are there in a process? What are they?
3. What's software?
4. What's hardware?
5. How many sections are there in a standard co mputer system?
   What are they?
6. What's the function of CPU?
7. What's the function of main memory?
8. What are peripherals?
9. What is OS?
10. What is GUI?

Part 3: Write about the following topic: **The benefits of Internet**.
To what extent do you agree with this view?
Give reasons for your answer and include any relevant examples from your own experience or knowledge

Part 2: TRANSLATE THESE SENTENCES INTO VIETNAMES

1. A standard computer system consists of three main sections: the central proces sing unit (CPU), the main memory and the peripherals.
2. The function of CPU is to execute program instructions and coordinate the
3. activities of all other units. it is the "brain" of the computer.
4. The nerve centre of a microcomputer is the central processing unit or CPU. This unit is built into a single microproceesor chip an intergrated circuit- which executes program instructions and supervises the computer's overall ope ration.
5. Information is processed and stored in computers as electrical signals. A comput er contains thousands of electronic circuits connected by switches.
6. 1s and 0s are grouped into eight digit codes that typically represent characters (letters, numbers and symbols). Eight bits together are called a byte.
7. In order to avoid astronomical figures and sums in the calculation of bytes, we u se units such as kilobytes, megabytes and gigabytes. One kilobyte is 1,024 byte s . One megabyte is equivalent to 1,024 KB, and one gigabyte is 1,024 MB.We use these units (KB, MB, GB) to describe the RAM memory, the storage capacit y to disks and the size of any application or document.
8. Ram (random access memory) is temporary i.e. Its information is lost when the c omputer is turned off. However, the Rom section (read only memory) is perman ent and contains instructions needed by the processor.The size of RAM is very i mportant if we want to increase the performance of a computer when several ap plications are open at the same time or when a document is very complex.
9. Information stored on magnetic disk can retrieved faster than if that same information were on tape.
10. A program written in one of the highlevel languages is called a source program

Unit 3

3 Part 1 of the text describes the system which predates the one shown in Fig 1. Does it contain any information that may help complete your explanation? Read it quickly to find out. Ignore any information which is not helpful to you.

Part 1

In the last ten years, police have installed speed trap units on many busy roads. These contain a radar set, a microprocessor and a camera equipped with a flash. The radar sends out a beam of radio waves at a frequency of 24 gigahertz. This is equivalent to a wavelength of 1.25 cms. If a car is moving towards the radar, the reflected signal will bounce back with a slightly smaller wavelength. If away from the radar, the waves will reflect with a slightly longer wavelength. The microprocessor within the unit measures the difference in wavelength between outgoing and returning signals and calculates the speed of each vehicle. If it is above the speed pre-set by the police, the camera takes a picture of the vehicle. The information is stored on a smart card for transfer to the police computer. The owner of the vehicle can then be traced using the Driver and Vehicle Licensing Centre database.

Unit 3

4 Part 2 describes the new system. Read it to complete the stages in your explanation.

Part 2

Some drivers have now got used to these traps. They slow down when they approach one to ensure that the camera is not triggered. They speed up again as soon as they have passed. This is known as 'surfing'. One way of outwitting such motorists is a new computerised system. This consists of two units equipped with digital cameras positioned at a measured distance apart. The first unit records the time each vehicle passes it and identifies each vehicle by its number plates using optical character recognition software. This information is relayed to the second unit which repeats the exercise. The microprocessor within the second unit then calculates the time taken by each vehicle to travel between the units. The registration numbers of those vehicles exceeding the speed limit are relayed to police headquarters where a computer matches each vehicle with the DVLC database. Using mailmerge a standard letter is then printed off addressed to the vehicle owner.

Unit 3

LANGUAGE WORK Present passive

Study these sentences.

1 The radar sends out a beam of radio waves.
2 The information is stored on a smart card.

In 1 the verb is active and in 2 it is passive, the Present passive. Why is this so? What difference does it make? In 1 the agent responsible for the action is included - the radar. In 2 the agent is not included although we know what it is - the microprocessor. The passive is often used to describe the steps in a process where the action is more important than the agent and where the agent is already known to the reader. If we need to add the agent, we can do so like this:

3 The information is stored on a smart card *by the microprocessor.*

Unit 3

PROBLEM-SOLVING 7 Assuming cost is not *a* problem, what computer applications would make today's cars safer, more comfortable, more secure and more efficient? List your ideas; then compare ideas with others in your group.

Here are 10 terminologies related to computer applications:

1. **(UI):** The visual and interactive elements of a software application that allow users to interact with and control the program.
2. **:** The overall experience a user has while using a software application, including factors like usability, accessibility, and user satisfaction.
3. **(GUI):** A type of user interface that uses graphical elements, such as icons, buttons, and windows, to enable user interaction with a software program.
4. **(SaaS):** A software distribution model where applications are hosted in the cloud and accessed via the internet, often on a subscription basis.
5. **Software:** Software whose source code is made available to the public, allowing anyone to view, modify, and distribute it.
6. **API** A set of rules and protocols that allow different software applications to communicate with each other and share data or functionality.
7. **MS):** Software that manages and organizes data in a structured manner, allowing for efficient storage, retrieval, and manipulation of data.
8. **:** A system that tracks and manages changes to source code and other files, enabling collaboration among developers and the ability to roll back to previous versions.
9. Software that acts as an intermediary between different applications or software components, facilitating communication and data exchange between them.
10. The practice of protecting computer systems, networks, and data from security breaches, unauthorized access, and other digital threats.

SPECIALIST READING

A Find the answers to these questions in the following text.

1 What tool is often used in data mining?
2 What AI method is used for the following processes?
   a Separate data into subsets and then analyse the subsets to divide them into further subsets for a number of levels.
   b Continually analyse and compare data until patterns emerge.
   c Divide data into groups based on similar features or limited data ranges.
3 What term is used for the patterns found by neural networks?
4 When are clusters used in data mining?
5 What types of data storage can be used in data mining?
6 What can an analyst do to improve the data mining results?
7 Name some of the ways in which data mining is currently used.

Table A

a	Data mining	c	Cleansed data
b	AI	d	Data warehouse

Table B

i	Storage method of archiving large amounts of data to make it easy to access
ii	Data free from duplicate and erroneous information
iii	A process of filtering through large amounts of raw data for useful information
iv	A computing tool that tries to operate in a way similar to the human brain

DATAMINING

Data mining is simply filtering through large amounts of raw data for useful information that gives businesses a competitive edge. This information is made up of meaningful patterns and trends that are already in the data but were previously unseen.

The most popular tool used when mining is artificial intelligence (AI). AI technologies try to work the way the human brain works, by making intelligent guesses, learning by example, and using deductive reasoning. Some of the more popular AI methods used in data mining include neural networks, clustering, and decision trees.

Neural networks look at the rules of using data, which are based on the connections found or on a sample set of data. As a result, the software continually analyses value and compares it to the other factors, and it compares these factors repeatedly until it finds patterns emerging. These patterns are known as rules. The software then looks for other patterns based on these rules or sends out an alarm when a trigger value is hit.

Clustering divides data into groups based on similar features or limited data ranges. Clusters are used when data isn't labelled in a way that is favourable to mining. For instance, an insurance company that wants to find instances of fraud wouldn't have its records labelled as fraudulent or not fraudulent. But after analysing patterns within clusters, the mining software can start to figure out the rules that point to which claims are likely to be false.

Decision trees, like clusters, separate the data into subsets and then analyse the subsets to divide them into further subsets, and so on (for a few more levels). The final subsets are then small enough that the mining process can find interesting patterns and relationships within the data.

Once the data to be mined is identified, it should be cleansed. Cleansing data frees it from duplicate information and erroneous data. Next, the data should be stored in a uniform format within relevant categories or fields. Mining tools can work with all types of data storage, from large data warehouses to smaller desktop databases to flat files. Data warehouses and data

Unit 3

2 Mark the following as True or False:

a Data mining is a process of analysing known patterns in data.

b Artificial intelligence is commonly used in data mining.

c In data mining, patterns found while analysing data are used for further analysing the data.

d Data mining is used to detect false insurance claims.

e Data mining is only useful for a limited range of problems.

Unit 4

LISTENING **3** Study this description and answer these questions.

1 How do digital cameras differ from conventional cameras?
2 How do they work?
3 What are their advantages and disadvantages compared to conventional cameras?

HOW a digital camera works

Digital cameras store images on memory cards so pictures can be transferred easily to a computer.

A lens focuses the image on to a CCD unit or Charge-Coupled Device where the film would normally be.

So you can aim the camera accurately, there is an optical viewfinder.

So you can play back the images and decide which to keep and which to re-shoot, the image is passed to a small LCD screen on the back of the camera.

Fig 3
Canon PowerShot, G1

4 Listen to Part 1 of this discussion between A and B and complete this table of similarities and differences between conventional and digital cameras. Tick (✓) or cross (✗) the boxes.

Feature	Digital	Conventional
lens		
viewfinder		
requires chemical processing		
film		
transfer images directly to PC		
can delete unsatisfactory images		

- https://www.youtube.com/@Dr.HaiTran
- https://www.youtube.com/playlist?list=PLIgbEZsX8zsh-hkUrPEdynI3Rv2IZHVox

Unit 4

5 Listen to Part 2 of the dialogue to list the disadvantages of digital cameras.

6 Now listen to both parts again to find the answers to these questions:

1 What does a CCD contain?
2 What is a pixel?
3 How can you view pictures before they are downloaded to a PC?
4 When you have downloaded the images, what can you do with them?
5 Is special software required?
6 Why is the resolution important?
7 What does the capacity of a digital camera depend on?
8 Why is it worth getting a rechargeable battery?

Title: Understanding Peripheral Devices in Computing

- Introduction: In the world of computers, peripheral devices play a crucial role in expanding the functionality and usability of computer systems. These external devices connect to a computer and provide input, output, or storage capabilities, enhancing the user experience and allowing users to interact with their machines in various ways. This essay explores the significance of peripheral devices in computing, their types, and their diverse applications.
- Types of Peripheral Devices: Peripheral devices come in several categories, each serving a unique purpose:

Input Devices: Keyboard: The most common input device, used for typing text and entering commands. Mouse: Enables users to interact with graphical user interfaces and navigate through screens. Scanner: Converts physical documents or images into digital formats. Webcam: Captures video and images, facilitating video conferencing and content creation.

Output Devices: Monitor/Display: Provides visual feedback by displaying text, graphics, and videos. Printer: Produces hard copies of digital documents and images. Speakers: Output sound for multimedia applications, music, and system alerts.

Storage Devices: Hard Disk Drive (HDD): Stores data on a magnetic disk, offering high-capacity storage. Solid-State Drive (SSD): Uses flash memory for faster data access and improved durability. USB Flash Drive: Portable storage devices for transferring data between computers.

Communication Devices:

1. Network Interface Card (NIC): Connects computers to networks, enabling internet access and local area network (LAN) communication.
2. Modem: Facilitates internet connectivity through telephone or cable lines.

Multimedia Devices:

1. Headphones: Provide audio output and enable private listening.
2. Microphone: Captures audio input, crucial for voice calls and recording.

- Applications of Peripheral Devices: Peripheral devices find applications in various domains, including:

Business and Productivity: Keyboards and mice for data entry and navigation. Printers for generating reports and documents. Scanners for digitizing paperwork.

Entertainment: Monitors and speakers for gaming and multimedia experiences. Webcams for video conferencing and live streaming.

Data Storage and Backup: Hard drives and SSDs for data storage. USB flash drives for portable data transfer.

Communication: Network interface cards for internet connectivity. Modems for broadband access.

- Conclusion: Peripheral devices are essential components of modern computing systems. They expand the capabilities of computers, enabling users to interact with digital content, store data, communicate over networks, and enjoy multimedia experiences. Understanding the types and applications of peripheral devices is crucial for maximizing the functionality and utility of computer systems in both personal and professional settings. As technology continues to evolve, peripheral devices will likely become even more integral to our daily computing experiences.

Quiz

- "True / False":

1. **Peripheral devices do not affect the usability of computers.**
2. **The keyboard is the most common input device.**
3. **A scanner can only convert text into digital formats.**
4. **The monitor is an output device used to display information.**
5. **Hard Disk Drives (HDD) and Solid-State Drives (SSD) are both storage devices.**
6. **A Network Interface Card (NIC) helps connect computers to networks.**
7. **Speakers are only used to output sound for multimedia applications.**
8. **Peripheral devices have no applications in the entertainment field.**
9. **USB flash drives are a type of portable storage device.**
10. **Peripheral devices will become less important in the future.**


B D A T A S T R U C T U R E Z C S U T O F T S P
W Q H W A R E F A C T O R I N G U L L Z S U W R
C E R X Y Z X X I P M O D U L A R C O D E A E O
X D H P Y O G J Q X J G S M A R J D N K S G J G
U I W C D M B I O I F Y K L P F J M N I A W N R
P I B I T P D J H U V Q N R I W S E N U P F F A
F B G P Y A Y O E G J U V K B J S G G P D W D M
E P O C S C R E E C A X Q B S V C N S N H F G M
H Q L S C H F C O W T P G A K J A U K O J H N A
C L H T V O P D S A F S C X U L D C X A E Y K T
O Q F C R R T A F T T P H R D O A L V A N Z T I
N Q O M J I T F U S R T M E C B B A O Y M B Y C
S L S F F I L E J N W K L O L M S R X E H L D T
T A D Y I G L I H O I I D L K C N L B K E W M H
A N N J I U Y K V D P E A I R O G O V Z H D Y I
N O L O N H E A N M R C C I N O O L I H E E Z N
T I K B V N S N O W S W P E X P R E S S I O N K
S T S L F F U C E T P T O A G B I Q X R W V Q I
N I W T H V M P T H M L M T J G V S M L R L J N
F D K Z D W T I T C B W T X L N H W I V E A C G
Z N U Z W K D M U J N I F V M I E G N L W V B Q
L O A L S E L E T N U Y X C C D C C T T C A S M
P C K I L O O P S A V I T U R O S D A G E Y I U
A L W Y P E P Y T A T A D D B C X W U E H L E J

Unit 4

LANGUAGE **WORK** Revision: Comparison and contrast

Study this comparison of digital and conventional cameras.

FEATURE	DIGITAL	CONVENTIONAL
lens	✓	✓
viewfinder	✓	✓
requires chemical processing	✗	✓
film	✗	✓
transfer images directly to PC	✓	✗
can delete unsatisfactory images	✓	✗

Note how we can compare and contrast these types of cameras.

Comparing features which are similar:

1 *Both* cameras have lenses.
2 *Like* the conventional camera, the digital camera has a viewfinder.

Contrasting features which are different:

3 The conventional camera requires chemical processing *whereas* the digital camera does not.
4 The conventional camera uses film *unlike* the digital camera.
5 With a digital camera you can transfer images directly to a PC *but* with a conventional camera you need to use a scanner.
6 With digital cameras you can delete unsatisfactory images; *however* with conventional cameras you cannot.

Quiz

1. What is the primary purpose of a comparison and contrast essay? a) To persuade the reader b) To inform the reader c) To entertain the reader d) To confuse the reader
2. When comparing two or more subjects, what should you focus on to create a meaningful comparison? a) Their similarities b) Their differences c) Their individual characteristics d) Their chronological history
3. Which of the following is an example of a "compare" transition word or phrase? a) However b) On the other hand c) In contrast d) Similarly
4. When creating a Venn diagram to compare and contrast two subjects, what do overlapping circles represent? a) Similarities between the subjects b) Differences between the subjects c) Background information about the subjects d) Irrelevant details
5. Which of the following is an example of a "contrast" transition word or phrase? a) Likewise b) Nevertheless c) Additionally d) In the same way
6. In a compare and contrast essay, what is the purpose of the thesis statement? a) To summarize the essay's main points b) To introduce the topic of the essay c) To present the main argument or focus of the essay d) To provide a list of similarities and differences
7. When comparing and contrasting two texts, what should you analyze to identify differences and similarities? a) The author's personal life b) The publication date of the texts c) The themes, characters, and plot elements d) The length of the texts
8. What is the term for a type of essay that examines the similarities and differences between two or more items, ideas, or concepts? a) Argumentative essay b) Descriptive essay c) Compare and contrast essay d) Expository essay
9. When comparing and contrasting, what should you do if the differences between the subjects outweigh the similarities? a) Focus only on the similarities b) Focus only on the differences c) Provide a balanced discussion of both similarities and differences d) Avoid discussing the subjects altogether
10. Which of the following is NOT a common organizational structure for a compare and contrast essay? a) Block method b) Point-by-point method c) Chronological method d) Alternating method

Unit 4

7 Study this data about storage devices. Then complete the blanks in the following sentences comparing and contrasting the different types.

Device	Read/Write	Speed	Media Capacity	Media Removable	Cost
Floppy disk	Read and write	Slow	Very low	Yes	Low
Fixed hard disk	Read and write	Fast	Very high	No	Medium
Removable hard disk	Read and write	Medium to fast	High	Yes	Medium
CD-ROM	Read only	Medium	High	Yes	Low
CD-R	Recordable	Slow	High	Yes	Medium
CD-RW	Read and write	Medium	High	Yes	Medium
CD-MO	Read and write	Medium	High	Yes	High
DVD-ROM	Read only	Medium	High	Yes	Medium
DVD-RAM	Read and write	Medium	Very high	Yes	High
Magnetic Tape	Read and write	Very slow	High	Yes	Medium

Unit 4

1. What is Currie Munce's main aim?
2. How quickly did the possible areal density of hard disks increase in the 1990s?
3. How long does Munce think magnetic recording technology will continue to make. rapid advances in capacity?
4. What problem does he predict for magnetic storage?
5. What is the predicted limit for discrete bit magnetic storage capacity?
6. What storage technologies might replace current magnetic systems?
7. What is the advantage of holographic storage being three-dimensional?
8. What improvements are predicted due to the fast access rates and transfer times of holographic storage?
9. What is predicted to be the most important high capacity removable storage media in the next 10 years?
10. What method of software distribution is likely to replace optical disks?

Unit 5 - https://www.youtube.com/@Dr.HaiTran/playlists

1 Computer Architecture
2 HW Installation & Maintenance
3 Info Tech Applications (1)
4 Info Tech Applications (2)
5 Multi-user Operating System
6 Network Technology
7 Software Development Life Cycle
8 Standalone Computer System Support
9 Software Development Procedural Lang.
10 Data Communications
11 Information Systems & Services
12 Systems Development
13 Communication
14 Project Management
15 Mathematics for Computing

a LAN Topologies
b PC Bus Architectures
c Modems
d How to connect printers
e Unix Operating System
f Pascal
g Writing a program
h Creating a database
i Maintenance of desktops
j Wordprocessing and other office applications
k Binary system
I Making presentations

LANGUAGE WORK Revision: **Past simple questions**

Study these examples of questions about the past.

Asking about quantity:
How many days a week did you study?
How much programming did you do?

Asking about time:
When did you study Communication?

Asking about people:
Who taught you Maths?
Whose classes did you most enjoy?

Asking about things:
What made you choose computing support?
What did you like most?

Asking about actions:
What did you do on Fridays?
What happened on Monday mornings?

Computer Use and Applications

RIMS:

1 To introduce complete beginners to computer systems.

2 To give a basic foundation in computer technology and to introduce appropriate terminology.

3 To give a description of the major components (hardware and software) which make up a computer system.

4 To show how computer systems are used in commerce and industry.

5 To give practical experience in using various systems.

DESCRIPTION:

The course is in four parts.

Part 1 Introduction to college computer science facilities, including how to access the computers, the Unix filestore, using email, the editor and simple network commands.

Part 2 The basic structure of computer hardware and systems software. Topics include compilers vs interpreters and memory management.

Part 3 Introduces some more advanced software tools, documentation tools and language processors.

Part 4 Discusses various uses of computers including spreadsheets, databases, communications and impacts on society.

STAFF:

Dr Peter Jones

METHOD AND FREQUENCY OF CLASS:

Two lectures per week with practical exercises once every two weeks.

ASSESSMENT:

Three formal coursework assignments.

Q & A

- How many days a week did you study?
- I typically study five days a week, dedicating specific days to different subjects. On weekdays, I focus on my core classes, like math and science, ensuring I stay on top of the material. I usually reserve weekends for reviewing and catching up on any assignments I may have missed during the week. This routine helps me maintain a balanced schedule and prevents last-minute cramming. Overall, having a consistent study plan has really improved my understanding and retention of the subjects.

Word Scrambler

1. GOPRRAM _____
2. PUMOCETR RNTWOKE _____
3. EROTCPMU MESSTY _____
4. ORPEUMCT EGGALANU _____
5. PTANPILCIOA OFEWARTS _____
6. OTFSRAEW _____
7. ORCUTPME ESTYMS _____
8. TFOARSWE _____
9. AHDRWAER _____
10. ERNCALT IRSCOSGNEP UNIT _____

LANGUAGE WORK Revision: **Past simple questions**

Study these examples of questions about the past.

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Asking about things:
What made you choose computing support?
What did you like most?

Asking about actions:
What did you do on Fridays?
What happened on Monday mornings?

IT Terms

- **15 IT Terms Everyone In Tech Recruitment Should Know – IT & Tech Recruitment Insights**

Unit 6

LANGUAGE WORK *-ing* form (1) as a noun; after prepositions

We can use the *-ing* form of the verb as a noun. It can be the subject, object, or complement of a sentence. For example:

1 *Managing* the computer's resources is an important function of the operating system.
2 The operating system starts *running* the user interface as soon as the PC is switched on.
3 Another function of the operating system is *executing* and *providing* services for applications software.

The *-ing* form is also used after prepositions. This includes *to* when it is a preposition and not part of the infinitive. For example:

4 *Without* the user *being* aware of the details, the operating system manages the computer's resources.
5 We begin *by focusing* on the interaction between a user and a PC operating system.
6 We look forward to *having* cheaper and faster computers.

SPECIALIST READING

A Find the answers to these questions in the following text.

1 What did Linus Torvalds use to write the Linux kernel?
2 How was the Linux kernel first made available to the general public?
3 What is a programmer likely to do with source code?
4 Why will most software companies not sell you their source code?
5 What type of utilities and applications are provided in a Linux distribution?
6 What is X ?
7 What graphical user interfaces are mentioned in the text?

LINUX

Linux has its roots in a student project. In 1992, an undergraduate called Linus Torvalds was studying computer science in Helsinki, Finland. Like most computer science courses, a big component of it was taught on (and about) Unix. Unix was the wonder operating system of the 1970s and 1980s: both a textbook example of the principles of operating system design, and sufficiently robust to be the standard OS in engineering and scientific computing. But Unix was a commercial product (licensed by ATEtT to a number of resellers), and cost more than a student could pay.

Annoyed by the shortcomings of Minix (a compact Unix clone written as a teaching aid by Professor Andy Tannenbaum) Linus set out to write his own 'kernel' — the core of an operating system that handles memory allocation, talks to hardware devices, and makes sure everything keeps running. He used the GNU programming tools developed by Richard Stallman's Free Software Foundation, an organisation of volunteers dedicated to fulfilling Stallman's ideal of making good software that anyone could use without paying. When he'd written a basic kernel, he released the source code to the Linux kernel on the Internet.

Source code is important. It's the original from which compiled programs are generated. If you don't have the source code to a program, you can't modify it to fix bugs or add new features. Most software companies won't sell you their source code, or will only do so for an eye-watering price, because they believe that if they make it available it will destroy their revenue stream.

What happened next was astounding, from the conventional, commercial software industry point of view — and utterly predictable to anyone who knew about the Free Software Foundation. Programmers (mostly academics and students) began using Linux. They found that it didn't do things they wanted it to do - so they fixed it. And where they improved it, they sent the improvements to Linus, who rolled them into the kernel. And Linux began to grow.

There's a term for this model of software development; it's called Open Source (see www.opensource.org/ for more information). Anyone can have the source code - it's free (in the sense of free speech, not free beer). Anyone can contribute to it. If you use it heavily you may want to extend or develop or fix bugs in it — and it is so easy to give your fixes back to the community that most people do so.

An operating system kernel on its own isn't a lot of use; but Linux was purposefully designed as a near-clone of Unix, and there is a lot of software out there that is free and was designed to compile on Linux. By about 1992, the first 'distributions' appeared.

A distribution is the Linux-user term for a complete operating system kit, complete with the utilities and applications you need to make it do useful things — command interpreters, programming tools, text editors, typesetting tools, and graphical user interfaces based on the X windowing system. X is a standard in academic and scientific computing, but not hitherto common on PCs; it's a complex distributed windowing system on which people implement graphical interfaces like KDE and Gnome.

As more and more people got to know about Linux, some of them began to port the Linux kernel to run on non-standard computers. Because it's free, Linux is now the most widely-ported operating system there is.

[Adapted from 'Smooth Operator' by Charles Stross, Computer Shopper magazine, November 1998]

B Re-read the text to find the answers to these questions.

1 Match the terms in Table A with the statements in Table B.

Table A

a	Kernel
b	Free Software Foundation
c	Source code
d	Open Source
e	A distribution
f	X

Table B

i	A type of software development where any programmer can develop or fix bugs in the software
ii	The original systems program from which compiled programs are generated
iii	A complete operating system kit with the utilities and applications you need to make it do useful things
iv	A standard distributed windowing system on which people implement graphical interfaces
v	An organisation of volunteers dedicated to making good software that anyone could use without paying
vi	The core of an operating system that handles memory allocation, talks to hardware devices, and makes sure everything keeps running

2 Mark the following statements as True or False:

a Linux was created in the 1980s.
b Minix was created by a university student.
c Linux is based on Unix.
d Minix is based on Unix.
e Linux runs on more types of computer than any other operating system.

Quiz

1. **Question: Which of the following is an open-source operating system?**
    1. A) Windows 10
    2. B) macOS
    3. C) Ubuntu Linux
    4. D) Android
2. **Question: What is the primary purpose of an operating system?**
    1. A) Running applications
    2. B) Managing hardware resources
    3. C) Storing files
    4. D) All of the above
3. **Question: Which file system is commonly used in Windows operating systems?**
    1. A) ext4
    2. B) NTFS
    3. C) HFS+
    4. D) ext3
4. **Question: What is the main function of a device driver in an operating system?**
    1. A) Manage user interfaces
    2. B) Communicate with hardware devices
    3. C) Run applications
    4. D) Provide security features
5. **Question: Which of the following is a preemptive multitasking operating system?**
    1. A) Windows 98
    2. B) MS-DOS
    3. C) macOS
    4. D) Linux

Writing tasks

1. **Compare and Contrast Operating Systems:** Ask students to write a detailed comparison and contrast essay between two popular operating systems, such as Windows and Linux. They should explore factors like user interface, system requirements, security features, and application compatibility.
2. **History of Operating Systems:** Have students research and write a historical overview of operating systems. They should cover the evolution from early systems like MS-DOS to modern ones like Windows 10 or the latest Linux distributions. This task encourages them to delve into the development and milestones of operating systems.
3. **Troubleshooting Guide for Common OS Issues:** Task students with creating a troubleshooting guide for common operating system issues. They should provide step-by-step instructions for problems like system crashes, software conflicts, or network connectivity issues. This exercise helps improve technical writing skills and problem-solving abilities.
4. **The Future of Operating Systems:** Encourage students to speculate on the future of operating systems. They can explore emerging technologies and trends, such as cloud computing, artificial intelligence integration, or changes in user interfaces. This task allows them to think critically about the direction of operating systems.
5. **Operating System Security Measures:** Request a comprehensive essay on the security features of operating systems. Students should discuss built-in security measures, such as firewalls and encryption, as well as best practices for users to enhance system security. This task combines technical knowledge with effective communication skills.
6. **Interview with an Operating System Developer:** Challenge students to create a fictional interview with a developer or engineer involved in designing an operating system. They should craft questions that touch on the development process, challenges faced, and the future vision of the operating system. This exercise encourages creativity and research skills.

Unit 7

1 window
2 icon
3 menu
4 system tray
5 taskbar
6 submenu
7 desktop
8 button

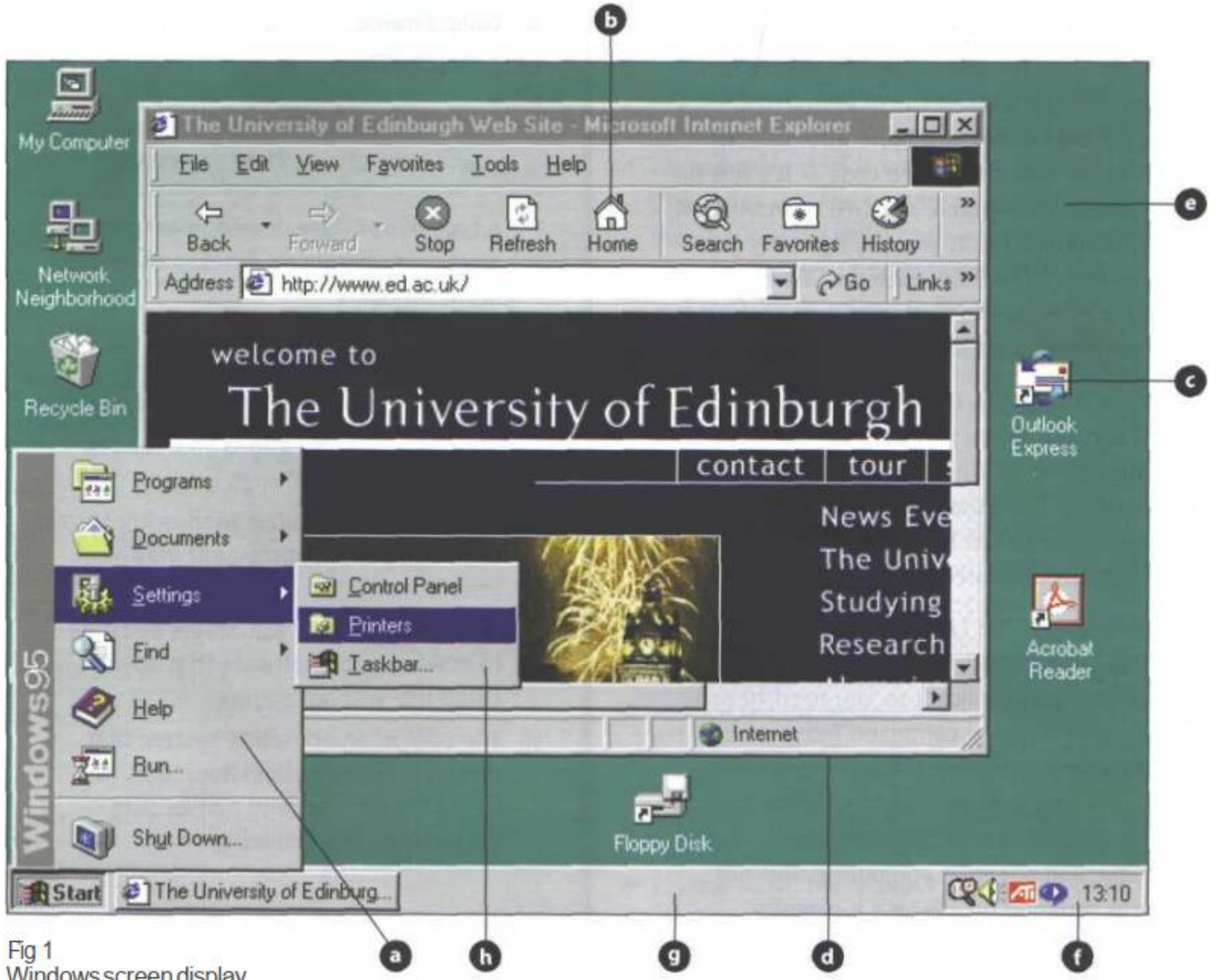
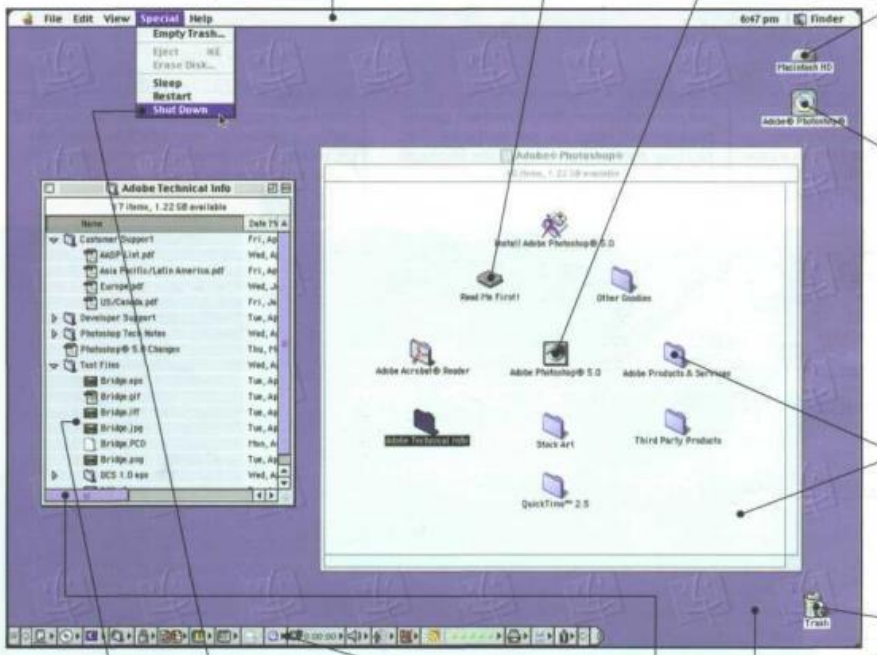


Fig 1
Windows screen display

Unit 7

2 Study this second example of a GUI.

1 How does it differ from Fig 1?
2 In what ways is it the same?



Menu bar
Just about all programs display a menu bar across the top of the screen, including the 'Finder'. The menu bar will change, depending on the program you're running at the time.

Document
This is a text file which tells us something about the contents of this CD-ROM. You can read it by simply double-clicking on it - your iMac will then automatically find the program needed to open it.

Application
This is an application, or program icon. Double-clicking on it will start the program. It's not always obvious whether an icon is for a document or a program, but you soon get to be able to spot these things.

Folder
This is a folder icon, and these all tend to look the same - like a kind of 3D view of a suspension file. Sometimes they're adorned with other graphics, but they're usually pretty easy to spot. Double-clicking on a folder icon displays that folder's contents in another window, which is what we've done here.

Hard Disk icon
Folders, files, documents and other items are displayed as little icons like this. This one, in fact, represents your iMac's internal hard disk.

CD-ROM icon
Your hard disk icon (and Wastebasket icon) may be the only ones you see on your desktop. If you insert a CD-ROM, though, it will appear as an icon on your desktop too. We've double-clicked on it to display its contents. To eject a CD, by the way, you have to drag its icon onto the Wastebasket - you can't just press the CD-ROM drive button. If you do, you'll be waiting an awful long time.

Folder window
When you double-click on a folder or a disk drive, its contents are displayed in a window like this one. These contents can be documents, programs or other folders.

Wastebasket icon
The Wastebasket is where you throw things you no longer need. It doesn't empty straight away, (though as you can see, ours is so full the lid's fallen off), so you can change your mind if you have to. When you want to eject a disk, be it a CD-ROM or a floppy disk (if you've got a floppy disk drive attached), you drag its icon on to the Wastebasket and the iMac will spit it out automatically.

Fig 2
Mac GUI

List view
This is another folder window, but this time we're looking at the contents in 'list' view. Otherwise, it's the same as the window next to it - a 'window' on a folder, basically. You can nest folders many layers deep, in case you're wondering, and you're likely to get confused long before your iMac does - try to keep your filing system as simple as possible.

Menu/menu option
To open a menu, click on its name in the menu bar. This displays a drop-down list like the one you see here. To choose one of the menu options, just click on it (the options are highlighted as the mouse pointer moves over them to help you get the right one). Don't forget to always shut down your iMac via this menu, NOT by simply switching the power off.

Control Strip
The Control Strip offers quick access to many of your iMac's settings like the speaker volume, sound input and CD player controls. Until you've found out what these gadgets do, you can 'hide' it by clicking on the small ribbed area to the far right. This reduces it to a little handle in the bottom left-hand corner of the screen. Click this handle if you want to display the Control Strip again.

Scrollbar
You'll see these gadgets whenever the contents of a folder won't fit in the window. You click on either the horizontal or vertical scroll arrows to display more of the contents - either that, or drag on the little blue 'scroll box'.

Desktop pattern
This background image can be swapped for many more via the Appearance control panel. You can use a repeating 'pattern' like this, or a single image - a scanned photograph for example.

Unit 7

LANGUAGE WORK — Verbs + object + infinitive; Verbs + object + to-infinitive

New developments in computing are often designed to make something easier. These verbs are often used to describe such developments:

allow let
enable permit
help

Study these examples:

1 A GUI *lets you point* to icons and click a mouse button to execute a task.
2 A GUI *allows you to use* a computer without knowing any operating system commands.
3 The X Window System *enables Unix-based computers to have* a graphical look and feel.
4 Voice recognition software *helps disabled users (to) access* computers.

***Allow, enable* and *permit* are used with this structure:**

verb + object + to-infinitive

***Let* is used with this structure:**

verb + object + infinitive

***Help* can be used with either structure.**

READING 3

Study this diagram of the Windows Desktop and answer these questions about its features.

1 What does Outlook Express let you do?
2 Which feature shows you current programs?
3 How do you read the date?
4 What is *My Briefcase* for?
5 Which background colour is most common?
6 Which feature shows other computers networked with yours?
7 Which feature lets you see which files are stored on your PC?
8 What is the program that helps you get on the Internet?
9 How do you delete files permanently?

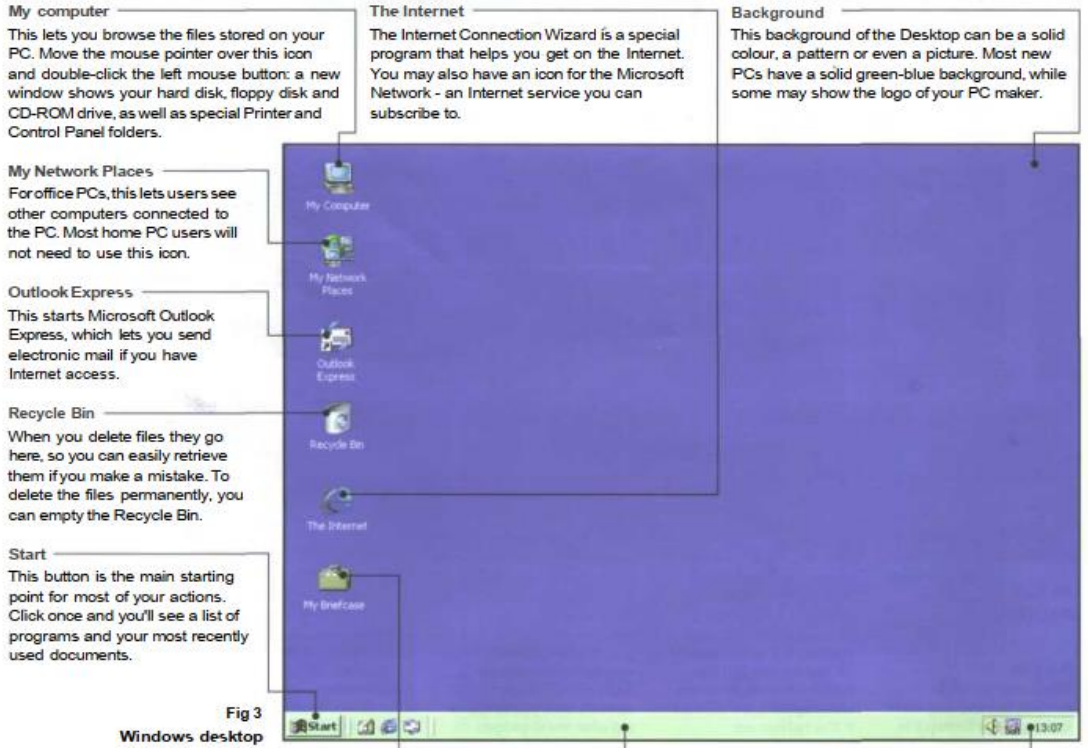


Fig 3
Windows desktop

Unit 8

READING **4** Work in groups. Read paragraph A and additional paragraphs selected by your teacher. Complete this note-taking frame for each text you read.

	B	C	D
Users			
Use			
Program types			
Data input			
Output			

A The system consists of 5 networked PCs, one in each of the consulting rooms, one in the Practice Manager's office and the other in Reception alongside the file server. (Each PC has its own laser printer.) There is also a dot-matrix printer in Reception for prescriptions as these are printed on special paper. All users have access to Microsoft Office.

B Doctors use the system to access a number of databases. The most important holds the records of all the patients in the practice. These files contain personal details and the medical history of the patient. The doctor can call up the appointments book prior to the consultation. By clicking on the patient's name, they have immediate access to that patient's records. At the end of each consultation, the doctor enters brief case notes including the diagnosis and treatment. This database can also be used to produce statistics for research and reports.

Doctors can also access a drugs database on CD-ROM which provides prescribing information on thousands of drugs including their suitability for different categories of patients. This is updated every month. Another database is a conditions dictionary which provides information on a wide range of problems.

C Reception staff use specially tailored software developed from a database to enter all appointment dates and times for each doctor. The program generates daily lists of appointments and can be accessed by the doctors. Reception use the patient database to identify children and old people who are due to have vaccinations. They then use mailmerging to create letters asking for appointments to be made.

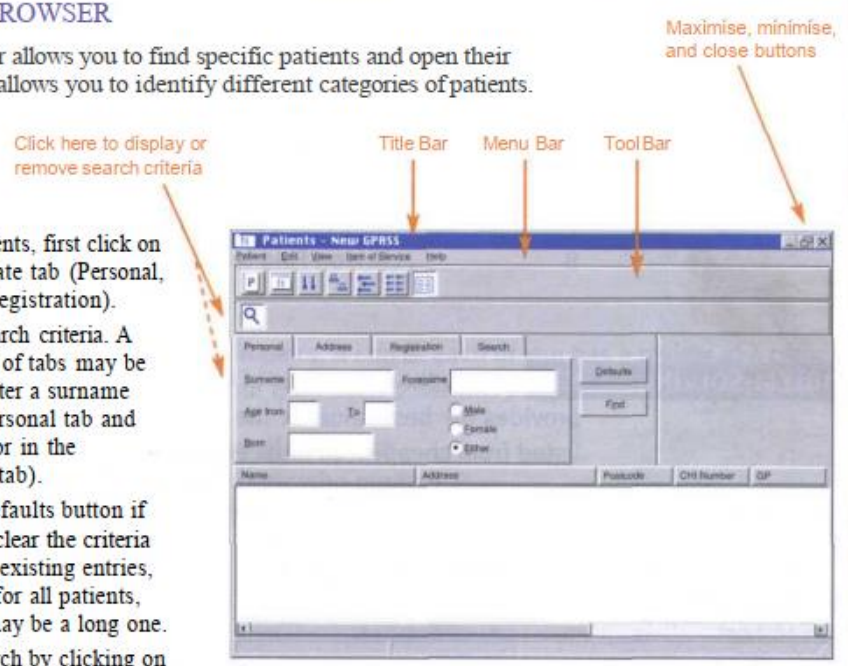
D The Practice Manager uses a payroll package based on a spreadsheet to calculate salaries for each employee of the health centre. She enters all income and expenditure to produce practice accounts. She uses a database to produce a monthly rota of which doctors are on call in evenings and at weekends. This rota is available over the network to all users.

LANGUAGE WORK **Instructions/complex instructions**

Study this extract from an instruction manual for software for doctors in a health centre.

PATIENT BROWSER

Patient Browser allows you to find specific patients and open their records. It also allows you to identify different categories of patients.



1 To find patients, first click on the appropriate tab (Personal, Address or Registration).
2 Enter the search criteria. A combination of tabs may be used (e.g. enter a surname under the Personal tab and select a doctor in the Registration tab).
3 Select the Defaults button if you wish to clear the criteria boxes of any existing entries, or to search for all patients, but the list may be a long one.
4 Start the search by clicking on the Find button.

Fig 3
GPASS

We make simple instructions using the infinitive:

Click on the appropriate tab.
Enter the search criteria.

We can add an explanation using the to-infinitive or *by* + *-ing:*

To find patients, click on the appropriate tab.
Click on the Find button *to start* the search.
Start the search *by clicking* on the Find button.

We can put the instructions in order using sequence words:

First click on the appropriate tab.
Then enter the selection criteria.
Finally click on the Find button.

We can link two instructions and emphasise their order like this:

Having entered the selection criteria, click on the Find button.
Once the selection criteria *have been entered*, click on the Find button.

Look at


SERVER
HARDWARE
PROJECT
ARCHITECTURE
COMMUNICATION
INFORMATION
COMPUTER
STANDARD
DATABASE
MANAGEMENT
INTERNET
INFORMATION
SECURITY
DATA
TECHNOLOGY
SOFTWAR
BROWSE
VENDOI
SUPPORT
INFORMATION SYSTEM
BUSINESS
MOBILITY
CONCEPT
DEVELOPMENT
SCIENCE
MULTIMEDIA


HẾT
GIỜ
START

Quiz

1. In object-oriented programming, encapsulation helps in _____ data and methods within a class, preventing direct access from outside.
2. The primary purpose of a firewall is to establish a barrier between a private network and the _____ network, controlling incoming and outgoing network traffic.
3. To enhance website security, it is crucial to regularly update and patch _____ to address vulnerabilities and protect against potential threats.
4. In agile development, the _____ is a collaborative event where team members discuss and plan upcoming work, ensuring alignment with project goals.
5. The process of converting high-level programming code into machine code is known as _____, and it is a crucial step in the software development life cycle.

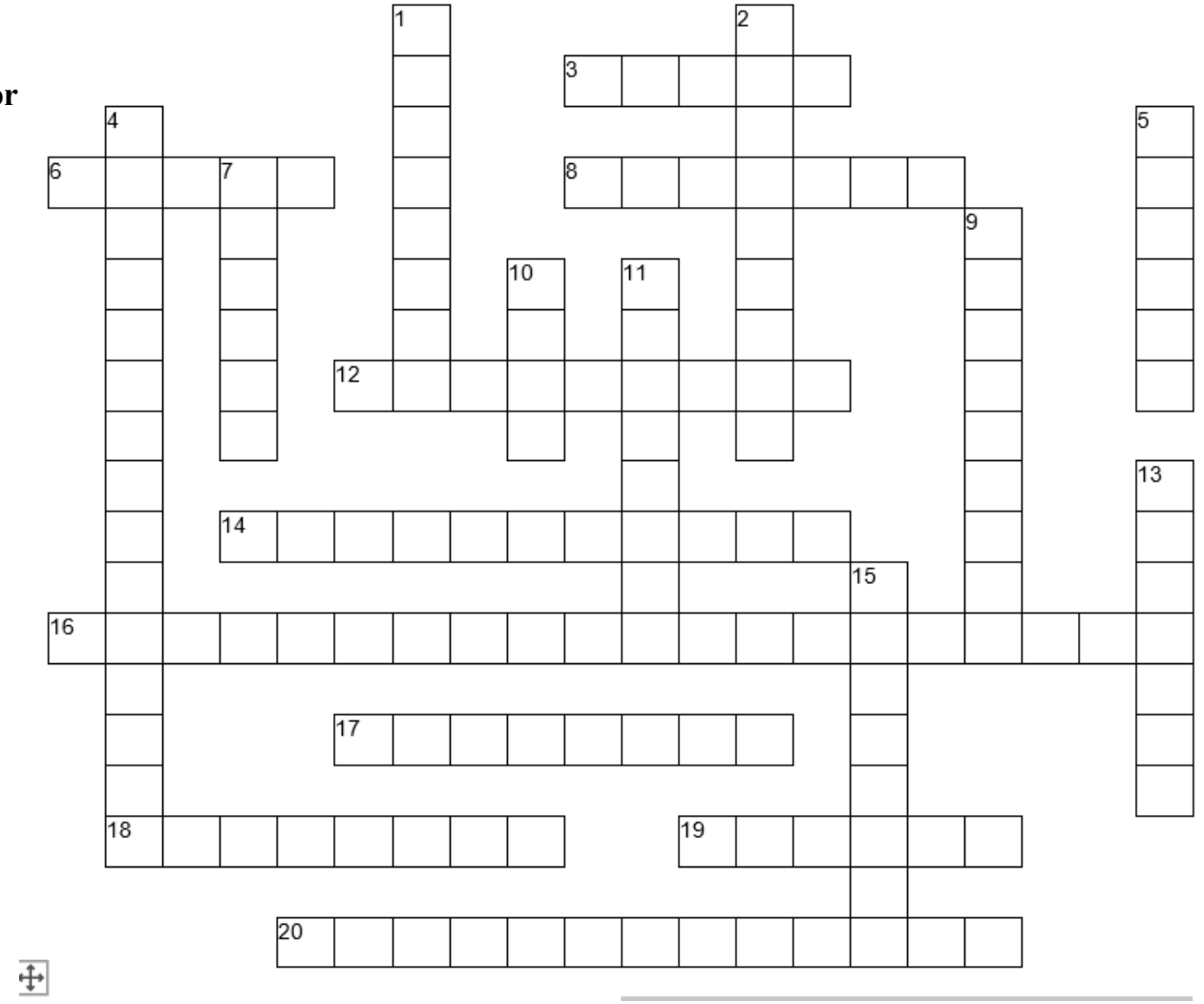
Crossword

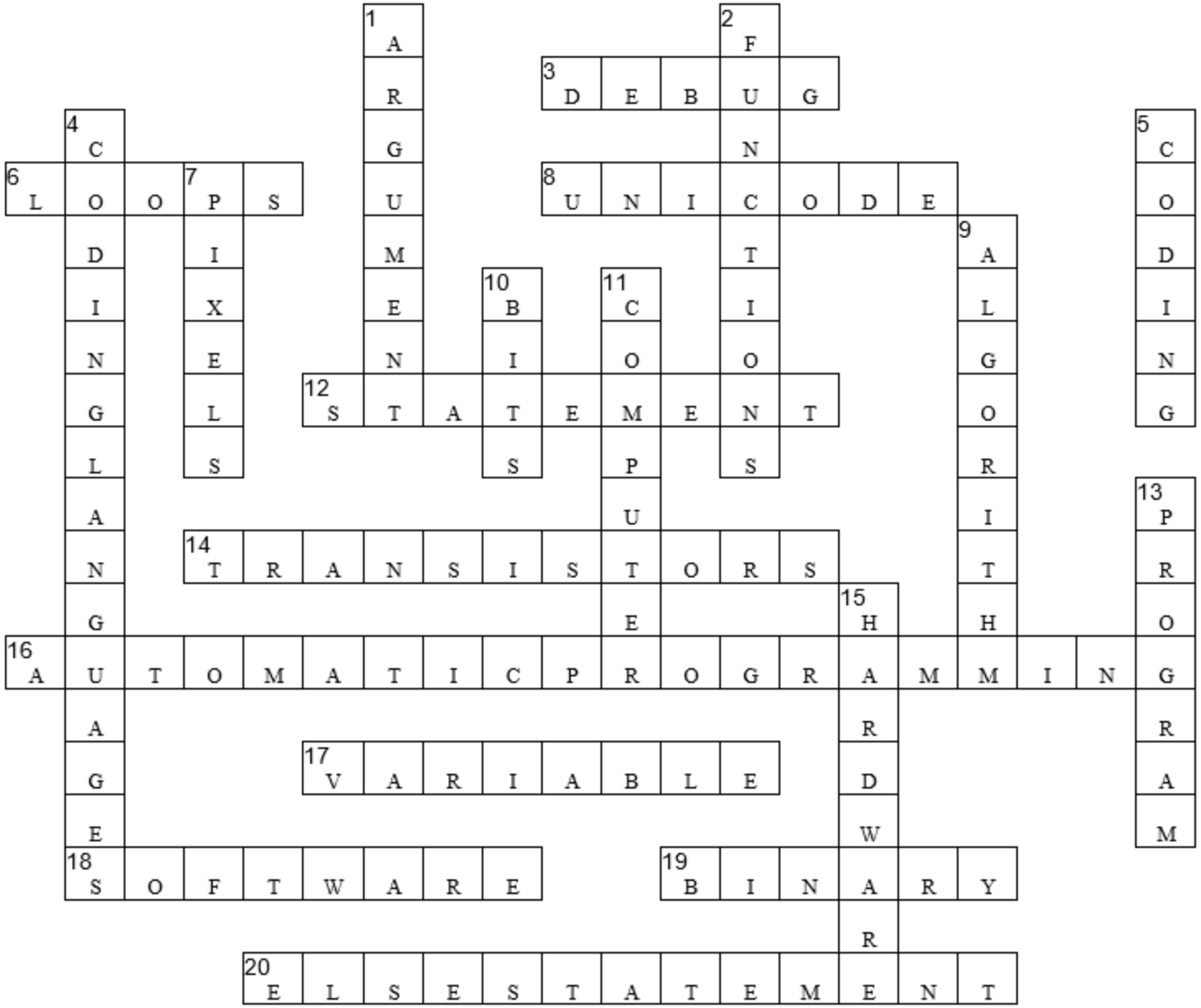
Across

3. The feature that comes in computer coding that allows you to test for errors in your program.
6. A function that allows you to run a section of code repeatedly or until told otherwise.
8. An international encoding standard for use with different languages and scripts where each letter, digit or symbol has an assigned numeric value.
12. The way you tell a computer to perform an action by writing instructions in the form of a...
14. A part of a computer that converts our languages to binary.
16. A type of coding that lets computer programming be performed at a higher abstraction rate.
17. A container that holds a single value, word or piece of information that you can use throughout a program.
18. The coded features of a computer that helps it run.
19. The language in which computers use to format and read data.
20. A function that allows something else to happen when the condition in the statement is not true.

Down

1. A way to provide more information to a function.
2. A block of code that can be referenced by name to run the code it contains.
4. Java Script, Python and C++ are examples of...
5. How people create instructions for computers to follow.
7. The small coloured squares that are conveyed on screens, often making a picture.
9. A set of instructions that are followed to overcome or solve a problem.
10. The individual 1's and 0's that are found in binary.
11. An electronic device used for storing and processing data, typically in binary code.
13. An application that you can interact with and use.
15. The physical features of a computer that you can touch.




1 ARGUMENT
2 FUNCTION
3 DEBUG
4 COMPILING
5 CODING
6 LOOP
7 PIXELS
8 UNICODE
9 ALGORITHM
10 BITS
11 COMPUTERS
12 STATEMENTS
13 PROGRAMMING
14 TRANSISTORS
15 HARDWARE
16 AUTOMATICPROGRAMMING
17 VARIABLE
18 SOFTWARE
19 BINARY
20 ELSESTATEMENT

IT word

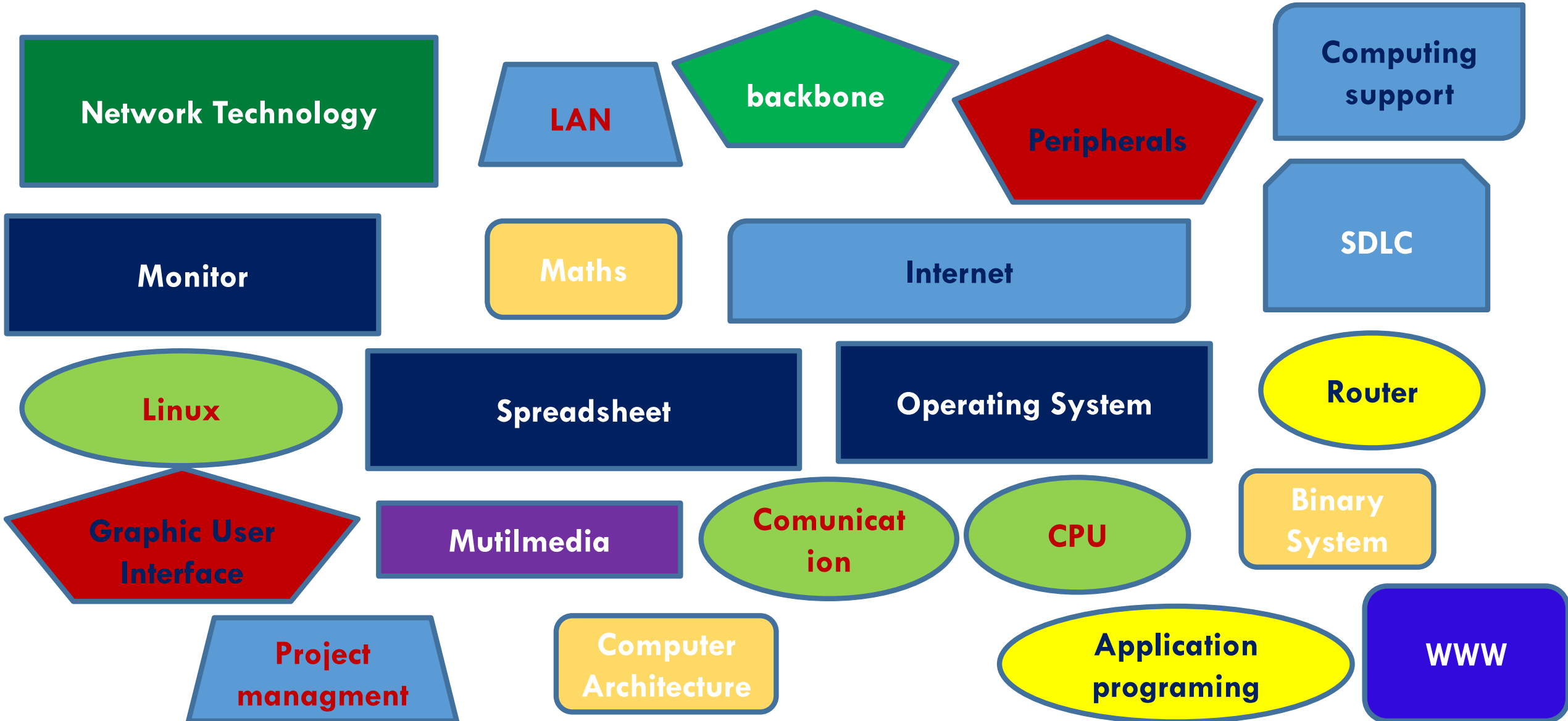
- O P E D E V E L R
- D L N G Y M A I E E T I
- B W N C H R N D U O A R T
- T M A E
- R W V E I E
- A A I J V R C S P T
- Y P O T H N
- Y U R B
- L A C A P S
- U I N S E R R F A T E C E

Word	Description

Englisg for IT

- **Hoạt động 6.** Thảo luận về BUG trong lập trình và các giải pháp qua bài hát "Bug in the JavaScript"? https://www.youtube.com/watch?v=jxi0ETwDvws

Look at me

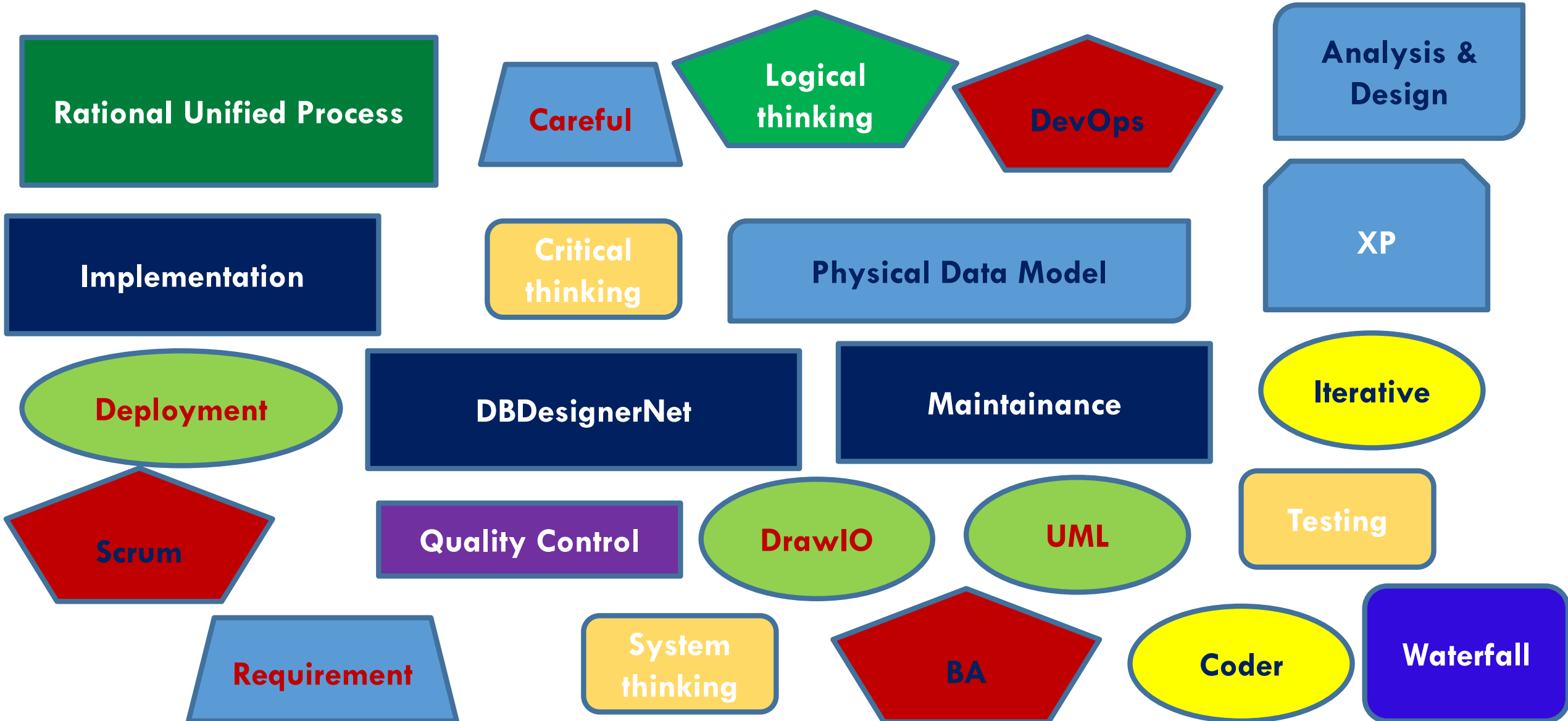

Network Technology
LAN
backbone
Peripherals
Computing support
Monitor
Maths
Internet
SDLC
Linux
Spreadsheet
Operating System
Router
Graphic User Interface
Mutilmedia
Comunicat ion
CPU
Binary System
Project managment
Computer Architecture
Application programing
WWW

Term/Group Tables

Term	Vietnamese	Definition (1-3 sentences)	Ref links

Name of software	Name of hardware	Name of subjects

Look at me

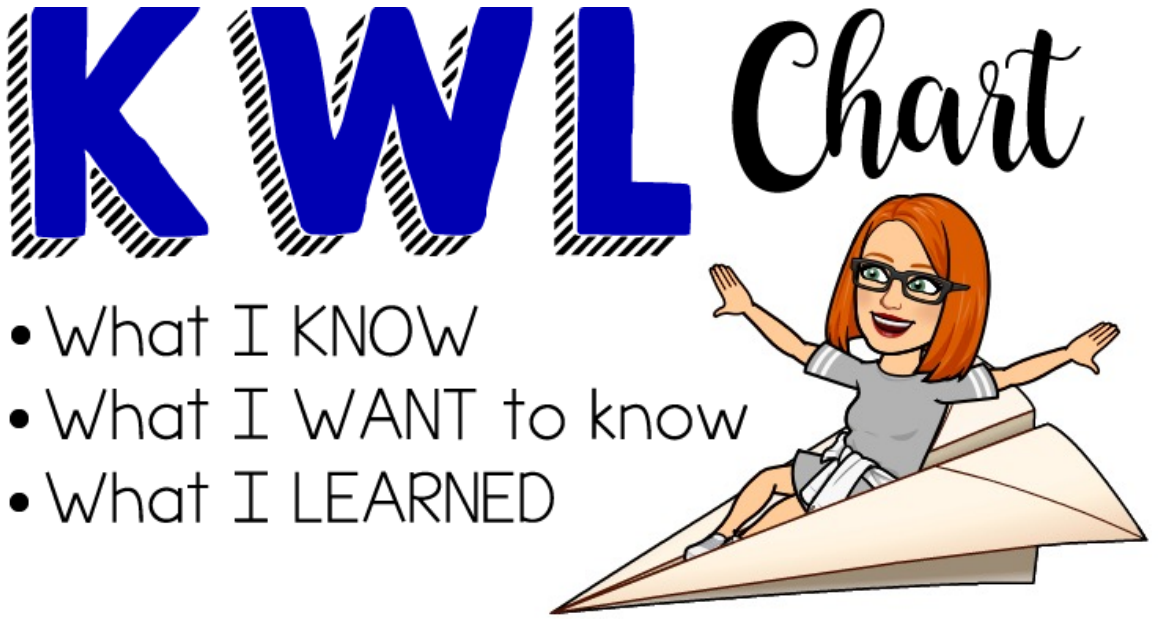

Rational Unified Process
Careful
Logical thinking
DevOps
Analysis & Design
Implementation
Critical thinking
Physical Data Model
XP
Deployment
DBDesignerNet
Maintainance
Iterative
Scrum
Quality Control
DrawIO
UML
Testing
Requirement
System thinking
BA
Coder
Waterfall

Listen to music

- https://www.youtube.com/watch?v=Wm2h0cbvsw8
- Summary the song and list down anything in the song related to software engineer and explain.
- List down and software engineer terms in the song.

KWL

K	W	L
…	…	…
…	…	…



Agile word

- S s t m m r a c r u e
- D l n g y m a i e e t i
- B w n c h r n d u o a r t
- T m a e
- S n g n t p p r n n l i a i
- R t v s t r p e o c i e e
- R w v e I e
- P r c t o w n o d u e r
- U s S t e r o r y
- P r b ac k l o d u c t o g

Word	Description

Hoạt động: Tìm hiểu tổng quan

- Mục tiêu: Tìm hiểu cấu trúc lệnh cơ bản trong JS
- Sản phẩm: Bảng giải thích
- Thực hiện: Nghiên cứu tài liệu các ví dụ và slide.

45 phút

Lệnh	Công dụng	Cú pháp	Ví dụ	Tham khảo

if	Thực hiện cấu trúc rẻ nhánh, nếu đúng thì thực hiện lệnh này, ngược lại thực hiện lệnh khác	If (điều kiện){
		lệnh này;
		}
		Else {
		lệnh khác;
		}
			function min(x, y)
			{
			if (x < y) {
			r
			eturn x;
			}
			else {
			r
			eturn y;
			}
			}
				Example 003, slide 1.3

Trò chơi đoán ý đồng đội

Nhiệm vụ: Mỗi nhóm cử 02 thành viên , 01 thành viên dùng mọi cách nhưng **không** được dùng từ trùng khớp, từ tiếng Anh để gợi ý để thành viên kia có thể tìm ra từ khóa được đưa ra.

Thời gian: x phút/từ khóa

English4IT Terms

bridge

OS

Router

MP3

GUI

Linux

Application

software

English4IT Terms

python

C++

CSS

Java

HTML

Java Script

Install

Hello world

Stt	Nội dung	T10	T11	T12
1	Thanh toán Google	10,150,400	8,465,580	5,709,600
2	Thanh toán Zoom (hệ thống)	668,793	668,793	
3	Thanh toán Zoom (nội bộ)	365,756	385,766	
4	Thanh toán JIRA	9,333,000	8,576,150	7,185,800
5	Thanh toán AWS NEW		41,736,932	37,148,512
6	Thanh toán AWS 2		1,237,646	372,152
7	Thanh toán tiền AWS OLD - tháng 10 (Account cũ)			14,636,340
8	Thanh toán Gitlab	1,220,000		
9	Thanh toán Github	292,800		2,646,668
	Tổng cộng	**22,030,749**	**61,070,867**	**67,699,072**