

МИНИСТЕРСТВО НАУКИ И ВЫСШЕГО ОБРАЗОВАНИЯ  
РОССИЙСКОЙ ФЕДЕРАЦИИ

ВОЛГОГРАДСКИЙ ГОСУДАРСТВЕННЫЙ  
ТЕХНИЧЕСКИЙ УНИВЕРСИТЕТ

**На правах рукописи**

# Professional Communication. ICT

*Учебное пособие*



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Цель пособия – развитие навыков устной речи с последующим формированием профессиональной языковой компетенции, расширение словарного запаса по темам, связанным с информационно-технологическими процессами в мире.

Современная система продуктивных упражнений, разнообразные учебные задания, дискуссии, проекты и ролевые игры направлены на овладение лексикой в сфере профессионального общения и совершенствование грамматической компетенции.

Учебное пособие предназначено для магистров, обучающихся по программам магистратуры по профилю «искусственный интеллект» по направлениям 09.04.01 «Информатика и вычислительная техника», 09.04.03 «Прикладная информатика», 09.04.02 «Информационные системы и технологии». Учебное пособие выполнено в рамках реализации гранта на разработку программ бакалавриата и программ магистратуры по профилю «Искусственный интеллект», а также на повышение квалификации педагогических работников образовательных организаций высшего образования в сфере искусственного интеллекта (конкурс 2021-ИИ-01 от 10.06.2021).

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## ПРЕДИСЛОВИЕ

Данное учебное пособие предназначено для развития навыков устной речи у магистрантов, обучающихся по программам магистратуры по профилю «искусственный интеллект» по направлениям 09.04.01 «Информатика и вычислительная техника», 09.04.03 «Прикладная информатика», 09.04.02 «Информационные системы и технологии». Пособие рассчитано на год обучения (56 аудиторных часов) и имеет цель обеспечить студентов коммуникативной компетенцией, что позволит осуществлять различные виды речевой деятельности на английском языке в области информационных технологий с использованием профессиональной терминологии и этикетных речевых клише. Обучение данным аспектам языка осуществляется в рамках коммуникативного подхода, учитывая современные достижения методики обучения иностранным языкам.

Концепция пособия состоит в том, что каждый из 14 тематических уроков соответствуют одному занятию с магистрантами (4 часа). Предлагаемые уроки охватывают широкий круг современных IT-тем, в том числе и по теме искусственного интеллекта, направленных на создание и отработку типичных ситуаций, с которыми современный специалист в области компьютерных технологий встречается в профессиональной коммуникации. Все задания нацелены на освоение навыков реальной речи на английском языке, понимание собеседника, отработку умения задавать вопросы и отвечать на них, выражать мнение относительно представленных высказываний. Особое внимание уделяется формированию умения делать презентации на заданную тему, готовить проекты, участвовать в дискуссиях. Для этого разработаны творческие задания и симуляционные игры, стимулирующие творческую активность и мотивирующие студентов к общению на английском языке.

Данное пособие полностью соответствует Государственному образовательному стандарту программы по дисциплинам

«Профессиональная иноязычная коммуникация (английский язык)», «Иностранный язык», «Английский язык в профессиональной практике».

## UNIT 1. Computers we live with

**1. A. People who have grown up with PCs and microchips are often called the digital generation. This is how some people answered when questioned about the use of computers in their lives. Whose argument is relevant to yours?**

a) I have a **GPS, Global Positioning System**, fitted in my car. With this navigation system I never get lost.

b) I use an **interactive whiteboard**, like a large touch screen monitor at school. I find computers very useful in education.

c) The **DVD recorder** is perfect for my children's entertainment!

d) **Assistive technology**, for people with disabilities, has helped me a lot. I can hardly see, so I use a **screen reader**, a program that reads aloud onscreen text, means and icons.

e) This new HMD, **head-mounted display**, allows me to watch films, and enjoy **virtual reality**, the artificial environment of the latest video games.

f) The upgraded **wireless network** at my university is great: we can connect our laptops, PDAs and Wi-Fi cell phones to the network anywhere in the campus. Communication is becoming easier and easier.

**1. B. Explain in detail how people use the technology in each case.**

**1. C. Complete the sentences with words put in bold in A.**

1. The \_\_\_\_\_ is a piece of software that interfaces with your PC and allows you, via keyboard commands, to get any text information read to you in synthetic speech.

2. A \_\_\_\_\_, as popularized by virtual reality, lets the user immerse him/herself in a synthetically generated environment.

3. An \_\_\_\_\_ is a touch-sensitive device where a special pen or your finger can act as a mouse.

4. Tony Adams is now the proud owner of a dark silver Vogue, complete with leather interior, \_\_\_\_\_ navigation, and a \_\_\_\_\_ with LCD TV screens.

**2. A. Some people think the computer is not a friend, but a foe. Here are their arguments. What is the most serious danger in your opinion?**

a) Our society has developed **technological dependence**. When computers are down, our way of life breaks down: planes stop flying, telephones don't work, and banks have to close.

b) Computers produce **electronic waste**, plastic cases and microchips that are not biodegradable and have to be recycled or just thrown away.

c) They are responsible for health problems, e.g. **computer addiction**, an inappropriate and excessive use of computers.

d) **Cybercrime**, crime committed with the help of computers, is creating serious problems.

e) Citizens may feel a **loss of privacy** because of unauthorized use of personal data or receiving unwanted electronic messages.

**2. B. What problems do these sentences refer to?**

1) We are sorry to announce that most flights are delayed or cancelled.      2)  
He should go to a psychologist. He spends hours surfing the Web.      3)  
Technology changes so quickly that we have to scrap computers when they  
become obsolete. 4) I've been getting emails about offers for lots of different  
products. 5) My computer system has been broken into and some useful  
information has been destroyed.

**2. C. Have you, your friends or relatives ever experienced a problem of that kind? Work in groups of four and tell your partners about it.**

**2. D. Write recommendations (3-4 positive and negative sentences in the Imperative mood) for the class how to behave in the situations.**

**2. E. Tell the class the most interesting story and represent your recommendations.**

**3. A. What can people do on computers? These are some things.**

A publication, a business graph, Web pages and e-mail, photo editing

**3. B. Match the following vocabulary to the computer activities in A.**

a) make calculations; b) write letters and faxes; c) retouch photos; e) store information; f) send e-mails; g) download files; h) publish e-books; i) surf the Web; j) design an online newspaper.

**3. C. Read what people say about the computers they work with and complete them with the vocabulary in B.**

a) I use computers to do the usual office things like (1) \_\_\_\_\_, but what I find really useful is email. We are an international company and I (2) \_\_\_\_\_ to our offices all over the world.

b) We use PCs to produce all sorts of texts in digital format. We (3) \_\_\_\_\_ and interactive e-learning programs on CD, and we help a local company to (4) \_\_\_\_\_, displayed on the Web.

c) We use financial software to (5) \_\_\_\_\_ and then generate graphs or charts. We also use a database to (6) \_\_\_\_\_ so that it can be easily searched.

d) I like to (7) \_\_\_\_\_ on my computer; I improve them by making a few touches and then save them on a CD. I also enjoy looking at music portals on the Web. I (8) \_\_\_\_\_ every day and often (9) \_\_\_\_\_, I copy music files from the Net to my PC.

**3. D. Read full phrases once again and guess the occupations of the speakers. Tell your partners in group of three about computers you work and study with in detail.**

**4. Word-building.** We can form new words by using prefixes and suffixes, e.g. micro-process-or. Here are some common ones in ICT.

a) Negative prefixes meaning ‘not’:

**non-:** *Non-volatile* memory retains its content when the power is turned off.

**un-:** An *unformatted* disk has not been ‘initialized’; it doesn’t allow data to be stored.

b) Prefixes of location:

**trans-** (= across): Data *transmission* can be wired or wireless.

**inter-** (= between): The Internet consists of millions of computers *interconnected* in a global network.

**intra-** (=within): An *intranet* is a private network, restricted to a company’s internal use.

**extra-** (=outside, in addition to): An *extranet* links a company with its customers and suppliers.

**tele-** (=over a distance): *Teleconferencing* enables users in different places to talk to and see each other.

c) Prefixes of size:

**super-** (=large, better): A *supersite* offers links to other websites on a certain topic.

**semi-** (=half, partly) A *semiconductor* is neither a good conductor nor a good insulator (e.g. silicon, used to make computer chips).

**micro-** (=small) A *microbrowser* is designed to display web pages on PDAs and mobiles.

**megabyte; gigabyte** in units of memory.

c) **re-** (in verbs: to do something again): reprint, *reboot*, rewritable.

#### **4. A. Use words written in italics to complete these sentences.**

1) Medical researchers in many countries exchange information through email and \_\_\_\_\_. 2) \_\_\_\_\_ memory (e.g. ROM or flash memory) is able to hold data when switched off. 3) Blogs and web portals are examples of \_\_\_\_\_; they offer news, opinions and web links. 4) \_\_\_\_\_ are used for making integrated circuits and computers. 5) I'll post the agenda for the next week's meeting on the company's \_\_\_\_\_. 6) A home network is two or more computers \_\_\_\_\_ to form a local area network.

#### **4. B. Write sentences of that kind. Ask your partner to translate them into Russian.**

#### **4. C. Complete these definitions with the words in italics.**

1) \_\_\_\_\_: a disk that is completely blank, so information can't be recorded onto it. 2) \_\_\_\_\_: a network that allows communication between a company and the people it deals with. 3) \_\_\_\_\_: the process of sending data over a communication channel. 4) \_\_\_\_\_: to restart the computer, without switching it off completely. 5) \_\_\_\_\_: a web browser designed for small screens on hand-held devices.

#### **4. D. Write definitions of that kind. Read them and ask your partner to guess what the definition is about.**



## 5. Verb prefixes

a) prefixes used to form verbs which mean ‘to cause to be something’:

**en-:** *encrypt* is to change data into a secret code so that only someone with key can read it;

**up-:** *update* is to modify data in a file and thus ensure the file reflects the latest situation; *upgrade* is to add or replace hardware or software in order to expand the computer’s power; *upload* is to send files to a central, often remote computer (compare with ‘download’).

b) prefixes that mean ‘the opposite of an action’ or ‘to reverse an action’:

**de-:** *decrypt* is to convert secretly coded (encrypted) data back into its original form; *decompress* is to restore compressed data back to its original size; debug is to correct errors in a program or system; *defragment* is to recognize data stored on disk by putting files into contiguous order;

**un-:** *uninstall* is to remove hardware or software from a computer system.

**5. A. Complete these sentences with words in italics and make any necessary changes.**

1) The program ran so slowly, I had to un\_\_\_\_\_ it. 2) Your financial information is fully en\_\_\_\_\_ and cannot be accessed. 3) Messages encrypted using a public key can only be de\_\_\_\_\_ by someone with the corresponding private key. 4) The computer compresses and de\_\_\_\_\_ a colour image in less than a second. 5) Once you’ve written a program, you have to test it and de\_\_\_\_\_ it to remove all the errors. 6) In cyberspace, ‘up\_\_\_\_\_’ means to send a file. 7) You can easily up\_\_\_\_\_ your files adding or deleting information. 8) To de\_\_\_\_\_ your hard disk you need a disk optimizer, a program that will reorder your files. 9) There are minimum system requirements for your PC to be suitable for \_\_\_\_\_ to Windows Vista.

**5. B. Write Russian 5 sentences using the vocabulary under study and ask your partner to translate them into English. Correct his/her mistakes if necessary.**

**6. A. The *e-* prefix means ‘electronic’; *cyber-* describes things relating to computer networks. With the help of an online computer dictionary, find the meaning of these words.**

**cyber-:** cyberculture, cyberslacking / cyberloafing, cybercrime, cybercast, cyberattack, cybersquatting;

**e-:** e-card, e-commerce, e-learning, e-cash, e-calling, e-zine, e-signature.

**6. B. What do you deal with in your study/work?**

**6. C. Remember some other words with these prefixes. Give their definitions and ask your classmates to guess the words.**

**7. A. Complete the text with words from 6. A.**

The term ‘cyber’ first appeared in the word ‘cybernetics’, coined by Norbert Wiener in 1948 as the science of communication and control. In the 1960s new ‘cyber’ words emerged, such as *cyberman* and *cyborg*, referring to a being that is part robot, part human. In 1984 William Gibson popularized the term (1) \_\_\_\_\_ in his novel *Neuromancer*. He used it to describe a futuristic, virtual world of computers, but now it refers to the Internet. Other common words are *cyberworld*, *cybercafé*, and *cyberphobia* (a fear of computers). Companies are now worried about (2) \_\_\_\_\_: employees using the Net to do things that have nothing to do with their jobs, e.g. chat with friends.

The *e-* prefix is often added to activities that have moved from the physical world to the electronic alternative, e.g. *email* and *e-shopping*. Other well-known examples are: (3) \_\_\_\_\_, small magazines that are available on the Internet;

(4) \_\_\_\_\_, doing business electronically on the Net; and (5) \_\_\_\_\_, providing instruction via optical discs, the Web or satellite TV.

**7. B. Write a brief summary of the text using the active vocabulary of the unit and the speech patterns:**

- 1) The text deals with...
- 2) The text gives detailed information on ...
- 3) It is noted that ...
- 4) According to the text it becomes clear that ...
- 5) I find the text rather interesting/challenging/surprising/..., because ...

**8. Write a story/dialogue or a summary of the lesson using vocabulary in Unit 1 (at least 10 words).**

## **UNIT 2. Convergence in technology and business**

**1. A. Discuss with your partner on the questions. Agree or disagree.**

- a) Do you know all facilities of your mobile phone?
- b) Make a list of all the devices it can replace.
- c) Which of them do you find the most / least helpful? Why?
- d) Do you need any other facilities?

**1. B. Write a brief summary of your discussion (5-6 sentences) and represent it to the class.**

**2. A. Do you know what the *convergence* is? Give its definition. If it is difficult, use an online dictionary. Compare your answer with the information in this text.**

## **RESPONDING TO CONVERGENCE**

Convergence is creating new business and forcing existing business to adapt quickly or die. We are seeing the convergence of telecommunications, IT & Media; the convergence of fixed & mobile services and convergence at device level. All of these trends are creating new markets and making other equipment, products, services and even whole companies rapidly obsolete. For technology manufacturers or service providers, declining which markets to base your future on becomes a challenge with serious consequences. Should BT or AT&T provide home TV services to replace their declining telephony revenues? Should Kodak integrate a mobile phone into its cameras or just give up?

Does Microsoft still need to sell boxed software when you can download applications onto a smart phone? Does everyone have to have a mobile offering or have no future? When the communication of voice is just another software application what do equipment manufacturers like Nortel or Alcatel-Lucent do? Google just does research, right?

Collisions within the telecoms, IT and media sectors are occurring now on a daily basis. Like any busy crossroads, there are going to be near misses and head-on crashes. As ever, the survivors will be the companies that understand their customers, and are agile enough to quickly respond to all this change.

### **2. B. Read the blog post again and pay attention to the questions it asks.**

**What are the two alternatives for the traditional companies?**

<b>Company</b>	<b>Alternative 1</b>	<b>Alternative 2</b>
BT / AT&T		
Kodak		
Microsoft		
Nortel / Alcatel-Lucent		
Google		

**2. C. Discuss the questions with your partner.**

**2. D. Give the names of some Russian companies that have to change to survive. How can they solve their problems? Work with your partner and evolve some recommendations for one company in your list. Represent them for the class.**

**2. E. Write a reasonable comment in response to this blog post (10 sentences).**

**3. A. Read the magazine article about trends in Telecoms and IT. Match the industry leader to their area of expertise.**

- |                 |             |
|-----------------|-------------|
| 1. Peter Wilson | a) software |
| 2. Jenny Lane   | b) telecoms |
| 3. Sanjay Ravi  | c) hardware |

To celebrate our 10<sup>th</sup> anniversary, we invited industry leaders to share their thoughts about the changing world of Telecoms and IT. To find out that they think, read on ...

**Peter Wilson.** The world is now plugged in, and countries are connected up using a mixture of terrestrial networks, undersea cables, satellite and microwave communications, Wi-Max and Wi-Fi, GSM and 3G. The move from packet-based services to the internet protocol means everyone expects to communicate voice, data and video from anywhere to anywhere, globally. The availability of wide area data services such as MPLS and Ethernet have spread all over the world, allowing companies to manage and communicate with their operations wherever they may be.

A reason for this has been the fall in bandwidth costs, and broadband is getting cheaper and cheaper. Services can now deliver tens or even hundreds of megabits

of bandwidth into individual homes for much less money might have used to run its operation only a few years ago.

**Jenny Lane.** In 1965 Gordon Moore stated that the number of transistors on a chip would double every two years. And that has more or less remained true since then. As we write, a single chip can hold about 1 billion transistors each making 3 billion binary calculations per second.

There has been a huge increase in the volume of data and data storage capacity required for this; secondly, there has been a significant decrease in the size and power consumption of hardware and finally manufacturing costs are falling significantly. The result is that there are more and more powerful computers in our lives, and even handheld devices can store gigabytes of data holding thousands of MP3 music files or hundreds of films.

**Sanjay Ravi.** The internet is changing the way we access, buy and use applications. We go online and download the software we want onto our computer, like any other digital product. Increasingly we don't even have the software on our hardware, but visit an internet site and use that application as a service. The use of this Software as a Service (SaaS) model means that we may not need such powerful computers in the future.

We have seen the impact of off-shoring and the rise of India as the world centre of software development and application management. We are also seeing some of the smartest applications and services coming out of people's bedrooms; more and more experts are producing Open source software, which is becoming more and more popular, creating a real threat to the big corporations.

**3. B. According to the text in 3. A, say if the following statements are true or false.**

- I. 1) most counties are connected up with undersea cables.
- 2) many countries have unreliable mobile phone networks.
- 3) recently bandwidth costs have risen dramatically.

**II.** 4) Moore's predictions have been fairly accurate.

5) a typical chip can now hold 3 billion transistors.

6) both data storage capacity and power consumption have gone up.

**III.** 7) fewer people are going to computer stores to buy software.

8) SaaS will require ordinary users to have more powerful computers.

9) software development needs the support of a big corporation to succeed.

**3. C. Match the words on the left with the words on the right to make pairs of words that often go together. The word on the left must go with all three words in the set.**

1) access	a) chip, water, valley
2) download	b) an application, a network, an account
3) go	c) online, offline, on holiday
4) mobile	d) phone, telephony, broadband
5) silicon	e) a file, an image, a demo version

**3. D. Complete the sentences using pairs of words from 3C. Make any changes that are necessary.**

1) Everyone has \_\_\_\_\_, so payphones are becoming redundant. 2) Many internet entrepreneurs from \_\_\_\_\_ in California are now turning their attention to alternative forms of energy. 3) Before you buy the program, you can \_\_\_\_\_ just see how you like it. 4) With a mobile broadband connection, you can \_\_\_\_\_ anytime and anywhere. 5) Internet banking allows users to \_\_\_\_\_ and check their balances. 6) How many transistors can you fit onto a \_\_\_\_\_?

**3. E. Write a brief summary of the text in 3. A using the active vocabulary of the unit.**

**4. Prepare a short report about a device that has changes recently. Find interesting facts in the internet. What is the trend?**

**5. A. Look at the sentences and try to understand what grammar rules they train.**

1) Digital radio sets \_\_\_\_\_ (become) less and less popular. 2) More and more people \_\_\_\_\_ (listen) to radio over the internet. 3) Laptops are getting \_\_\_\_\_ (cheap). 4) Handheld devices are becoming \_\_\_\_\_ (sophisticated). 5) Battery life \_\_\_\_\_ (get) \_\_\_\_\_ (long). 6) In some areas, VoIP \_\_\_\_\_ (take over) from PSTN. 7) Mobile broadband speeds \_\_\_\_\_ (increase) dramatically.

**5. B. Write 5 English sentences using vocabulary under study with respect to the grammar rules in 4. A and ask your partner to translate them into Russian.**

**6. Revise the vocabulary in Unit I and translate the sentences into English.**

1) Электронная почта представляет собой эффективный способ быстрого обмена текстовыми сообщениями и хранения их в электронном формате. 2) Компьютерные преступления включают широкий спектр незаконных действий, которые могут привести к потере права пользователя на личную жизнь. 3) Беспроводные сети предоставляют возможности поиска в сети Интернет, а также скачивания и просмотра музыки и видео в цифровом формате в любой точке планеты. 4) Несмотря на свои преимущества, широкое использование компьютерных устройств во всех сферах жизни может вызвать компьютерную зависимость. 5) Многие печатные средства массовой информации предпочитают иметь электронные



версии своих изданий, публикуемые в сети Интернет. 6) Стремительное развитие технологии является причиной быстрого устаревания электронных устройств, избавление от которых вызывает проблему утилизации электронных отходов. 7) Для обработки фотографий на компьютере потребуется установка необходимого программного обеспечения. 8) Возможности технологии виртуальной реальности позволяют совершить действия, невозможные в реальном мире. 9) Составление графиков и таблиц является неотъемлемой частью работы служащих в сфере экономики. 10) Вспомогательные технологии значительно облегчают использование компьютера инвалидами.

**7. Discuss in groups. Present the resume if your discussion to the class.**

1) Digital era made paperless office a reality but we shouldn't be totally dependent on computers to get work done because some information still requires physical presence at our sight.

2) Mass digitization will mean the end of some jobs, for example a postman, and many companies that supply office goods.

3) Some pieces of recorded information, like tax returns, are created to serve a temporary purpose and allowed to vanish but long-term value items of cultural heritage must be preserved in original.

**UNIT 3.Mobile computing**

**1. How mobile are you? Complete the questionnaire and then compare with a partner.**

*When you are on the move, how often do you...*

	Never	Sometimes	Often
<i>speak to family?</i>			
<i>speak to groupmates?</i>			
<i>buy something?</i>			
<i>check your bank account?</i>			
<i>listen to music?</i>			
<i>send emails?</i>			
<i>use messengers?</i>			
<i>write presentations?</i>			
<i>build spreadsheets?</i>			
<i>access an information database?</i>			
<i>download and use a new application?</i>			
<i>use location-based services?</i>			

**2 A. Work in small groups. Read the text about five types of mobile computer devices. Identify the similar and different features of the devices.**

### **MOBILE COMPUTER DEVICES**

**Laptop computers** are personal computers that are easy to carry and use in various locations. Many laptops on the market are designed to offer you all the functionality of a desktop computer, which means you can run the same software and open the same types of files.

The laptop has an all-in-one design with built-in touchpad, keyboard, monitor and speakers. Laptops also offer you the option of connecting to a larger monitor, regular mouse and other peripherals. This feature means you can turn a laptop into a desktop computer, but one you can disconnect from the peripherals and carry with you wherever you go.

**Tablets** are also designed to offer portability. However, they provide you with a computing experience different from laptops with the biggest difference being that tablets do not have a touchpad or keyboard. Instead, the touch screen offers a virtual keyboard you use to input text, while your finger replaces the mouse as a pointer.

Tablets are bigger than a smartphone and smaller than a laptop. Like the smartphone, you can browse the Internet, carry out videoconferences, stay connected through email, read e-books, play games, watch movies, share photos and listen to music with the tablet. Basic features of tablet computers include: mobile OS; solid-state drives; built-in Wi-Fi.

A **smartphone** is a powerful mobile phone capable of running applications in addition to providing with phone service. These devices have most of the features available on tablets along with cellular Internet connectivity. Cell phone companies offer data plans that offer you Internet access anywhere with coverage.

**E-readers**, or e-book readers, resemble tablet computers, but that they are mainly designed for reading digital and downloadable documents. E-readers have either an LCD or e-ink display. The former is suitable for viewing books and magazines with photos because the LCD screen can display colors. The latter usually displays in black and white and offers a reading experience with less eyestrain.

**Handheld gaming devices** are portable, lightweight video game consoles that have built-in game controls, screen and speakers. Basic features of handheld gaming devices include: online access to free and paid games; access to online movies, TV shows; social media apps; Web browsing; online and local multiplayer support.

**2. B. Work with a partner. One of you is a sales assistant the other is a customer who wants to buy a device from A. Look at the language below and role play the situation.**

*Expressing needs: I want...; I need to...; I'd like to...; It's not very convenient only...; It's important for me to...*

*Recommending: What I'd recommend is...; I'd go for...; It would be worth getting...; You should get...; You could try...*

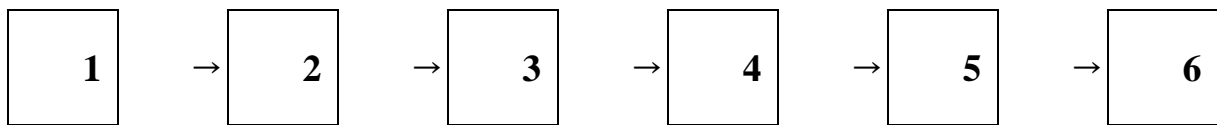
**3. A. Work in pairs. Think about people in these jobs. How might a mobile device be useful to them?**

- 1) a company sales person who visits many client companies
- 2) a delivery driver for a parcel delivery company
- 3) a technician who installs entertainment systems in people's homes

**3. B. Complete the flowchart with steps a-f in the correct order.**

- a) admin staff print out work instructions
- b) admin staff send invoice asking for payment
- c) client signs paperwork
- d) technician finds client and installs system
- e) technician picks up instructions
- f) technician takes paperwork back to office

**Entertainment systems installation workflow**



**3. C. Work in pairs. How do you think the flowchart in 3. B will change if the technician has a mobile device? Draw a new flowchart and complete the stages.**

**Zero and first conditionals**

We use the <i>zero conditional</i> to talk about something that usually or always happens as a result of an action or situation.	<b>If you drop</b> a tablet, it <b>breaks</b> . <b>If you use</b> a tablet, you <b>can send</b> documents easily.
We use <i>the first conditional</i> to talk about the result of a future action or situation.	<b>If we have</b> a problem, we'll <b>send</b> a message.
We use a comma between the two clauses when the <i>if</i> -clause comes first but not when it comes last.	If we buy tablets, we'll save money. We'll save money if we buy tablets.

**4. The company in 2. B, which installs entertainment systems, is now using the tablets. Complete these zero conditional sentences.**

1) With the tablets, if the technician ... (not know) the way to a job, he or she ... (use) GPS to find the best way there. 2) If the customer ... (be) happy with the job, he or she ... (sign) using the tablet's screen. 3) If a customer ... (change) their order, the system ... (update) the details on the tablet. 4) If a technician ... (need) to order a new part, he or she ... (send) a message electronically.

**5. Work in pairs. How are these mobile device features and functions useful? Use zero or first conditionals.**

voice recorder; camera; video camera; e-book reader; GPS; long battery life;  
torch; USB; recharger

*Example: If the phone has a GPS, we can use it to find places. If the battery life is long, ...*

**6. A. Read the advertisement and find words in the text that match these definitions.**

1) Change something to make it suit a special purpose \_\_\_\_; 2) add electronic information to something, e.g. a photo \_\_\_\_; 3) the position of something \_\_\_\_; 4) changing written or printed words to data that a computer can understand \_\_\_\_; 5) give information \_\_\_\_; 6) a word used to show that something is completely correct and true \_\_\_\_; 7) stored information, e.g. on a computer \_\_\_\_; 8) a small part inside smartphones and other devices that measures change of speed, e.g. if someone drops it \_\_\_\_

**YOUR MOBILE WORKERS CAN BE MORE PRODUCTIVE!**

With our fabulous new hand-held devices, your mobile workers can be safer and more productive at the same time! Have no more paperwork that takes up workers' time and that can get lost! Know where your workers are at any time!

We can customize devices for any situation. As an example, let's look at devices we've customized for traffic wardens:

- The devices have cameras and GPS so the warden can take photographs of illegally parked cars. The device automatically tags the photograph with location and time. Then optical character recognition (OCR) technology can read the car's registration number from the photograph and transmit it wirelessly to a central database. The warden saves time because there is no data entry.

- The devices continuously report the warden's location back to the control centre. So if there is a problem, the control centre knows exactly where the warden is and who to contact.

- Because most of the data is kept electronically, record keeping costs are lower.

- Being a traffic warden can be dangerous. The accelerometer in the device automatically sends message if it falls, unless the user presses the 'Cancel' button immediately. Then the control centre can call the police.

**6. B. Work in small groups. You are technicians in the mobile device company in A. Suggest how and why you could customize mobile devices for these jobs.**

1) delivery driver                      2) salesperson                      3) nurse

*Example: A GPS will be very useful for a delivery driver. If he or she gets lost, it'll help him or her to find his or her customers.*

**7. A. Match the words with the definitions.**

1) Mapping                      a) finding the best route from one point to another  
2) Tracking                      b) following the progress of a moving vehicle or person

- 3) Navigation                      c) creating an image or diagram of an area

**7. B. When do you use a mobile device to help with each of these?**

**7. C. Can you think of any uses that organizations (e.g. police, insurance companies) have for these location-based services (LBS)?**

**7. D. In your opinion, what are:**

- 1) the two biggest advantages to a business of using LBS?
- 2) the two biggest advantages to a consumer of using LBS?
- 3) the two biggest disadvantages to a business of using LBS?
- 4) the two biggest disadvantages to a consumer of using LBS?

## **UNIT 4. Networking**

**1. Work in pairs. Ask and answer these questions.**

- 1) What computing devices do you use in your daily life (e.g. ATMs)?
- 2) Do you think they are on a network? Is it wired or wireless?
- 3) Are these devices secure? What security features do they have (e.g. a PIN)?

**2. A. Read the text about the basics of networks.**

### **WHAT IS A COMPUTER NETWORK?**

A network is defined as a group of two or more computer systems linked together. There are many types of computer networks, including the following:

- local-area networks (LANs): The computers are geographically close together (that is, in the same building).

- wide-area networks (WANs): The computers are farther apart and are connected by telephone lines or radio waves.
- campus-area networks (CANs): The computers are within a limited geographic area, such as a campus or military base.
- metropolitan-area networks (MANs): A data network designed for a town or city.
- home-area networks (HANs): A network contained within a user's home that connects a person's digital devices.

In addition to these types, the following characteristics are also used to categorize different types of networks:

- topology: The geometric arrangement of a computer system. Common topologies include a bus, star, and ring.
- protocol: The protocol defines a common set of rules and signals that computers on the network use to communicate. One of the most popular protocols for LANs is called Ethernet. Another popular LAN protocol for PCs is the IBM token-ring network.
- architecture: Networks can be broadly classified as using either a peer-to-peer or client/server architecture.

Computers on a network are sometimes called nodes. Computers and devices that allocate resources for a network are called servers.

## **2. B. Answer the questions using the text.**

- 1) Do you think these use a LAN or a WAN?  
a) home network            b) ATMs            c) computers in police cars
- 2) What are the benefits of CANs for its users?
- 3) Which difficulties may arise while designing and maintaining a MAN?
- 4) Which other types of networks not mentioned in the text do you know?
- 5) What are the advantages and disadvantages of the topologies mentioned in the text?



- 6) Why is Ethernet a popular LAN protocol?
- 7) Which of these types of software are usually clients?
- a) word processor (not web-based)                      d) presentation software
- b) web browser    e) instant messaging software
- c) email program
- 8) What are the main criteria for choosing a server?

**3. Write a description of the network solution you use at work or at home.**

**Why?**

**4. Work in two groups, A and B. Group A, list all the advantages of a network. Group B, list all the disadvantages. Then together consider how the disadvantages can be minimized.**

<i>Group A. Advantages of a network</i>	<i>Group B. Disadvantages of a network</i>

**Relative clauses with a participle**

<p><i>Relative clauses with a participle</i> are often used in technical descriptions. They allow you to provide a lot of information about a noun using as few words as possible.</p> <p>We can use <i>an active participle</i>:</p> <p>1) A modem <i>providing</i> access to the Internet = modem which provides access to the Internet</p>	<p>with cables = A fixed LAN which links computers with cables</p> <p>We can use <i>a passive participle</i>:</p> <p>3) Computers <i>equipped</i> with wireless NICs = computers which are equipped with wireless NICs</p> <p>4) A network printer <i>connected</i> to a wireless print server = a network printer which is connected</p>
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2) A fixed LAN <i>linking</i> computers	
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**5. Complete these definitions with the correct participle of the verb given in brackets.**

1) A gateway is an interface ... (enable) dissimilar networks to communicate.  
2) A bridge is a hardware and software combination ... (use) to connect the same type of networks.  
3) A backbone is a network transmission path ... (handle) major data traffic.  
4) A router is a special computer ... (direct) messages when several networks are linked.  
5) A network is a number of computers and peripherals ... (link) together.  
6) A LAN is a network ... (connect) computers over a small distance such as within a company.  
7) A server is a powerful computer ... (store) many programs ... (share) by all the clients in the network.  
8) A client is a network computer ... (use) for accessing a service on a server.  
9) A thin client is a simple computer ... (comprise) a processor and a memory, display, keyboard, mouse and hard drives only.  
10) A hub is an electronic device ... (connect) all the data cabling in a network.

**6. Link these statements using a relative clause with a participle.**

- 1 a) The technology is here today.  
b) It is needed to set up a home network.
- 2 a) You only need one network printer.  
b) It is connected to the server.
- 3 a) Her house has a network.  
b) It allows basic file-sharing and multi-player gaming.
- 4 a) There is a line receiver in the living room.  
b) It delivers home entertainment audio to speakers.
- 5 a) Eve has designed a site.  
b) It is dedicated to dance.

- 6 a) She has built in links.  
b) They connect her sites to the other dance sites.
- 7 a) She designed the site using a website creation program.  
b) It is called Dreamweaver.
- 8 a) At the center of the home of tomorrow is a network.  
b) It is accessed through a control pad.
- 9 a) The network can simulate the owner's presence.  
b) This makes sure vital tasks are carried out in her absence.
- 10 a) The house has an electronic doorkeeper.  
b) It is programmed to recognize you.  
c) This gives access to family only.

**7. Work in pairs. Make a list of all the networking hardware you can think of. In turns, read out one item from your list to the other pairs. They should give a description using relative clauses.**

*Making suggestions*

<p><i>Why don't we/you</i> + infinitive without to</p>	<p><i>Why don't you call</i> the IT help desk? – That's a good idea.</p>
<p><i>What about</i> + -ing</p>	<p><i>What about buying</i> a new router? – I don't think that'll work.</p>
<p><i>How about</i> + -ing</p>	<p><i>How about reading</i> the instructions first? – I'll do that.</p>

**8. Complete this dialogue with the words:** about, change, devices, necessary, problem, speed, should, user, what.

Kevin: I have a problem with the network download (1) .... What can you suggest?

Andrew: Why don't you (2) ... the hub?

Kevin: I don't think that will work. The hub is fine.

Andrew: OK. How (3) ... adding a repeater then?

Kevin: Hmm, I'm not sure it will help. It's not a (4) ... with the signal strength.

Andrew: OK, then you should check the cables and network (5) ... to make sure that they are compatible with your network.

Kevin: (6) ... about changing the modem?

Andrew: I don't think it's (7) .... I think it's a problem with the bridge, switch or the router. You (8) ... look at the specifications.

Kevin: OK. I will. Thanks for your help.

Andrew: Why don't you check (9) ... recommendations on the Internet as well?

Kevin: Good idea. I'll do that.

**9. Work in pairs. What problems do you have with networks? Make a list. Think about speed, compatibility, hardware and software. Show your list to another pair. Ask for help and suggest solutions.**

*Example: A: This software doesn't work with this ... .*

*B: Why don't you ...?*

**10. Work in pairs. Discuss the following questions.**

- 1) What wireless technologies are being used in your country?
- 2) What are the limits to wireless technology when compared to fixed line?
- 3) Can you see the world becoming entirely wireless in the future?

**11. Read the text about the top 5 networking trends of the nearer future. Choose one of these trends and prepare a presentation commenting on it.**

Networking has recently got some serious attention with the wide adoption of these capabilities: automation, mission-critical cloud connectivity, artificial intelligence and machine learning, 802.11ax for wireless networks.

These are the top 5 networking trends for the nearer future.

- 1) Networking Will Become More Automated
- 2) 5G and Wi-Fi 6 Will Make Their Way into Our Homes and Offices
- 3) AI and ML Will Lead to Autonomous Networks
- 4) The Advent of CloudOps Teams
- 5) SD-WAN Will Become the Standard

## **UNIT 5. Databases**

### **1. Work in pairs. Discuss the following questions.**

- 1) What database products do you know and use at work and at home?
- 2) Why do people and organizations use databases? Discuss with the group.

*(Example: They use databases to find out...)*

- 3) What are the types of database software?

### **2. Look at the examples of database software below. What database software do you know? What is it used for?**

*Microsoft Excel*

*MySQL*

*Oracle RDBMS*

### **3. Here are some data storage and backup solutions. Which are the most popular nowadays? Which solutions do you use most often?**

*external hard drive*

*hard disk*

*DVD disk*

*server*

*cloud storage*

*usb flash drive*

### **4 A. What kind of data do companies create, manipulate, store and retrieve?**

**4. B. Match the company department 1-8 with the type of data it works with a-h.**

1) Finance	a) data about employees, training, recruitment needs
2) Marketing	b) data about product specification, details and design
3) Human resources	c) data about profits, tax, loans, shares and cash
4) Customer relations	d) data about volume of products sold
5) Production	e) data about customers, satisfaction surveys, promotions
6) Technical support	f) data about product advertisements and competitors
7) Sales	g) data about quantity of product in storage
8) Stock management	h) information about the Help Desk, support calls, manuals, problem reports

**5. Work in small groups. Talk about the advantages and disadvantages of a computerized database. Present your ideas to the rest of the group.**

**6. A. Complete this manual with the words:** fields, form, objects, primary keys, query the database, record, report, retrieve a record, unique

A database has several parts. These are called (1) ... . The simplest of these is a table; most databases have at least two. Tables look like a spreadsheet. Each row in the table is a(n) (2) ... containing information about one item, such as a person or something that the company sells. Each of these contains several (3) ... with information about the item. For example, in a company's employee database, these might be family name, given name, phone number and so on. One important point is that one field in each record must be (4) ... – the same data must not be in any other record. We call this field the (5) ... . It can be a staff ID number, for example, but it can't be a given name because many people have the same given name.

Another type of object is a(n) (6) ..., which is used for entering data into tables. A third object type is a(n) (7) ... . This can show data from more than one table at the same time, looks good and is suitable for printing.

There are several ways to get data out of a database. One is simply to (8) ... – for example, if we want to check the data in a single record, such as an employee's phone number. If we want to combine information from several tables or to do something with the data such as add up financial information from several records, we can (9) ... .

**6. B. Work in small groups. For each of these tables, discuss which field is a good primary key (more than one answer might be possible). Be prepared to give reasons for your answers.**

1) A database table holding details of a club's members. The field headings are: *Given name, Family name, Email address, Membership number, Address* and *Mobile number*.

2) A database table with details of products that a company holds in stock. The field headings are: *Product name, Product price, Number of units* and *Barcode*.

3) A database table of patients in a hospital. The field headings are: *Family name, Given name, Date of entry to the hospital, Bed number, Case number* and *National identity card number*.

**6. C. Work in small groups. Discuss tables, fields and primary keys that you could use for records in databases in these cases. Compare your answers with another group.**

- 1) a dentist's database of patients
- 2) a language school's database of students
- 3) a travel agent's database of airline tickets

4) a database in an online multi-player game in which players can stop and restart their games whenever they want

***By + -ing***

We can use **by + -ing** to express how to do things: *We can find the total number of hours by querying the database. By running a report, we can print a list of customers.*

**7. A. Work in pairs. Ask and answer questions about how to do these things.**

***Example:*** *enter data in a database (form)*

***A:*** *How do you enter data in the database?*

***B:*** *You can do that by opening a form and entering the data into the fields.*

- 1) find information in a database (query)
- 2) add a column of numbers in a spreadsheet (sum/formula/spreadsheet)
- 3) make sure each record in a database is unique (use/primary key)
- 4) print information from a database (run/report)

**7. B. Work in small groups. Read this scenario and discuss possible solutions for each problem.**

A company has these problems:

1) Information on paper takes up too much space in the office. 2) It is difficult to find information on paper. 3) Admin staff spend a lot of time entering data. Surely computers can do this? 4) They enter the same data into different spreadsheets. 5) Copying and pasting data from spreadsheets into word processor documents is very slow and doesn't look very good.

**Possible solutions:** scanning; optical character recognition (OCR); set up a database; run reports.

***Example:*** *By scanning all your documents, you will use less paper.*



**8. Read the text about types of databases. Work in small groups. Choose one type of database in bold and make a presentation to the other groups. Describe the main features of your database, the main areas of application, and explain its advantages and disadvantages.**

### **TYPES OF DATABASES**

Databases have evolved since their inception in the 1960s, beginning with hierarchical and network databases, through the 1980s with **object-oriented databases**, and today as relational database and non-relational (or NoSQL) databases and cloud databases.

In one view, databases can be classified according to content type: bibliographic, full text, numeric and images. In computing, databases are sometimes classified according to their organizational approach. There are many different kinds of databases, ranging from the most prevalent approach, the **relational database**, to a **distributed database**, **cloud database**, **graph database** or **NoSQL database**.

### **UNIT 6. Web development**

#### **1. A. Work in pairs, discuss these questions.**

- 1) Why do companies have websites?
- 2) What is the difference between *a website* and *a web page*?
- 3) What is a home page?
- 4) Do you have a blog or personal website?

**1. B. Work in pairs. Think of a typical website and discuss these questions.**

1) Which pages do most websites have (e.g. contact details)?

2) Which of these items, or other items, is often at the top of each page? Which is below that? What else might you find at the top of a web page?

*contact details          menus search          title*

3) What makes a website easy or difficult to use? What makes it interesting? Think about how easy it is to find things, what the website looks like and what is on it (e.g. photos).

**2. A. Read the text and fill in the gaps with different types of website: *commercial, educational, entertainment, news, organizational, personal, social networking.***

### **TYPES OF WEBSITE – A GUIDE FOR WEBSITE DESIGNERS**

The purpose of a(n) (1) ... website is to inform about an idea or event. Companies develop (2) ... websites to sell products or services. (3) ... websites are designed to entertain or provide fun activities. People visit (4) ... websites to obtain information. The purpose of a(n) (5) ... website is to provide information about an individual. (6) ... websites help people to exchange personal information. (7) ... websites aim to share knowledge and enable online learning.

**2. B. Work in pairs. Discuss which types of website you use more often and why.**

**3. A. What information can you get about website traffic using a website analysis application? Work in pairs. Make a list.**

**3. B. Match the website analysis tools 1-5 to the descriptions a-e.**

1) traffic	a) information about where the visitors to your site are from
2) meta tag	b) invisible information about (e.g. a hidden keyword) on a website
3) visitor map	c) information about a user and the sites they browser
4) user profile	d) increasing the number of visitors to your site
5) page optimization	e) the movement and actions of visitors to your site

**4. A. Read the text and summarize the process of a web page design in a flowchart.**

### **HOW TO DESIGN A WEB PAGE**

Before you start designing your web page, you have to figure out what sort of a web page it's going to be and what contents it should have. All this information is needed in order to successfully design a web page.

You need to know the type of the page, because there are different methods of approach when you design a static or a dynamic web page.

You also need to know the contents of the web page, because you need to arrange them within the page's layout. There are different types of content - text, images, videos, animations and other dynamic elements. In order to create a successful web page you need to put the right content in the right place.

You must consider what the page's purpose will be when you start sketching it. Creating the basic layout, color scheme and arranging the content, is the second important step. Now, when you come up with some basic design idea you may discuss it with your client. If the client has some notes about the design it's good to consider them, but remember - you are the web designer. You have the knowledge and you are the one who has to tell the client how the web page should look.

Once you have an approved design conception you can proceed with revising the current basic layout, designing the page's specific elements and putting some final touches to your web page design.

### ***Modal verbs***

Modal verbs are used in the following ways:

1) To express a possibility: *You **can/could** use Adobe Flash to include interactive animations. You **may** like to insert songs, podcasts, etc. The price of this software **might** go down next month.*

**Can** and **could** are often interchangeable when talking about possibility. **May** and **might** are used to express weaker possibilities and often come before the verb **like** to mean *it is possible you will like*.

2) To ask for permission: ***Can/Could/May** I use your mobile phone? **May** is more formal than **can** or **could**.*

3) To talk about ability: *They are looking for artists who **can** draw and design web pages.*

**Could** is the past tense of **can** and is used to talk about ability in the past.

4) To talk about obligation or necessity: *To see or hear all these files, you **must** have the right plug-in. In the mid-nineties, we **had to** work against the technology in order to design a page. You **needn't** learn HTML in order to build your own website.*

**Needn't** means *don't need to* or *don't have to* and is used to express a lack of obligation.

5) To give advice: *Before going live, you **should** check that all the links work.*

**4. B. Underline all the modal verbs in the text from 4. A. What are they used for?**

**4. C. Complete these sentences with suitable modal verbs. There may be more than one possible answer.**

- 1) With Java, I ... include some attractive banners on my website.
- 2) With a web editor, you ... create a web document easily.
- 3) Web designers ... be very knowledgeable about building effective and usable site layouts.
- 4) These days, you ... learn how to use complicated HTML codes. Modern web design software is user-friendly and converts a visual layout into HTML code.
- 5) Once live, you ... update your website regularly.
- 6) To view a PDF file, you ... have Adobe Acrobat Reader.
- 7) Websites with graphics are more inviting than those written in plain text, so you ... like to insert some graphics into your documents.
- 8) ... I use your laptop? I ... to print out this report.
- 9) Navigation ... be accessible and usable without the need for client-side technologies such as JavaScript or Flash, which users ... not have enabled or installed for various reasons such as security or company policy.
- 10) Before a domain ... be used for a website, it ... first be registered, and then the site owner ... purchase a hosting plan to publish the site on the Internet.

**4. D. Work in pairs. Discuss at least two things:**

- 1) you can now do more easily because of the Internet
- 2) you could do better if you had a faster Internet connection
- 3) that may/might happen to the Internet in the next ten years
- 4) you must consider when designing a website
- 5) you should take into account when choosing which PC to buy

**3. What features make a good website? Make a list of the key features you look for. Then compare your list with others in your group.**

**4. Work in pairs. Think about your favourite websites and discuss these questions.**

- 1) Do you like the way they are designed? Give reasons for your answer.
- 2) What elements do you think a good website should have? Make a list.

**5. Study these seven points for evaluating websites. What questions would you ask to evaluate a website on each point?**

- 1) design; 2) navigation; 3) ease of use; 4) accuracy; 5) up to date; 6) helpful graphics; 7) compatibility

**6. Write an evaluation of a website of your choice.**

## **UNIT 7. E-commerce and online banking**

**1. A. Put the words and phrases from the box below into the right categories (online shopping, offline shopping, both).**

<i>delivery</i>	<i>shopping assistant</i>	<i>checkout</i>	<i>out of stock</i>	<i>on sale</i>	
<i>discount</i>	<i>order</i>	<i>shopping cart</i>	<i>return</i>	<i>search engine</i>	<i>bargain</i>
<i>aisle</i>	<i>queue</i>	<i>changing room</i>	<i>wishlist</i>	<i>shipping cost</i>	

**1. B. Work in pairs. Discuss the following questions.**

1) Have you ever bought anything online? If yes, what was the last thing you bought on the Internet and where did you buy it exactly?

2) What kind of problems can you have when you buy on the Internet?

3) What was the last bargain you got (online or offline)?

4) Do you prefer to do shopping online or in traditional, physical stores? Why?

5) When do you think everybody will buy things only online?

**2. A. Match the types of business in the box to the correct column 1-4.**

<i>B2C business-to-consumer</i>	<i>C2C consumer-to-consumer</i>
<i>B2B business-to-business</i>	<i>M-commerce</i>

Types of business	1 _____	2 _____	3 _____	4 _____
Explanation	Companies exchange information and make wholesale transactions.	Companies sell products or services to customers over the Internet.	People sell or exchange second-hand, used items and collectibles.	Customers purchase products and services via mobile devices.
Examples	coffee supplier to Nestle	Amazon	eBay	news, sport results

**2. B. Give examples of the four types of business in 2. A.**

**3. A. Read this magazine article about Kate’s job. What are three parts of an e-commerce system? Which does Kate find most difficult to set up?**

**INTERNET SHOPPING: THE INSIDE STORY**

Kate Morgan specializes in setting up e-commerce systems. Here, she tells ‘New Trends’ magazine about her job.

I work with B2B e-commerce systems as well as B2C systems and integrate all the components: the user interface, the shopping basket and the payment system. The user interface is the part that shoppers see on their screens. For this, I work closely with designers to make it look good; it’s important that customers enjoy using it.

When customers see an item that they want to buy, they put it in their shopping basket. To set this up, I usually integrate standard software packages with the company's website. This software uses small files that the browser puts on the user's computer, called cookies, to track the items in the basket. This stage isn't too difficult – mostly I just match up the code with the client's website.

The next step is the payment processing system. This takes the customer's information – delivery address, credit card number, etc. it processes the payment and outputs the details so that the company can send out the order. This component is more complicated: I have to integrate it into several different systems, including the company's accounting system. Fortunately, there's a special data format, EDI that is Electronic Data Interchange, which makes this easier. EDI is standard in e-commerce systems so that other kinds of software, such as accounting systems, can accept data from it.

My job is fun because every project is different and I use my technical skills as well; a great combination!

### **3. B. Find words in the article in 3. A that match these definitions.**

1) put together two or more things so that they work well together; 2) smaller parts of something bigger; 3) computer programming instructions; 4) taking a series of steps to do something; 5) the place to send goods; 6) the items that a customer wants to buy; 7) looking after money in an organization.

### **3. C. Read the article in 3 A again and answer these questions.**

- 1) For which component is appearance important?
- 2) Which component involves integration with something else?
- 3) What do e-commerce websites use cookies for?
- 4) For which component is programming mentioned?
- 5) Which item involves integration with more than one other component?
- 6) Where does the company get delivery information from?



7) Why is EDI useful?

**4. What are the advantages and disadvantages of shopping online? Use this table to make notes and then make sentences.**

	<b>Advantages</b>	<b>Disadvantages</b>
<i>security</i>		
<i>speed</i>		
<i>choice</i>		
<i>convenience</i>		
<i>price</i>		

**5. A. You work for SellOnline.com. The company develops e-commerce solutions for small businesses. Your client, Document Ltd, sells stationery. They sell lots of different types of product. Document Ltd wants to develop its online presence to reach customers more effectively. Complete the proposal template. Use these questions to help you.**

- 1) What type of e-commerce will Document Ltd offer?
- 2) What e-commerce technologies will Document Ltd use to attract customers?
- 3) What security solutions will the company set up in order to protect both the customer and the company?
- 4) What tools and features will the company website have?
- 5) How will the customer complete transactions?

<i>Proposal No. 2021/123/45</i>	<i>Date:</i>
<i>Customer:</i>	<i>Business activity:</i>

<i>Subject:</i>
<i>E-commerce type:</i>
<i>E-commerce technologies:</i>
<i>Security solutions:</i>
<i>Website features and tools:</i>
<i>Transaction process:</i>
<i>Proposal presented by:</i>

### ***Phrases for presentations***

<b>Introduction</b>	<i>Good morning/afternoon everybody. Thank you for coming.</i> <i>Today we are going to present... .</i> <i>First, I am going to talk about... .</i> <i>Then, we will show you... .</i> <i>Finally, we will answer your questions... .</i>
<b>Speakers</b>	<i>Now, I'll hand over to my colleague.</i> <i>Let me start with... .</i>
<b>Closing</b>	<i>To finish... .</i> <i>Thank you very much for listening. Are there any questions?</i>

**5. B. Prepare and deliver a presentation for the marketing director of Document Ltd. Use your proposal from 5 A to help you.**

**6. A. Read the text about digital banking and fill in the gaps with the words from the box below.**

<i>alerts</i>	<i>branch banking</i>	<i>safeguard</i>	<i>credit unions</i>
	<i>ensure</i>	<i>deposit</i>	<i>pay bills</i>

Banking conducted via computer or mobile device offers many advantages over (1) \_\_\_\_\_, including being able to receive text and email (2) \_\_\_\_\_, check your account balance and transactions in real time, (3) \_\_\_\_\_ and transfer funds

with just a few taps on the keyboard, and make a (4)\_\_\_\_\_ by taking a photo of a check – at any time, on any day, from anywhere. Virtually all major financial institutions offer online and mobile banking, as do most smaller financial institutions, including (5) \_\_\_\_\_. (There are even banks that offer *only* online and mobile banking.) Financial institutions work hard to (6) \_\_\_\_\_ a safe, problem free banking experience, but there are things you can do to (7) \_\_\_\_\_ the privacy of your information and the security of your accounts.

**6. B. Work in pairs. Answer the following questions about digital banking.**

1) Do you use online or mobile banking? If so, what do you consider the greatest benefit(s)? If not, why not?

2) What do you, or would you, find to be the greatest advantage of online or mobile banking? Does it (or would it) help you manage your money and your bills better?

3) What are three things you could do to make your online or mobile banking activity safer and more secure?

**UNIT 8. Product development**

**1. A. Choose one option for each sentence to learn some project management vocabulary.**

1) Project managers set *obstacles / milestones / challenges* for projects to be able to monitor progress and check if the project is delivered on time.

2) The most important aspect of a project closure phase is client's acceptance of *deliverables / goals / products*.

3) The team must be aware of such *grants / constraints / frameworks* as limited resources to be able to take them into consideration during the planning stage.

4) Clients provide project *program / demands / requirements* which represent their needs and help the team define the task they need to complete to ensure the success of a project.

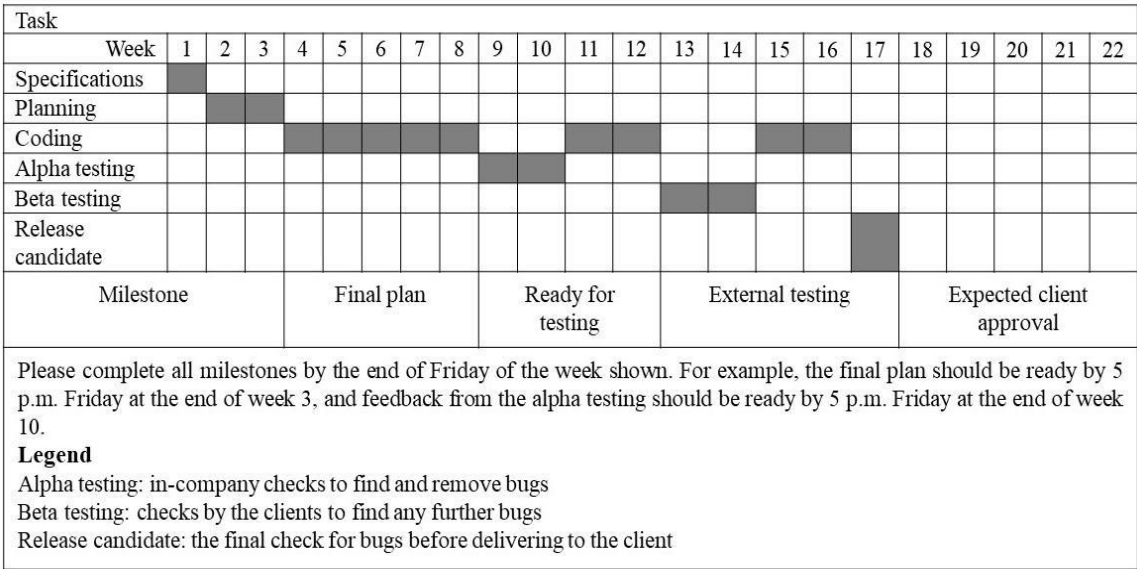
5) We must define the project *range / extent / scope* to establish the boundaries of the project and responsibilities for each team member.

6) Project managers are responsible for finishing projects on time and delivering results to *stakeholders / shareholders / contractors*, either inside or outside the organization.

**1. B. Work in pairs. Discuss the following points. Use the words and phrases from 1. A:**

- 1) Think of the biggest challenges there are in managing projects.
- 2) What kind of project management methodologies have you heard of?
- 3) Have you ever been involved in a project that went wrong?

**2. A. Look at this Gantt chart. Why might someone use a Gantt chart?**



**2. B. Complete these definitions with the words in the box. Use the Gantt chart in 2 A to help you.**

*alpha testing beta testing coding feedback milestone release candidate*

1) Writing software \_\_\_; 2) an important stage in a project \_\_\_; 3) the first stage of testing software \_\_\_; 4) the second stage of testing software \_\_\_; 5) information about problems or how good something is \_\_\_; 6) the final version of software, if no big bugs are found \_\_\_.

### **Schedules**

We use <i>plan to</i> , <i>be scheduled to</i> and <i>be due to</i> in the present simple to talk about <b>schedules</b> . All three phrases are followed by an infinitive.	<i>We're scheduled to finish</i> this project on Friday and <i>we're due to start</i> the next one on Monday. <i>We plan to test</i> the software next week.
We use present continuous if the event is part of a fixed plan and we can clearly imagine it happening.	<i>Alpha testing is finishing</i> next week.

**2. C. Work in pairs. Look at the Gantt chart in 2. A and take turns to ask and answer questions about the schedule.**

*Example: What's scheduled for week 11? – We're due to start coding again during week 11, after alpha testing.*

**2. D. Work in pairs. Take turns to ask and answer questions about your work or study schedule.**

**3. A. Work in small groups. Read this scenario and answer the questions.**

*You work for a computer games company. Your manager has asked you to prepare a rough plan for a new project: a website to advertise a new computer game. It will be similar to other game websites but with a special extra feature:*

*an online version of the game that people can try out before buying the real one. This feature will need a lot of development.*

**Questions to discuss:**

- 1) What is special about the new website compared with others of the same type?
- 2) What is likely to be the most difficult part of the new website?

**3. B. Read the scenario in 3. A again and discuss these points. Then draw a site map based on your decisions.**

Decide: 1) what pages to have; 2) what type of content to include (e.g. video? any premium content? a private area?); 3) how to navigate the site: which pages should be linked to which other pages?

**3. C. Draw a Gantt chart for the project in 3. A. Add the following stages in the chart: *alpha testing, beta testing, client approvals, coding, planning, release candidate, requirements analysis.***

**3. D. Use your Gantt chart from 3 C to explain your project to another group. Then compare your charts. What differences are there? What might be the reason for these differences?**

**3. E. Write a short report to your manager describing your project. Use these headings in your report:**

- a) Introduction (Give background information about the project.)
- b) Stages in the project (Describe the stages you planned in C.)
- c) Conclusion (Say when you think the project will finish.)

**4. A. Read the highlights of how Scrum project methodology works and fill in the gaps in the sentences below. Use the words from the box.**

*review planning chunk/part sprint shippable/deliverable backlog Master*

- 1) A product owner creates a product \_\_\_\_\_ which is a prioritized wish list.
- 2) During sprint \_\_\_\_\_, the team pulls a chunk from the top of that wish list, a sprint backlog, and decides how to implement those pieces.
- 3) The team has a certain amount of time – a \_\_\_\_\_ (usually two to four weeks) – to complete its work, but it meets each day to assess its progress (daily Scrum).
- 4) Along the way, the Scrum \_\_\_\_\_ keeps the team focused on its goal.
- 5) At the end of the sprint, the work should be potentially \_\_\_\_\_: ready to hand to a customer, put on a store shelf, or show to a stakeholder.
- 6) The sprint ends with a sprint \_\_\_\_\_ and retrospective.
- 7) As the next sprint begins, the team chooses another \_\_\_\_\_ of the product backlog and begins working again.

**4. B. Read the text on Agile vs. Waterfall Project Management and discuss the questions below in groups.**

The waterfall method is a traditional project management approach that uses sequential phases to define, build, test, and release project deliverables. Each phase is completed and approved before the team moves on to the next phase. The project can't move backwards to previous phases.

Agile, on the other hand, is an umbrella term covering several newer project management approaches that use iterative work cycles called sprints. Each sprint uses 'mini-phases' to define, build, test, and release the project deliverables.

**Questions to discuss:**

- 1) What are the differences between Agile and traditional project management (Waterfall)?

2) Which of these two methodologies would work better in your workplace?  
Why?

3) What's your opinion about Agile/Scrum? Is this just a buzzword or a revolution in how people work?

4) Which aspect of Scrum do you like/hate most?

5) What is missing from Scrum? What practice would you suggest to improve it?

6) Who in your opinion should not adapt Scrum and continue working using standard Waterfall methodology?

**4. C. Work in two teams. One team will defend Agile methodology and the other will try to show how Scrum is not so good. Think of some arguments for your point and find counter-arguments to the opposing side's ideas. The table below can help you.**

<b>AGILE vs WATERFALL</b>	
changes-oriented	carefully planned
product mindset	project mindset
minimal paperwork	comprehensive and extensive documentation
iteration, all processes	fixed and separated stages
short feedback loop	no feedback until the testing stage
unit testing	end product testing
unclear requirements	fixed requirements
collaboration	teams work in turns
concentrated on revenue	concentrated on cost
full transparency	lack of transparency
constant researching	preliminary research
efficient and timely risk-preventing	risk-averse

## **UNIT 9. IT security and safety**



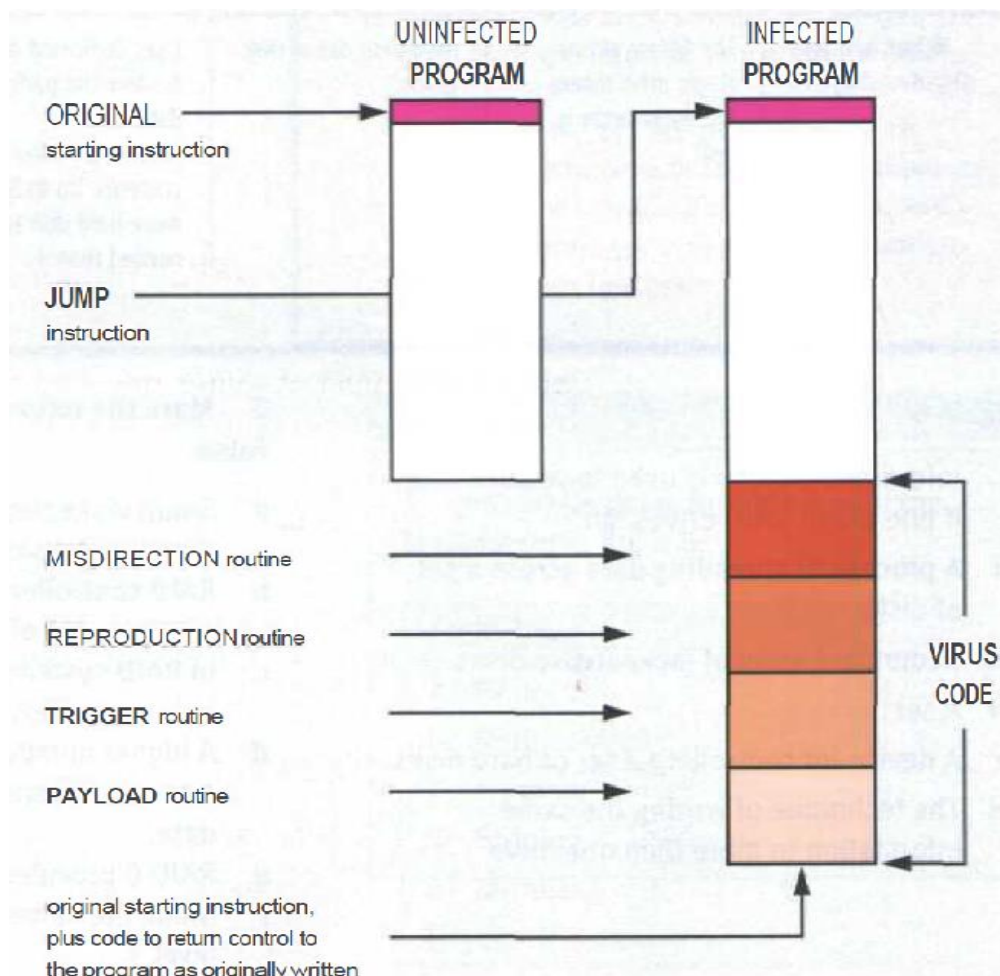
**1. A. What stories do you think followed these headlines? Discuss in small groups.**

1) ILOVEYOU bug creates worldwide chaos. 2) Twitter hack: accounts of prominent figures, including Biden, Musk, Obama, Gates and Kanye compromised. 3) A terrifying new smartphone scam is on the rise

**1. B. What other types of computer crime are there? Make a list within your group.**

**2. A. Study this diagram which explains how one type of virus operates. Try to answer these questions.**

1) What is the function of the Jump instruction? 2) What are the main parts of the virus code? 3) What is the last act of the virus?



**2. B. Scan this text to check your answers to 2. A. Ignore any parts, which do not help you with this task.**

## **THE ANATOMY OF A VIRUS**

A biological virus is a very small, simple organism that infects living cells, known as the host, by attaching itself to them and using them to reproduce itself. This often causes harm to the host cells.

Similarly, a computer virus is a very small program routine that infects a computer system and uses its resources to reproduce itself. It often does this by patching the operating system to enable it to detect program files, such as COM or EXE files. It then copies itself into those files. This sometimes causes harm to the host computer system.

When the user runs an infected program, it is loaded into memory carrying the virus. The virus uses a common programming technique to stay resident in memory. It can then use a reproduction routine to infect other programs. This process continues until the computer is switched off.

The virus may also contain a payload that remains dormant until a trigger event activates it, such as the user pressing a particular key. The payload can have a variety of forms. It might do something relatively harmless such as displaying a message on the monitor screen or it might do something more destructive such as deleting files on the hard disk.

When it infects a file, the virus replaces the first instruction in the host program with a command that changes the normal execution sequence. This type of command is known as a JUMP command and causes the virus instructions to be executed before the host program. The virus then returns control to the host program, which then continues with its normal sequence of instructions and is executed in the normal way.

To be a virus, a program only needs to have a reproduction routine that enables it to infect other programs. Viruses can, however, have four main parts. A misdirection routine that enables it to hide itself; a reproduction routine that allows it to copy itself to other programs; a trigger that causes the payload to be activated at a particular time or when a particular event takes place; and a payload

that may be a fairly harmless joke or may be very destructive. A program that has a payload but does not have a reproduction routine is known as a Trojan.

**2. C. Now read the whole text to find the answers to these questions.**

1) How are computer viruses like biological viruses? 2) What is the effect of a virus patching the operating system? 3) Why are some viruses designed to be loaded into memory? 4) What examples of payload does the writer provide? 5) What kind of programs do viruses often attach to? 6) How does a Trojan differ from a virus?

**2. D. Match each virus routine to its function.**

<b>Routine</b>	<b>Function</b>
1. misdirection	a. does the damage
2. reproduction	b. attaches a copy of itself to another program
3. trigger	c. hides the presence of the code
4. payload	d. decides when and how to activate the payload

***Cause and effect.***

**We can describe the links between each event in a number of ways:**

1. Using <i>cause + to V</i> or <i>make + V</i> .	A date or event occurs which <i>causes (makes)</i> the trigger routine <i>to run</i> .
2. Putting the events in sequence and using a causative verb.	The trigger routine runs, which <i>activates</i> the payload routine.
3. Using a <i>when</i> clause.	<i>When</i> the trigger routine runs, the payload routine activates.

**3. Describe the effects of these viruses and other destructive programs.**

1) logic bomb-example: **A.** A dismissed employee's name is deleted from the company's payroll; **B.** A logic bomb is activated. **C.** All payroll records are destroyed.

2) Form (Boot sector virus): **A.** A certain date occurs; **B.** A trigger routine is activated; **C.** Keys beep when pressed and floppies are corrupted.

3) Beijing (Boot sector virus): **A.** The operator starts up the computer for the one hundred and twenty-ninth time; **B.** A trigger routine is activated; **C.** The screen displays, 'Bloody! June 4,1989'.

4) AntiEXE: **A.** The infected program is run; **B.** The boot sector is corrupted; **C.** The disk content is overwritten; **D.** Data is lost.

**4. A. Match the crimes to the short descriptions which follow.**

1. Salami Shaving	a) Leaving, within a completed program, an illicit program that allows unauthorized - and unknown - entry.
2. Denial of Service attack	b) Using another person's identification code or using that person's files before he or she has logged off.
3. Trojan Horse	c) Adding concealed instructions to a computer program so that it will still work but will also perform prohibited duties. In other words, it appears to do something useful but actually does something destructive in the background.
4. Trapdoors	d) Tricking a user into revealing confidential information such as an access code or a credit-card number.
5. Mail bombing	e) Inundating an email address with thousands of messages, thereby slowing or even crashing the server.

6. Software Piracy	f) Manipulating programs or data so that small amounts of money are deducted from a large number of transactions or accounts and accumulated elsewhere. The victims are often unaware of the crime because the amount taken from any individual is so small.
7. Piggybacking	g) Unauthorized copying of a program for sale or distributing to other users.
8. Spoofing	h) Swamping a server with large numbers of requests.
9. Defacing	i) Redirecting anyone trying to visit a certain site elsewhere.
10. Hijacking	j) Changing the information shown on another person's website.

**4. B. Work in pairs. Search the web and find out some details of a recent computer crime. Tell the group how the crime operated and its effects.**

**5. A. Work in small groups. Consider these examples of computer disasters. How could you prevent them or limit their effects?**

1) You open an email attachment which contains a very destructive virus. 2) Someone guesses your password (the type of car you drive plus the day and month of your birth) and copies sensitive data. 3) Your hard disk crashes and much of your data is lost permanently. 4) Someone walks into your computer lab and steals the memory chips from all the PCs. 5) Your backup tapes fail to restore properly.

**5. B. Study this table of security measures to protect hardware and software. Which measures would prevent or limit the effects of the disasters in 4. A?**

1) Control access to hardware and software	<ul style="list-style-type: none"> <li>a) Lock physical locations and equipment.</li> <li>b) Install a physical security system.</li> <li>c) Monitor access 24 hours a day.</li> </ul>
2) Implement network controls	<ul style="list-style-type: none"> <li>a) Install firewalls to protect networks from external and internal attacks.</li> <li>b) Password-protect programs and data with passwords which cannot easily be cracked.</li> <li>c) Monitor username and password use – require changes to passwords regularly.</li> <li>d) Encrypt data.</li> <li>e) Install a callback system.</li> <li>g) Use signature verification or biometric security devices to ensure user authorization.</li> </ul>
3) Protect against natural disasters	<ul style="list-style-type: none"> <li>a) Install uninterruptible power supplies and surge protectors.</li> </ul>
4) Backup data and programs	<ul style="list-style-type: none"> <li>a) Make incremental backups, which are copies of just changes to files, at frequent intervals.</li> <li>b) Make full backups, which copy all files, periodically.</li> <li>c) To protect files from natural disasters such as fire and flood, as well as from crimes and errors, keep backups in separate locations, in fireproof containers, under lock and key.</li> </ul>
5) Separate and rotate functions	<ul style="list-style-type: none"> <li>a) If functions are separate, then two or more employees would need to conspire to commit a crime.</li> </ul>

	<p>b) If functions are rotated, employees would have less time to develop methods to compromise a program or system.</p> <p>c) Perform periodic audits.</p>
6) Protect against viruses	<p>a) Use virus protection programs.</p> <p>b) Use only vendor supplied software or public domain or shareware products that are supplied by services that guarantee they are virus-free.</p>

**5. C. Find words or phrases in the table which mean:**

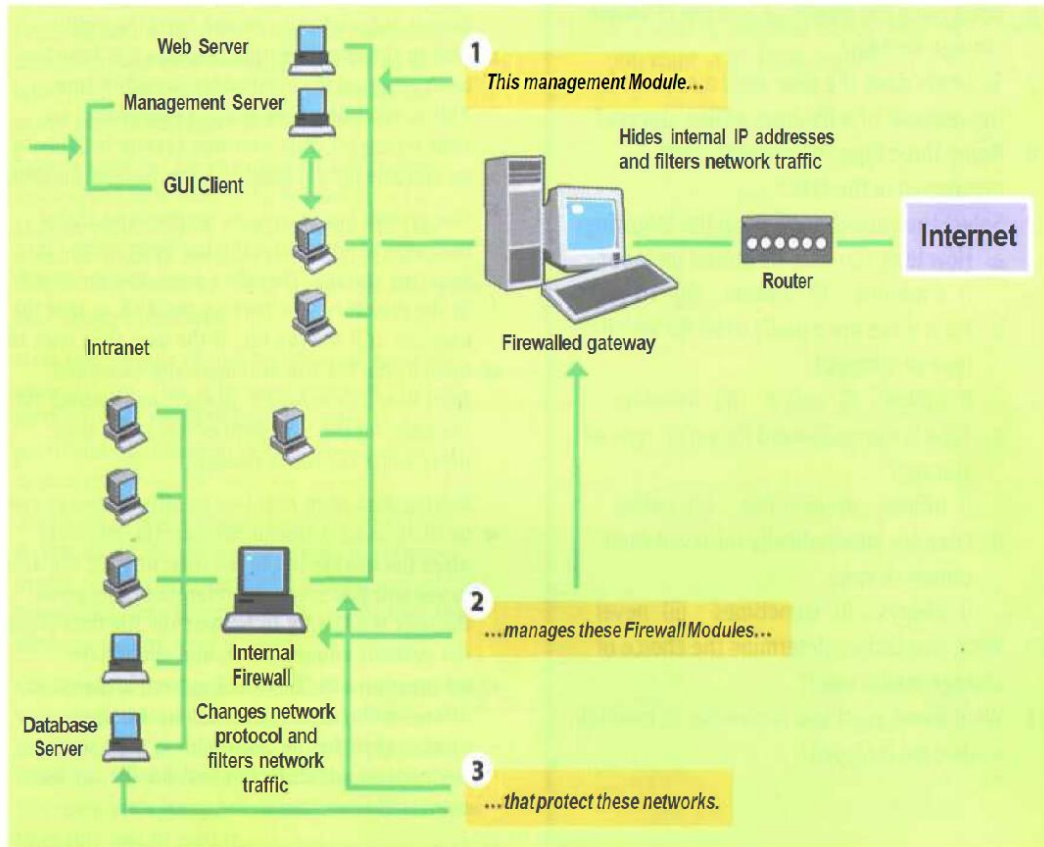
1) Copies of changes to files made to reduce the risk of loss of data.  
 2) Software available for a short time on a free trial basis; if adopted a fee is payable to the author.  
 3) Cannot be disrupted or cut.  
 4) Put at risk.  
 5) Deciphered, worked out.  
 6) Protect data by putting it in a form only authorized users can understand.  
 7) A combination of hardware and software to protect networks from unauthorised users.  
 8) Observe and record systematically.  
 9) Measuring physical characteristics such as distance between the eyes.  
 10) At regular intervals.

**5. D. Share your experience. Have you ever faced the problems mentioned in 4. A or other's connected with data security? Do you take any measures enumerated in 4. B to protect your software and hardware?**

**6. Study this diagram of a firewalled network system. Write a description of how it operates. You may need to do some research on firewalls to supplement the diagram. Your description should answer these questions:**

- 1) What is its function?
- 2) What does it consist of?
- 3) How are the firewalls managed?
- 4) How does it control outgoing communications?

## 5) How does it prevent external attack?



## UNIT 10. IT support

### 1. A. Work in small groups. Discuss these questions.

1) What was the last problem you had with an electronic device? What other problems could happen? 2) When you have problems with a device, what do you do? How can you find help?

### 1. B. Put these sentences in the correct order.

- Ah. Have you tried restarting your computer?
- Could you do that? And if you still have a problem, just call me again.
- Does it say anything else?
- Hi, help desk here. My name is Tuki. How can I help you?



- Er ... no, I haven't.
- OK. Can you tell me exactly what happens?
- OK. Thanks very much. I'll do that.
- I Sure. When I press "Send" I get an error message saying 'This program has found a problem and needs to close'.
- Yes, hi. I've got a problem with my email. Whenever I try to send a message, the program crashes.
- I Well, something about sending an error report to the software company. Oh, and an error code: it says 'Error 35A4'.

**1. C. Read this dialogue and complete it with the words:** *Checked; disconnected; found; go; switched type; tight; unplugged; worked; working.*

Haider: Hello, IT Help Desk.

Maryam: Hi, this is Maryam from Human Resources.

Haider: Hi, this is Haider. How can I help you, Maryam?

Maryam: I (1) \_\_\_ my computer off yesterday and today I can't turn it on.

Haider: What (2) \_\_\_\_\_ of computer do you have?

Maryam: I'm not sure. It's a desktop computer. It (3) \_\_\_\_\_ fine yesterday.

Haider: Don't worry. Have you (4) \_\_\_\_\_ the cable connections?

Maryam: No, I haven't. I can see some cables but I don't know which cable goes where.

Haider: Make sure all cables are (5) \_\_\_\_\_ and fully plugged in.

Maryam: Ok, give me a sec. Oh, I think I've (6) \_\_\_\_\_ the problem. I have one cable that is (7) \_\_\_\_\_ It's the power cable. Where does it go?

Haider: The power cable should (8) \_\_\_\_\_ the computer.

Maryam: OK, done. Let me try now. It's (9) \_\_\_\_\_ fine. Sorry about that.

Stupid of me.

Haider: Maybe the cleaners (10) \_\_\_\_\_ in the three-pronged port on your PC by mistake last night.

Maryam: Maybe. Good, we've solved the problem. Thank you, Haider.

Haider: You're welcome. Have a good day.

Maryam: You too.

**2. A. Look at the conversations again and underline all the examples of the present perfect and the past simple.**

**2. B. Complete these conversations with the correct present perfect or past simple form of the verbs in brackets.**

1) A: It's a pity your new mobile phone isn't working \_\_\_\_\_  
(you/charged) the battery?

B: Yes, I \_\_\_\_\_ (charge) it this morning.

2) A: \_\_\_\_\_ (you/repair) the computers yesterday?

B: No, \_\_\_\_\_

3) A: I'm sure we'll get your computer working again. First, though, some questions: what \_\_\_\_\_ (you/try) so far?

B: Well, I \_\_\_\_\_ (restart) it five minutes ago.

4) A: \_\_\_\_\_ (you/receive) my email yet?

B: No, I \_\_\_\_\_ (not receive) anything from you today.

A: Oh, \_\_\_\_\_ (you/check) your junk mail folder?

**2. C. Use these prompts to write questions and short answers in the present perfect or past simple.**

*you/restart the computer/yet/? (No)*

*A: Have you restarted the computer yet? B: No, I haven't.*

1) you/check the manual/yet/? (Yes) 2) they/contact support/last week/? (No)  
3) you/check the cable/yet/? (Yes ) 4) you/test the broken computer/yesterday/?  
(No) 5) you/try inserting another DVD/? (Yes)

**2. D. Work in pairs. Have you ever had a problem with any of these?**

**What happened?**

*cable or connection    computer    database    monitor    email client*  
*internet connection    LAN connection    password    peripheral device*

**3. A. Diagnosing a fault**

<b>1. Using probably</b>	You <i>probably</i> have a driver fault.
<b>2. Using phrases</b>	<i>It sounds as if</i> you have a driver fault.

*Giving advice*

<b>1. Using an imperative</b>	<i>Try to</i> reinstall the sound drivers.
<b>2. Using the modal verb should</b>	You <i>should</i> reinstall the sound drivers.
<b>3. Using recommend/advise</b>	<i>I recommend reinstalling</i> the sound drivers.  <i>I recommend that you reinstall</i> the sound drivers.  <i>I advise you to</i> reinstall the sound drivers.
<b>4. Using special phrases</b>	<i>The best thing (good idea) to do is to</i> reinstall the sound drivers

**3. B. Study these steps to take before you phone for technical support.**

**Rewrite each one using the clue given.**

1) Reboot your PC to see if the problem recurs, (should). 2) Use your PC's on-board diagnostic and repair tools. (recommend). 3) Record the details of the problem so you can describe it accurately. (good idea). 4) Note your system's model name and serial number. (advise). 5) Keep a record of hardware and software you've installed along with any changes you've made to settings. (strongly recommend). 6) If you think hardware may be at fault, figure out how to open the case. (should). 7) Visit the vendor's website and check the FAQs. (best)

thing). 8) Avoid phoning in peak times. (never). 9 Have your system up and running and be near it when you call. (good idea). 10) When you reach a technician, tell him or her if you may have caused the problem. (advise).

**3. C. Complete these conversations. Use the words in brackets and language from the Language box. Add any other words necessary.**

1) A: My app hasn't updated to the latest version.

B: Your phone settings might be wrong. If you \_\_\_\_\_  
(change/settings/app/update) soon.

2) A: My phone isn't sending or receiving data.

B: May be the network connections are switched off. Try \_\_\_\_\_  
(check/network and connections settings).

3) A: My phone's running really slowly.

B: There might be some **bloat ware** on it, which you probably don't need.  
Try (remove/it).

4) A: I've just got a really high phone **bill**. It's too expensive!

B: You need to be very careful with some mobile phone data plans, to make sure you don't go over your **usage limit**. If you \_\_\_\_\_  
(check/usage/regularly/you/be) OK.

**3. D. Complete these definitions with the words in bold in 3. C.**

1) the amount of something that you can use

2) software that some computer and mobile phone companies put on their products as advertising

3) a document showing how much you have to pay for something

**3. E. Diagnose these faults and provide advice on each problem.**

1) My laser printer produces very faint copies. 2) When I print, three or four sheets come through the printer at the same time. 3) My spreadsheet does not seem

to add up correctly. 4) Everything I type appears in capitals. 5) My PC is switched on but the monitor screen is blank. 6) I tried to print a document but nothing came out of the printer. 7) My monitor picture is too narrow. 8) My monitor screen flickers. 9) My mouse responds erratically. 10) The time display on my computer is one hour slow. 11) When I print out a page, the first two lines are missing. 12) My computer sometimes stops and reboots itself. The lights dim at the same time.

**4. A. Complete the service reports for the IT support team. Use the words:** *check, saved, file, install, move, resend, run, version, viruses.*

1.

<b>Fault diagnosis questions</b>	1) What (1) ____ of Office do you have? 2) What is the version of the (2) ____ ?
<b>Possible solutions</b>	1) If you have newer version, (3) ____ an Office patch. 2) Ask the sender to save the file in an older version and (4) ____ it.

2.

<b>Fault diagnosis questions</b>	1) Have you (5) ____ the file? 2) Are there any messages about (6) ____ in the attachment?
<b>Possible solutions</b>	1) (7) ____ the attachment changes. 2) Look for the file in Internet Temporary Files.

3.

<b>Fault diagnosis questions</b>	1) What (8) ____ of Office do you have? 2) Have you checked the Recycle Bin? 3) Have you (9) ____ disk defragmenter recently?
<b>Possible solutions</b>	1) If the file is in the Recycle Bin, (10) ____ it to a folder in My Documents. 2) If the file isn't in the Recycle Bin, install undeleted software.

**Match the service report to the problems:**

1) Word file won't open in Office. 2) Wants to recover deleted files. 3) Lost a file opened from an attachment.

**4. B. Work in pairs. Put these steps in solving an IT problem in the correct order.**

- a) Decide which of the possible solutions is the most likely.
- b) If that doesn't work, try another solution.
- c) Check what the symptoms of the problem are.
- d) Continue this process until something works.
- e) Think of some possible solutions.
- f) Try the most likely solution.

**4. C. Work in pairs. Practice a phone call to the company IT help desk.**

**Make up your own reasons for calling and solutions.**

<b>Student A</b>	<b>Student B</b>
1) Call the IT help desk. You cannot access mail server. Ask for help. You changed your password last week.	Help Student A with the problem. The mail server asks for a username and password. Has Student A used the wrong password?
2) Help Student B with the problem. At the moment the Internet connection is down. Try again later.	Call the IT help desk. You cannot access the Internet at the moment. Ask for help.
3) Call the IT help desk. You can't print out on network. Ask for help.	Help Student A with the problem. There is a new default printer.
4) Help Student B with the problem.	Call the IT help desk.

Change screen resolution?	The opened page is too large for the screen
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## UNIT 11. Jobs in IT

### 1. A. What do the following people in computing do? Match the job to its description.

*database administrator, helpdesk supervisor, project manager, software developer, support technician, systems analyst*

1) I'm Maria. I have a great job. I write software for the company's computers.

2) I'm Ahmed. I supervise a team of technical support people. When our customers have a problem, we help them to get things working again.

3) Hello. Freddy here. I work for XBM Technology. I'm responsible for our IT projects. I have to plan projects and make sure they're finished on time, and also that they don't cost too much money! It's a very stressful job!

4) My name's Hana. I look after all the computers in the company's offices. I set up new computers, install software and generally keep everything working. And if someone has trouble with their computer, it's me who has to diagnose the problem and fix it.

5) My name's Timothy but most people just call me Tim. In my job, I design databases, then develop them and later maintain them.

6) I'm Sophie. I have a very interesting job. When a company wants us to write software for them, I visit them and find out exactly what they need. Then I write specifications for the software. Our software developers then write the software to match the specifications.

### 1. B. Read 1. A again. Complete these collocations.

**Example:** write *\_software\_*

1) supervise \_\_\_\_\_; 2) have \_\_\_\_\_; 3) be responsible \_\_\_\_\_ it projects; 4) look \_\_\_\_\_ computers; 5) install \_\_\_\_\_; 6) diagnose \_\_\_\_\_; 7) design \_\_\_\_\_; 8) maintain \_\_\_\_\_; 9) write \_\_\_\_\_ for software.

**1. C. Work in pairs or small groups. Discuss these questions, use collocations from 1. B:**

1. What other IT jobs you know?
2. What do people in these jobs do?
3. Which jobs would/wouldn't you like to do? Why?

**2. A. Work in three groups. Choose a technology company and list activities the company carries out.**

1. Futachiba

Futachiba is a leading international provider of computer hardware. The company is among the top five suppliers internationally of server and among the top ten manufacturers of laptop computers. We have production facilities in six countries and we sell our products to almost every country in the world. With service centers in all our major markets, we provide a very high level of customer service

2. IBgroup

We are a fast-growing private company that supplies cloud computing services internationally. Our products include online office applications such as word processing, spreadsheet, presentation and database programs, which people can use on the internet anywhere and at any time. Our clients include major corporations, as well as many small and medium-sized companies.

3. Digital World



At Digital World we proudly design the most popular games in the world! We are excited every day by the great feedback we get from our favorite people: our game-playing customers. You can play our award-winning games on all the major computer operating systems, including Windows and Mac OS. Many of them are also available for Apple iOS and Android. Our wonderful staff started developing games in 2005 and continue to work on new, highly entertaining products. We expect to launch the new version of our biggest game, War of the Suns, next month.

**2. B. Read the company profiles in 2A again and answer these questions.**

Which company or companies

1. is getting bigger?
2. develops software?
3. makes things in more than one country?
4. has a new product to launch?
5. sells software for use on the internet?

**2. C. Work in pairs.**

**Underline five types of software in the company profiles in 2A. Then think of examples of each. What might people use them for?**

**Think of real IT organizations such as Apple and Google. Which would you prefer to work for? Why?**

**2. D. You are preparing a magazine article about local IT companies. Write at least 7 questions for a questionnaire to find out what each company does.**

**Work in pairs. Take turns to ask and answer the questions in your questionnaire. Tell the group about your partner's company.**

**3. A. Look at these signs. What are the rules?**



Do you have any of the rules in your workplace or university? Do you think they are good rules or bad rules? Why?

**3. B. Read the memo and find words that match these definitions.**

1. person in charge of IT \_\_\_\_\_
2. keeping something safe \_\_\_\_\_
3. information such as numbers and details about people \_\_\_\_\_
4. a secret word that you type into a computer before you can use it \_\_\_\_\_
5. a group of connected computers \_\_\_\_\_
6. having only letters and numbers \_\_\_\_\_
7. letters, numbers, punctuation marks, etc. \_\_\_\_\_
8. people you work with \_\_\_\_\_

FROM: Chief Information Officer XBM Digital

TO: All staff

SUBJECT: IT security

As you know, many new staff have joined us at XBM Digital recently, so now is a good time for a reminder about some of our rules. Security is important, and these rules will help us to keep our IT systems and data secure.

Firstly, passwords are important for keeping the network secure. Don't use common words or numbers as passwords, such as birthdays or names of your children. Passwords must be alphanumeric and be at least eight characters long.

You need to change your password every month or more frequently. Also, you should not share it with anyone, including your colleagues.

**Rules**

<p><b>We use <i>must</i>, <i>mustn't</i> and <i>have to</i> to show strong obligation and to express rules.</b></p>	<p>Passwords <i>must</i> be at least eight characters long. I <i>have to</i> go to the canteen to eat! I <i>can't</i> even have an</p>
<p><b>We can also use <i>should</i>, <i>shouldn't</i>, <i>can't</i> and <i>need to</i> to talk about rules.</b></p>	<p>apple at my desk!</p>
<p><b>We also use <i>imperatives</i> to give rules. Use them carefully because they can sound impolite.</b></p>	<p><i>Keep</i> your password secret. <i>Don't share</i> your password with other people.</p>

**3. C. Work in pairs or small groups. Write workplace rules for some of these activities. What reasons can you think of for each rule?**

- installing new software
- connecting personal devices to company computers
- playing computer games
- using social networking sites such as Facebook
- using mobile phones
- switching off your computer at night
- downloading files
- streaming music or video

**3. D. Work in small groups. Write a list of the technology-related rules in your place of study. Then compare your list with another group. Which rules would you like to change? Why?**

**4. A. Complete the company description and job advertisement with the following words in the box.**

*Client; diagnosing; from time to time; installing; launched; maintaining; provide; service centers; spreadsheet and database; supplies*

### **Our company and what we do**

PDS (Pacific Digital Solutions Limited) is an international technology company which (1) \_\_\_\_\_ software, training and support services. We employ over 6,000 people across 27 (2) \_\_\_\_\_, serving clients in 46 countries. Clients tell us that we (3) \_\_\_\_\_ excellent customer service. Our products include office software such as (4) \_\_\_\_\_ applications. We have recently (5) \_\_\_\_\_ a range of cloud computing services. Our consulting services help (6) \_\_\_\_\_ companies to work more efficiently and to make more money. We provide advice on which systems to buy and how to set them up. We can even carry out the installation for clients if they request this.

### **Technical officer**

Tired of staying indoors all day? Want to travel as part of your job and meet different people every day? Then we have an excellent job for you! PDS serves clients all around the world. Our Sydney office requires three people to look after our customers across Australia.

To apply for this job, you must have: a Diploma of Computer Servicing; experience in (7) \_\_\_\_\_ operating systems, (8) \_\_\_\_\_; a full driving license. You should also have a willingness to work evenings and weekends (10) \_\_\_\_\_; a friendly personality and good customer service skills. Salary and benefits on application.

### **4. B. Look again at the company description and job advertisement in 4.**

**A.** Which one of these patterns do they follow?

1) A mixture of general and detailed information throughout; 2) general information first and more detailed information later; 3) more detailed information first and more general information later; 4) only detailed information.

**4. C. Write a job advertisement for an IT job you would like. Use the pattern you identified.**

**5. A. Work in groups. Discuss these questions.**

1) How do you feel about interviews?

2) Have you had an interview? Tell the group about an interview experience.

What was the interview for? What happened in the interview? How did you feel?

**5. B. Work in the same groups. Discuss the personal and technical skills you might need if you apply for these jobs.**

*help desk supervisor*

*project manager*

*software developer*

*systems administrator*

*systems analyst*

*web developer*

**Example:** If you work as a help desk technician, you have to be good at team work. You should also like working with customers.

**5. C. Work in new groups. Discuss these questions.**

1 What might you be asked about in a job interview?

2 At what stage in the interview can you usually ask questions? What might you ask the interviewer about?

**6. Work in pairs. You are going to roleplay a job interview. Read the job advertisement in 4 A. Then follow these steps.**

1) Interviewers, think of questions to ask the interviewee. Interviewees, predict what questions you might be asked and prepare answers. Make sure your questions and answers include these topics:

- experience
- technical skills

- personal skills
- why the candidate wants the job

2) Roleplay the interview. Interviewees, remember to ask the interviewers some questions at the end.

**Swap roles and repeat the activity. Use your job advertisement in 4 C.**

## UNIT 12. Video gaming

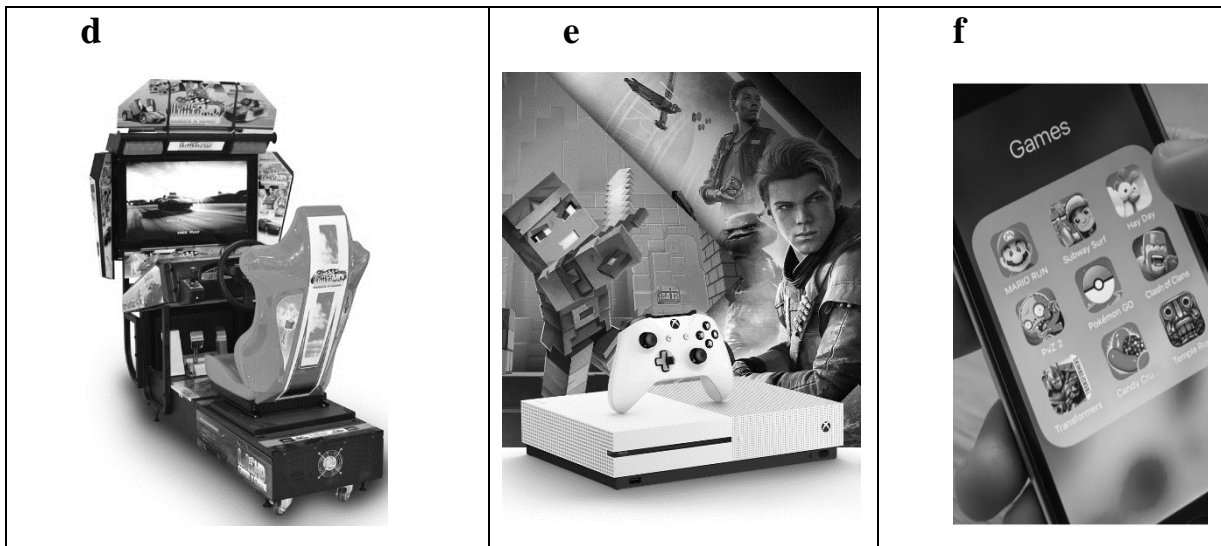
### 1. A. In pairs, discuss these questions.

- 1) Do you play video games?
- 2) What are your favourite games?
- 3) What video games are popular right now?
- 4) What was your first video game?

### 1. B. Label the pictures (a-f) with the types of games.

*PC games    Console games    Arcade games    Handheld games    Mobile phone games    Massively multiplayer online games.*





**1. C. Video games are played on a variety of electronic devices, or platforms. Complete these sentences with game platforms from the box and types of game from B.**

*Personal computer      Video game consoles*

*Portable gaming devices      smartphones*

1) \_\_\_\_\_ are played on \_\_\_\_\_, such as the Sony PS4 or Microsoft Xbox One. In the past, these electronic devices were just connected to a standard TV or video monitor; now they can also be connected to the Net, via cables or wirelessly.

2) \_\_\_\_\_ are played on \_\_\_\_\_, such as the Sony PSP and the NintendoDS. 3 Don't worry if you don't have a game console.

3) You can still play \_\_\_\_\_ on a \_\_\_\_\_. The graphics are even more impressive if you have a high resolution monitor. You can buy games on CDs and DVDs, or download them from the Internet.

4) \_\_\_\_\_ allow you to play against other users in other parts of the world using the Internet — something unique to electronic gaming. Players connect to a game server hosted by an ISP, a game company, or an individual enthusiast.

5) Believe it or not, if you own a \_\_\_\_\_ and have even touched Candy Crush, you're a video game player. You can find quite a lot of downloads in the App Store and on Google Play.

6) \_\_\_\_\_ are played on coin-operated machines, typically installed in restaurants, bars and amusement arcades. For example, you can fly an aircraft or a spaceship using a joystick.

**1. D. In pairs, discuss these questions. Give reasons for your answers.**

1. Which is your favourite game platform? What advantages and disadvantages does it have over other game platforms?

2. Which game platform would you most like to own?

3. Do you play games on your mobile phone? What is the experience like?

**2. A. How many different game genres can you think of? In pairs, make a list and then read the text to see how many genres from your list are mentioned (you probably mentioned more) .**

### **GAME GENRE**

There are so many different genres and mixes of genres that it's difficult to put each game into a specific category. In the following article we'll cover the basic genres that differentiate between games.

The First-person shooter (FPS) and Action genres are currently the most popular. Games like Half-Life, Halo and Call of Duty are the most popular games in the FPS category. For Action, innovative titles like the Grand Theft Auto series, Gears of War and Splinter Cell are huge successes.

The Role-playing game (RPG) genre has remained strong throughout the entire history of console and PC gaming. Current hits like Final Fantasy XII, Oblivion and the Knights of the Old Republic series are all based on RPG roots. The recent development of massively multiplayer online RPGs has been made



possible by widespread broadband access, allowing gamers to play internationally with thousands of people across the globe in a constant virtual world.

Adventure games and Puzzle games remain strong despite being limited in scope and technology. The new concept of party games — where people play together in multiplayer mode — has recently injected new life into this genre. Titles like *Zelda* and *Wario-Ware* are familiar names.

Sports games are an increasingly popular portion of the gaming industry. Electronic Arts (EA) have been making games licensed from the NBA, NFL and MLB for over a decade. Another sector of the Sports industry is the entire racing sub-genre. Massive hits like the *Burnout* and *Need for Speed* series are hugely exciting, and the crashes can be realistic and terrifying.

The Simulation genre has enjoyed wild success, including the best-selling PC games of all time: *The Sims 2*. The entire *Sims* series, designed by Maxis, is dominant in this genre. Jet fighter and flying sims are also important types of simulation game.

Strategy is a genre mainly restricted to PC, largely because the mouse and keyboard are central to gameplay. There are a few good Strategy games for console, however. Big names in Strategy include *Warcraft III*, *Starcraft*, *Command and Conquer* and *Warhammer40,000*.

Finally, we have the Fighting genre. Developed from nearly hit games like *Street Fighter II*, Fighting games have enjoyed a renaissance as they've been updated fully to include 3-D characters and arenas. Titles like *Dead or Alive*, *Tekken* and *Soul Calibur* are big favourites.

So what kind of game player are you? Chances are that if you're a PC gamer, you prefer FPS, RPG, Simulation, and Strategy games. The console gamer typically enjoys Sports, Racing, Fighting, RPGs, and a few FPS titles. Of course, many people own both a console and a PC, therefore combining the best of both worlds.

**2. B. These statements about gaming are all false. Read the text again and correct them.**

- 1) Role-playing games are currently the most popular.
- 2) Massively multiplayer online RPGs have been made possible by widespread internet access.
- 3) Oblivion is an Action game.
- 4) The Sims series is the least popular in the Simulation category.
- 5) Strategy games are mainly restricted to game consoles.
- 6) World of Warcraft belongs to the Fighting genre.
- 7) Console gamers typically prefer Simulation and Strategy games.

**2. C. In pairs, discuss these questions. Give reasons for your answers.**

- 1) What is your favourite and least favourite genre of games
- 2) What are your favourite games? Describe them to your partner.

### **3. Adverbs**

<b>We use adverbs to give information about an action.</b>	The Action genre of games is <i>currently</i> the most popular.
<b>We usually form an adverb by adding -ly to an adjective.</b>	typical —» <i>typically</i>
<b>Note that not all words that end in -ly are adverbs. These words are adjectives:</b>	friendly, deadly, lovely, lonely
<b>Some words have the same form as an adjective and an adverb (e.g. fast, hard, early, late, daily, monthly).</b>	New games require a <i>fast</i> processor. (adjective) The processor speed tells you how <i>fast</i> your PC executes instructions. (adverb)

**3. A. Complete these sentences with the adverbial form of the words in brackets.**

- 1) Simulation games are \_\_\_\_ (wide) used in both universities and businesses.
- 2) Massively multiplayer online RPGs have \_\_\_\_\_ (recent) become more popular, mainly due to faster internet connections.
- 3) Strategy is a genre \_\_\_\_\_ (main) restricted to PC.
- 4) Video games often come with a clear set of motivation tools, such as scores and moving to higher levels when a player performs \_\_\_\_\_ (good)
- 5) Cheap PCs don't process data \_\_\_\_\_ (fast) enough to support high-end games.

**3. B. Are the words in bold adjectives or adverbs? Write adj. or adv.**

- 1) Atari's platform was the most popular **early** video game console, and many developers emulated Atari games to attract customers.
- 2) The chess game ended **early**, at the 24" move.
- 3) On the TPS Report gaming blog, you will find reviews, a forum and a **monthly** podcast.
- 4) The podcast is broadcast **monthly**.
- 5) You have to work **hard** to succeed in the gaming industry.
- 6) Some experts say that **hard** work makes people happy.

**4. A. Work in small groups. Study the following infographics. Speak about current trends in video gaming**

## Gaming demographics

% of internet users gaming on any device who are...



## Gaming by region

% of internet users in each region who game on any device



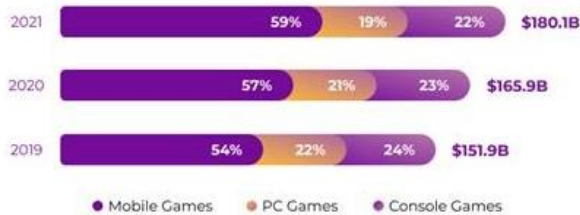
## Console ownership and interest

% of gamers who use/are interested in purchasing the following consoles for gaming



Question: Which of these devices do you use for gaming? Source: GlobalWebIndex Q3 2019  
Base: 23,057 gamers aged 16-64

## Global Games Market by Platform 2019-2021



### Mobile Game Types



### Monetization Trends



**4. B. Work in small groups. Write a video game review. Use the following plan**

- 1) Name the game
- 2) Aim of the game
- 3) Difficulty rating of the game (1 to 10)
- 4) Main character(s)
- 5) Quality of the graphics
- 6) Is it fun to play? Why (Why not)?
- 7) How would you rate this game? (1 to 10)

**UNIT 13. Technology and society**

**1. A. Read and discuss the quotes about technology.**

- 1) What do they say about the relationship between society and technology?
- 2) Do you agree or disagree with them?
- 3) Do you find any of them funny?

1. The factory of the future will have only two employees, a man and dog. The man will be there to feed the dog. The dog will be there to keep the man from touching the equipment.

Warren G. Bennis

2. The purpose of medicine is to prevent significant disease, to decrease pain and to postpone death... Technology has to support these goals, if not it may be even counterproductive.

Dr. Joel J. Nobel

3. Technology shapes society and society shapes technology.

Robert W. White

4. When took office, only high energy physicists had ever heard of what is called the Worldwide Web.... Now even my cat has its own page.

Ex-President Bill Clinton

5. The real danger is not that computers will begin to think like men, but that men will begin to think like computers.

Sydney J. Harris

**2. A. Answer the questions.**

- 1) Do you have any devices that help you to monitor your health and keep fit?
- 2) What are they? Which ones would you like to have?
- 3) How can technologies help health professionals?
- 4) Do you know any cases when technologies helped to save patient's life?

**2. B. Read part of a weekly radio program called 'Technology Today'. The subject of this week's extract is healthcare. Put the abstracts A-D into the correct place 1-5:**

*Presenter:* ...Today we are looking at emerging digital technology in Healthcare. We're going to predict how digital technology might affect one patient's pathway of care in the near future. Let's imagine the case of Sue who has a suspected heart attack. So let's start with Lynn, you're a paramedic... what will happen when Sue starts to have chest pains at home?

*Lynn:* 1 \_\_\_\_\_

*Presenter:* And Malik, you are a doctor at A & E Admissions

*Malik:* 2 \_\_\_\_\_

*Presenter:* Imogen, as the Hospital IT Manager, it sounds as if the hospital will be brimming with technology.

*Imogen:* 3 \_\_\_\_\_

*Presenter:* So Helen, once the panic is over and Sue's condition is understood what will happen to her?

*Helen:*4 \_\_\_\_\_

*Presenter:* And how about Sue's care once she's back at home?

*Helen:* 5. \_\_\_\_\_

**A.** Well, the hospital will be connected to a national data network and huge national database holding terabytes of every civilian's medical records. The whole hospital will be wireless-enabled so that with the correct security, actually a swipe card and password, doctors or nurses will be able to access a patient's records wherever they are in the hospital. They will be able to use their data tablet to set up a VoIP call with the patient's GP to discuss anything they're not sure of before treating the patient. They will be able to do a 3D CT scan and transmit the huge image file to a remote specialist, say in London, and, using our screen sharing application, will be able to get a second opinion within moments. All the hospitals will use the Digital Imaging and Communications in Medicine (DICOM) standard for handling, storing, printing, and transmitting information in medical imaging which allows us to send anything over any TCP/IP network, anywhere in the world to get images in front of the right medical expert.

**B.** Sue would still be monitored remotely at home. She would put on a monitoring device every morning that measures her temperature, blood pressure, respiration, and heart rate. She would then plug it into a broadband adaptor and the data would be transmitted to a database in the hospital and added to her patient records. The application would automatically display the data in a graph for the doctors to look at. The software would also be programmed to send an email alert to Sue's GP Surgery to arrange an appointment if her readings go over any thresholds or if the software calculates she is running out of medication, it automatically places an order for more which will arrive recorded delivery before she runs out.

C. Well, when Sue falls she dials the emergency services, speaks to the operator and asks for an ambulance. We will be there in less than ten minutes as we all have equipment to work out which ambulance is nearest to the patient and then we are directed to the patient automatically by the Sat Nav using the most direct route. We rush her to the hospital, monitoring her all the way.

D. I'm cardiac nurse, and I would look after Sue when we receive her as an inpatient for observation. I would visit her every day, and log on to the hospital systems using my digital clipboard. The clipboard would recognize the RFID tag in Sue's wristband. This tagging is a safeguard to make sure we don't give the wrong drugs to the wrong patients. I could give her tablets and the barcode reader on my clipboard would recognize and record the drugs I was giving her. If I went to use the wrong drug, the barcode reader would give an alert to prevent me doing this. I'd also take a few measurements, input them into the clipboard which would then transmit this information into Sue's digital patient records, so they are always up to date.

E. Yes, I am. We will already have Sue's full patient records by the time she is brought in to hospital. The ambulance will radio her Health Number ahead, and with that, all her details can be downloaded from the National Patient Records Database and will receive all the information here on my Mobile Clinical Assistant over the wireless LAN. This allows me to access all information whilst being as close as possible to the patient.

**2. C. Describe how the following pieces of technology were useful in Sue's treatment and care.**

1) GPS location; 2) Radio; 3) National Patient Records Database; 4) Wireless LAN; 5) Data tablet; 6) RFIDtag; 7) Barcode reader; 8) Remote monitoring device.



### *The passive*

We use the passive voice to describe processes, especially if we are more interested in the action itself than in the person who does the action. We can use *by* at the end of the sentence to say who or what does the action.

<b>Present Simple</b>	The hospital <i>is connected</i> to a national data network.
<b>Past Simple</b>	She <i>was brought in</i> to hospital
<b>Present Progressive</b>	She <i>is being treated</i> for shock.
<b>Future Simple</b>	The new system <i>will be installed</i> on the NHS network.
<b>Present Perfect</b>	The patient <i>hasn't been examined</i> yet.
<b>Modal verbs</b>	He <i>mustn't be given</i> penicillin.

**2. D. Complete the summary of Sue's experience after her illness. Change the active verbs in bracket to the passive. Use *by* if someone's name is mentioned. See the example.**

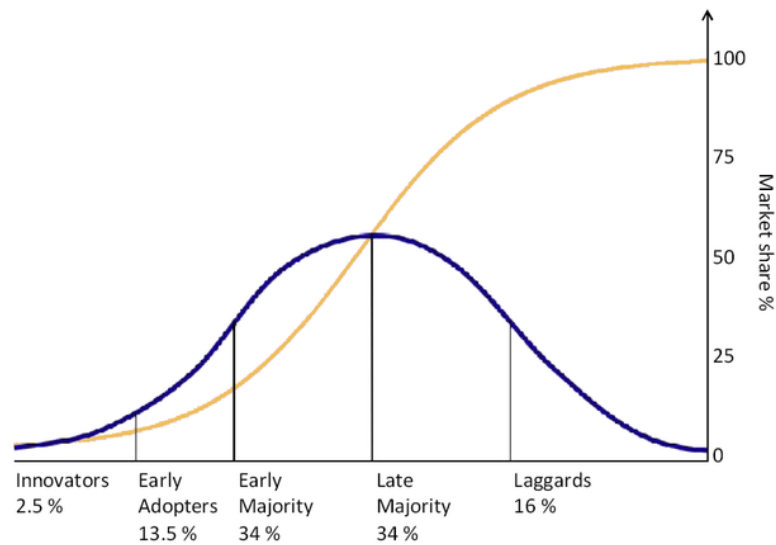
When Sue fell ill, (they rushed her) 0 she was rushed to hospital, and (they gave her) 1\_\_\_\_\_ emergency treatment as soon as she arrived. Then (they moved her) 2\_\_\_\_\_ to K ward, where (Helen looked after her) 3\_\_\_\_\_. (She visited her) 4\_\_\_\_\_ every day, and (she monitored her progress carefully) 5\_\_\_\_\_. (She recorded all the details of Sue's treatment) 6 \_\_\_\_ on a clipboard, and (someone transmitted the information) 7.\_\_\_\_\_ to Sues digital patient records.

Now Sue is back at home, where (they monitor her) 8\_\_\_\_\_ remotely. (A special device measures her heart and blood pressure) 9\_\_\_\_\_ which transmits the data to the hospital, where (someone adds it) 10\_\_\_\_\_ to her patient records. (Someone displays the data) 11\_\_\_\_\_ ona graph for the doctors to look at, and if she needs more medication, (someone sends it out) 12\_\_\_\_\_ automatically.

**2. E. Work with a partner. Give your predictions about the future of healthcare with advances in digital healthcare technologies.**

**3. A. Study the graph technology adoption lifecycle and match the groups of people to the definitions.**

Technology adoption is a term that refers to the acceptance, integration, and use of new technology in society. The process follows 5 stages, usually categorized by the groups of people who use that technology.



1. Innovators	a. Typically students and young part-time workers, this segment is fast to adopt to social media styles of technology.
2. Early adopters	b. Always first to purchase and use new technologies, these people are well educated with high incomes and risk-taking tendencies
3. Early majority	c. Usually aged 45+, these individuals are wary of change and only adopt new technology once it's become mainstream.
4. Late majority	d. The oldest segment, technophobes aren't so much scared of new technology as uninterested, preferring more traditional pursuits (TV, gardening, reading).

5. Laggards	e. Ambitious individuals who adopt technology fairly early for career and time-saving purposes
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**3. B. Work in small groups, discuss the following questions**

1. Which group (innovators, early adopters, etc.) do you belong to?
2. Give examples of technologies that follow the stages of innovators and laggards.
3. What is the stage for the following technologies? Justify your opinion.
  - a) television
  - b) cloud services
  - c) smartphones
  - d) social media
  - e) fitness tracker
  - f) drones
  - g) self-driving cars

**UNIT 14. Artificial Intelligence**

**1. A. Study these predictions of developments in IT from 1997. Which, if any, have come true? How likely are the others to come true? Give reasons for your decisions and compare answers with your partner.**

- 2000 - Electronic newspaper
- 2001 - Visual computer personalities on screens
- 2002 - Multiple channels of >100 Gigabits per second on single fibre
- 2003 - Hydraulic chair for VR games
- 2004 – Personal wearable health monitor
- 2005 - Intranets dominate over Internet
- 2008 - Fire fighting robots that can find and rescue people

2009 - Terabits per second on optical fibers over distance  
2010 - Robotic pets  
2015 - Robotic devices within blood vessels  
2020 - human: machine equivalence  
2025 - Artificial brain implants  
2030 – Extraterrestrials land and give us all their advanced technology overnight.

**1. B. How do you think developments in IT will affect these areas of life in the next ten years? Compare your predictions with others in your group. Try to agree on a ranking from most likely to least likely.**

1) commerce; 2) work; 3) the relationship between humans and computers

**1. A. Read the text below and answer these questions**

- 1) What are “augmented humans” or “transhumans”?
- 2) What will the digital twins be used for?
- 3) Which spheres of life will be transformed by drone technology?
- 4) When will the first commercially available quantum computer appear?
- 5) What is mass personalization?
- 6) Do you think you can tell “weak” from “strong” artificial intelligence?
- 7) Which of the author's predictions do you accept?

### **THESE 15 TECHNOLOGY TRENDS WILL DEFINE THE 2020S**

1. Artificial intelligence (AI) and machine learning.
2. The Internet of Things (IoT). This refers to the ever-growing number of “smart” devices and objects that are connected to the internet.
3. Wearables and augmented humans. What started with fitness trackers has now exploded into a whole industry of wearable technology designed to improve human performance and help us live healthier, safer, more efficient lives. In the

future, we may even see humans merge with technology to create “augmented humans” or “transhumans.”

4. Intelligent spaces and smart places.

5. Cloud and edge computing. We will take this to the next level.

6. Digitally extended realities. Encompassing virtual reality, augmented reality, and mixed reality, this trend highlights the move towards creating more immersive digital experiences.

7. Digital twins. A digital twin is a digital copy of an actual physical object, product, process, or ecosystem. This innovative technology allows us to try out alterations and adjustments that would be too expensive or risky to try out on the real physical object.

8. Voice interfaces and chatbots. Alexa, Siri, chatbots – many of us are now quite used to communicate with machines by simply speaking or typing our request. In the future, more and more businesses will choose to interact with their customers via voice interfaces and chatbots.

9. Robots and cobots. In certain industries, the future of work is likely to involve humans working seamlessly with robot colleagues – hence the term “cobot,” or “collaborative robot.”

10. Autonomous vehicles. The 2020s will be the decade in which autonomous vehicles of all kinds – cars, taxis, trucks, and even ships – become truly autonomous and commercially viable.

11. Genomics and gene editing. Advances in computing and analytics have driven incredible leaps in our understanding of the human genome. Now, we’re progressing to altering the genetic structure of living organisms (for example, “correcting” DNA mutations that can lead to cancer).

12. Drones and unmanned aerial vehicles. These aircraft, which are piloted either remotely or autonomously, have changed the face of military operations. But the impact doesn’t stop there – search and rescue missions, firefighting, law

enforcement, and transportation will all be transformed by drone technology. Get ready for passenger drones (drone taxis), too!

13. Quantum computing. Quantum computers – unimaginably fast computers capable of solving seemingly unsolvable problems – will make our current state-of-the-art technology look like something out of the Stone Age. As yet, work in quantum computing is largely restricted to labs, but we could see the first commercially available quantum computer by the end of this decade.

14. Mass personalization and micro-moments. Mass-personalization is, as you might expect, the ability to offer highly personalized products or services on a mass scale. Meanwhile, the term “micro-moments” essentially means responding to customer needs at the exact right moment. Both are made possible by technologies like AI, Big Data, and analytics.

15. 3D and 4D printing and additive manufacturing. Although this may seem low-tech compared to some of the other trends, 3D and 4D printing will have very wide applications – and will be particularly transformative when combined with trends like mass-personalization.

16. Strong artificial intelligence (AI), also known as artificial general intelligence (AGI) or general AI, is a theoretical form of AI used to describe a certain mindset of AI development. If researchers are able to develop Strong AI, the machine would require an intelligence equal to humans; it would have a self-aware consciousness that has the ability to solve problems, learn, and plan for the future [19].

***Predictions***

<b>Future perfect + time expressions: <i>by 2028, before the end of the decade</i></b>	<i>By 2029 scientists will have developed truly autonomous cars and ships.</i>
<b>Modal verbs of certainty</b>	<i>By 2030 geneticists may/might/could have created the first biologically optimized humans.</i>

<b>It's likely/possible/ certain +that clause</b>	<i>It's likely that computers will be used to develop other faster computers.</i>
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**3. A. Make predictions for 2030 for each of the following using the methods studied here. You may wish to use these verbs:**

*Develop disappear increase replace take over*

a) Smartphones; b) Intelligent homes and offices; c) monitors; d) the Internet; e) keyboards; f) visual recognition; g) money; h) shops; i) cloud services; j) language processing; k) Digital platforms (Facebook, Uber, and Airbnb); l) Nanotechnology and materials science.

**3. B. Write sentences similar in meaning to each of these predictions with IT in subject position. For example:**

*I don't think we'll use cable connections in future. (unlikely) It's unlikely that we'll use cable connections in future.*

- 1) I'm sure we won't use computer mice. (certain)
- 2) We may well have electronic chips in our bodies. (probable)
- 3) Computers could easily be used to develop other computers. (likely)
- 4) I don't think we'll replace teachers with robots. (unlikely)
- 5) There's a chance we'll develop alternatives to silicon. (possible)
- 6) I really don't think we'll have replaced the motor car before 2027. (very unlikely)
- 7) I'm almost sure we'll replace 4G in the next few years. (highly probable)
- 8) I'm definite we'll have more IoT devices. (certain)
- 9) We might adopt drones as passenger vehicles. (possible)
- 10) Doctors may be able to operate on patients at a distance. (quite likely)

**4. A. Work with a partner. One of you is a scientist the other is a journalist who wants to know the current trends in technology development. Roleplay the situation.**

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