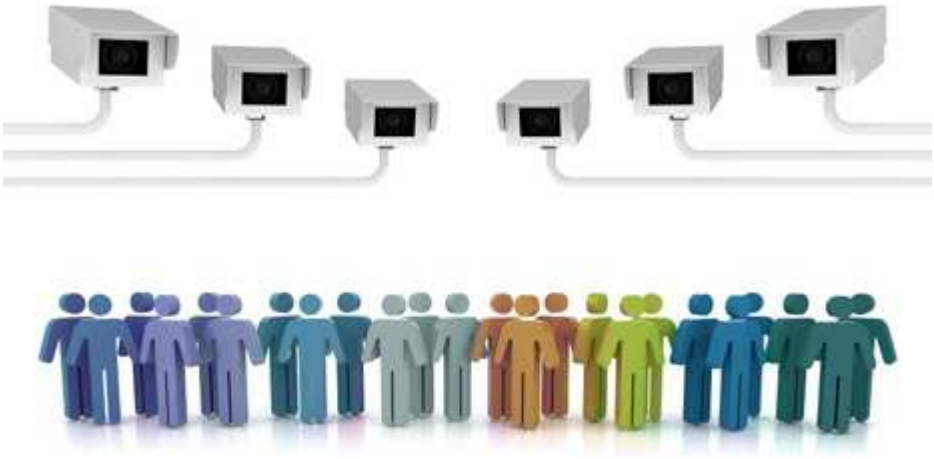
Е.А. НАСОНОВА

Professional English

for students of computer science

Учебное пособие



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Ивановский государственный химико-технологический университет

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Цель пособия – вовлечение студентов 1 курса, обучающихся по специальности «Информационные системы и технологии», в профессионально-ориентированное общение на английском языке, а также развитие учебной автономии студентов.

Пособие включает пять разделов, построенных по единому принципу, дополнительные тексты для самостоятельных занятий. В конце работы приложен «Глоссарий» по специальности.

Для студентов высших учебных заведений, изучающих информационные технологии и иностранный язык в сфере профессиональной коммуникации по программе бакалавриата, а также для всех, изучающих английский язык самостоятельно.

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What is an *autonomous learner*? What sorts of qualities and characteristics does an autonomous learner have? Are you an autonomous learner?

To become an autonomous learner you should bring the inner processes of your learning to the conscious level of your thinking.

You have to step into the shoes of the teacher and judge your own work as objectively as you can. By doing so, you can formulate an idea of your level of proficiency: discover weak and strong points and plan the directions of progress.

To do this we recommend you to fill out the form below

Getting to know each other questionnaire

Name .....

1. **Language background. Where did you study English?**
   - At school
   - At the courses
   - While traveling
2. **Language needs. In which areas of your career or day-to-day life do you expect to use the language?**
   - Communication with foreign partners
   - Telephone communication
   - Writing letters, business correspondence
   - Training abroad
   - Reading special literature
   - other: …….
3. **Language problems. When you use your English where do you experience most of the difficulties?**
   - Conversation
   - Understanding
   - Writing
   - Pronunciation
   - Vocabulary
   - Grammar
   - …other: ……
4. **What are your language learning purposes?**

   .....

   .....
5. **Which methods of studying the language do you prefer?**
   - Working with a text book at the lesson
   - Talking with a teacher on the subjects interesting to you
   - Doing exercises
   - Listening to the tapes
   - Reading on your own
   - …other: ……..

How to become a more effective learner

Look at these ways of studying and learning. Tick (√) the methods you currently use. Put an asterisk (*****) next to methods you'd like to use in the future.

Ways of studying	
Ask your teacher questions when you don't understand.	
Keep a vocabulary notebook and write example sentences, phonetics, and translations in it.	
Write new words on a flash-card – English on one side, Russian on the other. Learn three every day.	
Put lists of English words on your bedroom wall – use headings, e.g. "jobs".	
Regularly ask yourself "How would I say that in English?	
Regularly review your vocabulary notebook and grammar notes.	
Review the grammar from the last lesson before the next lesson.	
Watch films and TV programmes in English.	
Listen to the radio / music in English.	
Read websites / magazines / newspapers in English.	
Practise English with other people via email or the Internet.	
Keep a journal in English.	
Write something in English everyday – e.g. your response to a newspaper article, or web-story.	
Talk to other students in English outside of class.	
Use your MultiROM to learn and revise.	
Buy a grammar practice book.	
Use an English-English dictionary.	
If possible, take a holiday in an English-speaking country.	
Share your tips on how to study effectively with other people.	

Unit I

The digital age

STARTER 1 Discuss in pairs how computers are used nowadays.

READING 2 Read the text and check your answers to **1**.

TEXT: The digital age

We are now living in what some people call *the digital age*, meaning that computers have become an essential part of our lives. Young people who have grown up with PCs and mobile phones are often called *the digital generation*. Computers help students to **perform**[1] mathematical **operations** and improve their maths skills. They are used to **access the Internet**, to **do** basic **research** and to communicate with other students around the world. Teachers use projectors and interactive whiteboards to **give presentations** and teach sciences, history or language courses. PCs are also used for administrative purposes – schools use word processors[2] to **write letters**, and databases to **keep records** of students and teachers. A school website allows teachers to publish **exercises** for students to **complete** online[3]. Students can also enroll for courses via the website and parents can download[4] official reports.

Mobiles let you **make** voice **calls**, **send texts**, email people and download logos, ringtones or games. With a built-in[5] camera you can send pictures and make video calls in face-to-face mode. New smartphones combine a telephone with web access, video, a games console, an MP3 player, a personal digital[6] assistant (PDA) and a GPS navigation system, all in one.

In banks, computers **store**[7] **information** about the money held by each customer and enable staff to **access** large **databases** and to **carry out** financial[8] **transactions** at high speed. They also control the cashpoints, or ATMs (automatic teller machines), which **dispense money** to customers by the use of a PIN-protected card. People use a Chip and PIN card to pay for goods and services. Instead of using a signature to verify payments, customers are asked to **enter a** four-digit **personal identification number** (**PIN**), the same number used at cashpoints, this system makes transactions more secure. With online banking, clients can easily **pay bills** and **transfer money** from the comfort of their homes.

3 When you read a text, you will often see a new word that you don't recognize. If you can identify what type of word it is (noun, verb, adjective, etc.) it can help you guess the meaning.

Find the words (1-8) in the text above. Try to guess the meaning from the context – the surrounding words and the situation. Are they nouns, verbs, adjectives or adverbs?

1. perform
2. word processor
3. online
4. download
5. built-in
6. digital
7. store
8. financial

4 Match the words in exercise 3 with the correct meanings (a-h)

a) keep, save
b) execute, do
c) monetary
d) integrated
e) connected to the Internet
f) describes information that is recorded or broadcast using computers
g) program used for text manipulation
h) copy files from a server to your PC or mobile

5 In pairs, discuss these questions.

1. How were computers used in your school?
2. How are computers used in your University?
3. How do you think computers will be used in school/University in the future?

LANGUAGE WORK Verbs and nouns often go together in English to make set phrases, for example ***store information*.** These word combinations are called **collocations**. Learning collocations instead of individual words can help you remember which verb to use with which noun. There are some examples in the text The digital age.

6 Match the verbs (1-5) with the nouns (a-e) to make collocations from the text The digital age.

1. do	a) calls
2. give	b) research
3. enter	c) the Internet
4. access	d) presentations
5. make	e) a PIN

7 Use collocations from exercise 6 to complete these sentences.

1. Thanks to Wi-Fi, it's now easy to ……. from cafés, hotels, parks and many other public places.

2. *Skype* is a technology that enables users to …… over the Internet for free.

3. In many universities, students are encouraged to …… using PowerPoint in order to make their talks more visually attractive.

4. The Web has revolutionized the way people …….. – with sites such as Google and Wikipedia, you can find the information you need in seconds.

8 Look at the box and then use suitable suffixes to make adjectives or nouns from these words. In some cases, you can make more than one word. Use a dictionary to help you.

Suffixes

- Suffixes change the class of the root word. For example, by adding the suffix **-al**, the noun **digit** is changed into the adjective **digital**. Suffixes can help you tell if a word is a noun, an adjective or a verb.

Common adjectival suffixes are: **-y, -able, -ible, -ive, -al, -ed, -ful, -ic, -less, -ing**

Common noun suffixes are: **-er, -or, -ion, -tion, -ation, -ment, -ness, -ity, -ant, -logy, -ing, -y, -ure, -sion**

- When using suffixes, always check in your dictionary to see if you need to change any other letters.

scan → scanner (double **n**)

1. person	4. teach	7. pay
2. present	5. process	8. base
3. inform	6. interact	9. colour

9 Complete these sentences with the word in brackets and one of these noun suffixes: -er, -logy, -ant, -ment. Use a dictionary to help you.

1. Kodak is a (manufacture) ……. of photographic and imaging (equip) ……. .

2. Digital (techno) …… is evolving rapidly.

3. They are developing the first electronic virtual (assist) …….. .

SPEAKING 10 Work in pairs. Discuss the use of computers in one of the four areas, using words and phrases from the *Useful language* box below.

University Entertainment Factory Airlines

Useful language			
University - access the Internet - search the Web - write documents - do research - prepare exams - complete exercises online - prepare presentations	**Entertainment** - download, compose and play music - play games - take and edit photos - make video clips - watch movies - listen to MP3s - listen to the radio via the Web	**Factory** - design products - make drawings - control industrial robots, assembly lines, machinery - do calculations - keep record of stocks (materials and equipment)	**Airlines** - display data about fuel consumption and weather conditions - manage radar systems - regulate air traffic - find out about the availability of flights, prices, times
Computers are used to …. *A PC can also be used for ….* *People/students/workers/engineers/pilots use computers to ….*			

WRITING 11 **W**rite a short presentation summarizing the ideas of your discussion.

Unit I The digital age **Can do statements**	**I can do this …** **with difficulty** **easily** **1** **2** **3** **4** **5**
Reading	
I can understand a text about computer applications in everyday life.	**1** **2** **3** **4** **5**
I can guess the meaning of unknown words from the context.	**1** **2** **3** **4** **5**
Language	
I can give examples of verb-noun collocations	**1** **2** **3** **4** **5**
I can use suffixes correctly	**1** **2** **3** **4** **5**
Speaking	
I can discuss the use of computers in particular areas	**1** **2** **3** **4** **5**
Writing	
I can write a short summary of a discussion	**1** **2** **3** **4** **5**

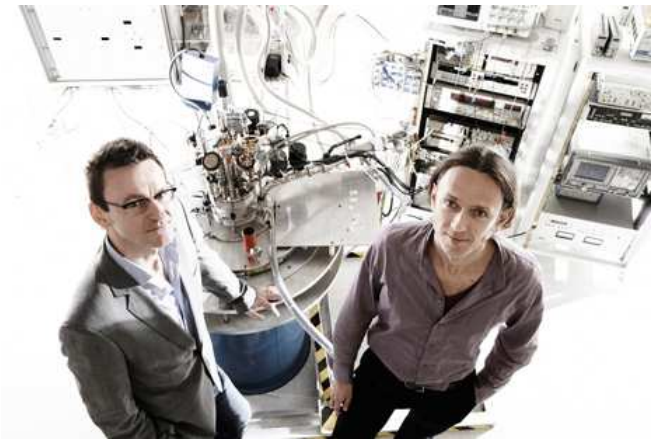
Vocabulary
Basic computer terms: *digital, data, database, word processor, online, download, store* Computers in education, banks, factories, airports, offices, entertainment: *to perform operations, to access the Internet, to do research, to prepare / to give presentations, to write letters, to keep records, to complete exercises, to make calls, to send texts, to store information, to access databases, to carry out financial transactions, to enter a personal identification number (PIN), to pay bills, to transfer money, to display data, to take and edit photos, to listen to the radio via the Web, to do calculations, to design products*

Expressions
Making a prediction *Soon everyone will be using … .* *Within … years, computers will have found a way for us to … .* *By then, maybe even … will have disappeared.* *It will be able to … .* Summarizing *I'd like to summarize the main points that we've talked about.* *There are five points to consider. First … Second…Third…* Stating opinion *We think / consider / feel / believe …* *It's obvious that … .* *In my view / opinion… .* *To my mind …*

Unit II

Computers and jobs

Most ICT-related jobs have developed to meet the need to analyze, design, develop, manage or support computer software, hardware or networks.



STARTER 1 Complete the sentences with the jobs from the box.

software engineer (application programmer) computer security specialist
help desk technician hardware engineer network administrator
database analyst computer training instructor (trainer)
webmaster (web designer) DTP (Desktop Publishing) operator

1. A …….. designs and develops IT devices.

2. A …….. designs, writes and tests computer programs.

3. A …….. uses page layout software to prepare electronic files for publication.

4. A …….. manages the hardware and software that comprise a network.

5. A ……. designs and maintains websites.

6. A ……. designs software and hardware to protect information from malware: viruses, worms, spyware, etc.

7. A ……. helps end-users with their computer problems in person, by email or over the phone.

8. A …… is in charge of the research and development of databases.

9. A ……. teaches people how to use hardware and software.

2 Four people are talking about their jobs. Which job in exercise 1 does each person do?

Speaker 1

I'm 32 years old and I really enjoy working on the Web. I use Macromedia Dreamweather to design, develop and maintain web pages. For the last two years, I've been working for a successful company, where I'm responsible for updating their website regularly.

Speaker 2

I started working in a computer support centre about two years ago. People phone and ask for help with things like: "My internet connection doesn't work." "I think I've got a virus." "I get a lot of error messages." etc. I talk to the users, identify the problem and try to fix it.

Speaker 3

I've got a degree in Electronic Engineering. In my job, I design, develop and test computer components, microprocessors, sound boards, etc. I work closely with a software engineer to ensure that the software is compatible with the hardware.

Speaker 4

I've been working for Novell, a leading provider of Net services software, since 2009. I plan and carry out measures to make networks more secure. In other words, I try to protect information from viruses and system crashes. I'm also in charge of assigning access passwords to employees.

READING **3** Read the job advertisements below and tick the most important qualities and abilities (1 – 15) for each job. Which three things do you think are most important for each job?

Database analyst DTP operator

1. logical reasoning
2. patience
3. self-discipline
4. accuracy
5. efficiency
6. drawing skills
7. creativity
8. leadership skills
9. imagination
10. enthusiasm
11. good communication skills
12. punctuality
13. ability to cope with routine work
14. confidence
15. being good with figures

DATABASE ANALYST

The successful candidate will be responsible for maintaining logical database models as well as managing the database.

Job Requirements

- Bachelor's degree in Computer Science, a related field or equivalent experience
- Analytical skills and a proficiency in developing structured logic

DTP operator

required for a leading financial magazine.

We are looking for a bright, competent operator with at least two years' experience in design and layout. Experience of Photoshop or Illustrator is an advantage.

Ability to work in a team and to tight deadlines is vital.

Please apply in writing, with CV and samples of your work, to Chris Scott, Personnel Manager, Financial Monthly, 52 Oak Street, London SW63 7DX or apply online.

4 Would you like to apply for one of these jobs? Give reasons for your answers.

5 Look at the profile of Charles Graham, choose the most suitable job for him. Give reasons.

Charles Graham 25 years old

Professional summary

I graduated in 2006 with A levels in English, Art and Maths, and went on to do a course in graphic design and page layout at Highland Art School.

Since 2008 I've been a graphic designer for PromoPrint, a company specializing in publishing catalogues and promotional material, and have used Adobe InDesign and other DTP software.

GRAMMAR REVISION: Tenses in Active Voice

	Simple	Continuous	Perfect	Perfect Continuous
Present	I work He work**s** We work	I **am** He **is** work**ing** We **are**	I **have** He **has** work**ed** We **have**	I **have been** He **has been** work**ing** We **have been**
Past	I He work**ed** We	I **was** He **was** work**ing** We **were**	I **had** He **had** work**ed** We **had**	I **had been** He **had been** work**ing** We **had been**
Future	I **shall** (will) He **will** work We **shall** (will)	I **shall be** He **will be** work**ing** We **shall be**	I **shall have** He **will have** work**ed** We **shall have**	I **shall have been** He **will have been** work**ing** We **shall have been**
Future in the past	I **should** He **would** work We **should**	I **should be** He **would be** work**ing** We **should be**	I **should have** He **would have** work**ed** We **should have**	I **should have been** He **would have been** work**ing** We **should have been**

6 Name the tenses suggested by these points and illustrate them with examples of your own

The tense expressing:

1. an action at some definite time in the past;
2. a temporary action, going on at the moment of speaking;
3. an action in the future;
4. an action in progress simultaneous to some definite moment in the past;
5. a definite action in the near future;
6. a prior action connected with the present by its result;
7. an action which began before and is connected with the present through its duration;
8. an action occupying a period of time which began in the past and is either still continuing or just finished;
9. an action expected or anticipated in the near future;
10. a habitual action in the present;
11. a succession of actions in the past;
12. a temporary action in the past taking place for some period of time expressed by the phrase;
13. an action in its progress at a definite moment in the future;
14. a prior action to some past moment, either regulative or durative;
15. an action occupying a period of time which began before and continued into some past moment or just finished;
16. a future action viewed from the past;
17. a definite future action in the near future viewed from the past;
18. a habitual action in emotional sentences with “always”.

GRAMMAR REVISION: Present Perfect, Past Simple

Present Perfect Simple	Present Perfect Continuous	Past Simple
We use this tense to talk about: - States that started in the past and continue to the present. Since 2008 I'**ve been** a computer operator for PromoPrint. - Past actions that continue to the present, where we put an emphasis on quantity (*how many*). I **have designed** four programs in COBOL. - Personal experiences, especially with **ever** and **never**. **Have** you **ever worked** with databases? I**'ve never worked** with databases.	We use this tense to talk about: - Actions which started in the past and are still happening. For the last three years I'**ve been working** as a software engineer. - Past actions that continue to the present, where we put an emphasis on duration (*how long*). - She'**s been working** all morning.	We use this tense to talk about: - Events that happened at a specific time in the past that are now finished. I **graduated** in May 2004. I **stayed** in this job until March 2009.

LANGUAGE WORK 7 Choose the correct words in brackets to complete these sentences.

1. He ('s never liked / 's never been liking) Maths.
2. They ('ve worked / 've been working) on the project all day.
3. John ('s used / 's been using) the computer for hours – he looks really tired.
4. How many emails (have you written / have you been writing) today?
5. She ('s written / 's been writing) this essay since 9 o'clock.
6. They ('ve interviewed / 've been interviewing) five candidates today.

8 Put the verbs in brackets into the present perfect simple or past simple.

1. She (be) …….. a software engineer since 2008.
2. After graduation I (work) ……. for a year with NCR.
3. (you ever work) …… as an IT consultant?
4. I (lose) ……. my laptop.
5. I (send) …….. my CV last Wednesday. Have you received it yet?

9 Complete **the letter of application** with the correct forms of the verbs in brackets

Dear Sir or Madam

I (to write[1]) to apply for the position of database analyst, which was advertised on 27th October in *The Times*.

I (to graduate[2]) in May 2007 with a degree in Computer Science from the University of London. Before taking my present job, I (to work[3]) as a computer operator at NCR. I (to stay[4]) in this job **until** April 2009. **For** the last two years I (to work[5]) part-time as a database administrator for Intelligent Cybernetics. I (to manage[6]) the accuracy and efficiency of databases. I (to have[7]) good analytical skills. I (to study[8]) languages at school and I (to make[9]) several visits to Germany, so I (to have[10]) a basic knowledge of German.

I now feel ready for more responsibility and would welcome the opportunity to work for your company.

I enclose my curriculum vitae. I will be available for an interview at any time. I look forward to hearing from you.

Yours faithfully

Maria Brown

Maria Brown

10 Make questions using these prompts. Then ask and answer the questions.

1. ever / live in another country?
2. ever / have a job interview?
3. How long / study English?
4. How long / use computers?
5. How many emails / receive today?

WRITING **11** These are headings and categories commonly used in CVs.

marital status	referees	work experience	permanent address	
education	skills	title	personal details	hobbies and interests
surname	qualifications	date of birth		

1. Which one means:

a) basic facts about you? ……..……

b) practical abilities ?……

c) where you live most of the time? ….……

d) what do you do in your free time? ……....

e) when you were born? ……

f) Mr, Mrs, Ms, or Dr? …….....

g) details about your working life? ……

h) if you are married or single? ……..

i) people who can tell us about your qualities and character? ……

j) proof that you have successfully completed a course? ……...

k) schools and colleges? …….

l) family name? ……...

2. Which information is not usually asked for in your country?

12 Read the CV. Complete a – h with appropriate headings or categories from the list in exercise 10 above.

CURRICULUM VITAE

a …….

Full name: Julie Robson

b ……... 15/02/84

Address: 88, Whitecross Road, Bristol BS2 6ZX

Telephone: (01854) 0865752

Mobile: 0789 557735

Email: JulieRobson0284@yahoo.co.uk

c ……. Single

d ……

I am currently following a part-time programme in web design at the Cybernetics College, London: HTML, Java and Macromedia Dreamweaver

2003 – 2008 Degree in Computer Science and Engineering, University of South Nottingham

2001 – 2003 Dr Chalmer's College: "A" levels in English (A), Mathematics (B), Computing (B).

e …….

Knowledge of multiple computer platforms (Windows, Mac and Linux); complete understanding of graphics formats and Cascading Style Sheets; strong database skills. Clean driving licence. Good communication skills.

Languages: English mother tongue; German (fluent); Basic Spanish

f …….

June 2010 – present Part-time Webmaster at www.ria.es; responsible for updating the site and using Adobe Flash to create animations

July 2008 – May 2010 IT consultant at Media Market, specializing in e-commerce and IT strategies

g …….

Web surfing, listening to music and travelling. Last year I travelled round Australia and south-east Asia. I developed a much broader awareness of other cultures and ways of life.

h …….

Catriona Flynn, Manager, ria.es, Gorton Street, London WK8 3TF

Professor K. Pradesh, Cybernetics College, 32 City Road, London ES7 5HG

13 Read the job advertisement below and identify what the company is looking for.

Vacancies at eMercury.co.uk,
a company dedicated to e-commerce

We are seeking a person to manage our website.

Major Responsibilities

- making sure the web server runs properly
- monitoring the traffic through the site
- designing and updating web pages

Experience of using HTML and Java is essential. Experience of Adobe PDF and Photoshop is an advantage. The successful candidate will also have knowledge of web editors – MS FrontPage or equivalent.

Send your CV and a covering letter to Michael Crossley, Human Resources Manager, eMercury, 57 Russell Street, London OR7 5NB

14 Julie Robson is interested in applying. Decide what aspects of her CV (exercise 12) are relevant for the job in exercise 13 and write a letter of application. Follow these steps:

Salutation: *Dear Mr, Mrs, Ms, Miss …*

Paragraph one: reason for writing
I am writing to apply for the position of ….

Paragraph two: education and training
I graduated in (date) ….
I completed a course in ….

Paragraph three: work experience
For the last … years I have been …
Since … I have been …

Paragraph four: personal skills
I spent … months in … (country), so I have knowledge of … (foreign languages).
I can …

Paragraph five: reasons why you are applying for this job
I now feel ready to … and would welcome the opportunity to …

Paragraph six: closing / availability for interview
I enclose … I look forward to …. I will be available for an interview …

Close: *Yours sincerely*

15 Write your own CV, using Julie's CV as a model.

16 Think of your ideal job and write a letter of application for it. If you prefer, look on the Internet for real jobs and practice applying for those.

Unit II Computers and jobs **Can do statements**	**I can do this …** **with difficulty** **easily** **1** **2** **3** **4** **5**
Reading	
I can understand job advertisements.	**1 2 3 4 5**
I can identify IT professions from their descriptions.	**1 2 3 4 5**
I can find specific information in a written advert	**1 2 3 4 5**
Language	
I can choose the correct tense of the verb to complete the sentences.	**1 2 3 4 5**
I can understand the difference between: - the present perfect simple and continuous; - the present perfect and past simple.	 **1 2 3 4 5** **1 2 3 4 5**
Speaking	
I can discuss the personal qualities and professional skills needed for particular jobs.	**1 2 3 4 5**
Writing	
I can write a CV.	**1 2 3 4 5**
I can write a letter applying for a job.	**1 2 3 4 5**

Vocabulary
IT professions: *software engineer (application programmer), hardware engineer, computer security specialist, help desk technician, network administrator, database analyst, computer training instructor (trainer), webmaster (web designer), DTP (Desktop Publishing) operator.* Professional skills: *logical reasoning, patience, self-discipline, accuracy, efficiency, drawing skills, creativity, leadership skills, imagination, enthusiasm, good communication skills, punctuality, ability to cope with routine work, confidence, being good with figures*

Writing strategy	
Curriculum vitae	**A letter of application**
Personal details	Salutation
……	*Dear Sir or Madam* – (when you don't know the name)
……	*Dear Mr/Mrs/Ms* …(surname) – (when you know the name)
……	Opening sentence
Education and training	*I am writing to apply for the position of ….*
Work experience	Closing sentence / conclusion
Skills	*I look forward to hearing from you soon.*
Languages	Complimentary close
Hobbies and Interests	*Yours sincerely* – (if you addressed the person by name)
Referees	*Yours faithfully* – (if you didn't)

Unit III INTERVIEW

Former Student

Paul is 24. He has a Higher National Certificate in Computing and a Higher National Diploma in Computing Support which he completed two years ago. He has been working for a company providing support services for the last sixteen months.

STARTER 1 Study this list of some of the subjects included in his Diploma course. In which of these subject areas would he study the following topics?

Subjects	Topics
1. Computer Architecture	a LAN Topologies
2. HW Installation & Maintenance	b PC Bus Architectures
3. Info Tech Applications	c Modems
4. Multi-user Operating System	d How to connect printers
5. Network Technology	e Unix Operating System
6. Software Development	f Pascal
7. Software Development Procedural Language	g Writing a program
8. Data Communications	h Creating a database
9. Information Systems & Services	i Maintenance of desktops
10. Communication	j Word processing and other office applications
11. Mathematics for Computing	k Binary system
	l Making presentations
	m Job interview

HW (hardware) – the physical units which make up a computer system
LAN (Local area network) – a group of computer devices interconnected within a small physical area, like a home or office building
PC – a personal computer, which carries out processing on a single chip.
UNIX – an operating system, designed by Bell Laboratories in the USA, found on mainframes and workstations in corporate installations.

READING 2 Read Part 1 of the Interview to find the answers to these questions:

1. Which of the subject areas listed in Task 1 does Paul mention?
2. Which additional subjects does he mention?
3. Why did he choose to do his Diploma in support?
4. What practical work was included in the course?
5. Which subject did he particularly enjoy?

3 Read Part 2 of the Interview and answer these questions:

2. What suggestions does Paul have for improving the course? Note a) his suggestions for improving and b) the reasons he gives.
3. Which of the subjects he studied has he found useful in his work? Note a) the subjects and b) examples in the work situation.

4 Read Part 3 of the Interview to answer these questions:

1. In which situations does Paul have to learn fast?
2. What sources does he use for help?
3. What advice did the college provide on sources of information?
4. What was the problem with the set book?
5. How does he feel about going back to college?

INTERVIEW: Former Student

PART 1

Interviewer: What was your course called?

Paul: The first one was a Higher National Certificate in Computing. That was mainly programming and the second one was a Higher National Diploma in Computing Support.

Interviewer: Ah, that's quite a change. Did you originally think of being a programmer?

Paul: Yeh, but when I finished the course there weren't a lot of jobs in programming and there seemed to be more in support. So support seemed a better career move.

Interviewer: What were the main subjects in your diploma course?

Paul: Hardware, Planning, Design, Software development, Applications, Communication. We did some programming too.

Interviewer: Communication, anything to do with Telecommunications?

Paul: No, it's language skills. How to get your point over. How to make a presentation. We also had Maths. I've always liked Maths.

Interviewer: Was there a practical component in the course?

Paul: Yes, we had to assemble computers.

Interviewer: And how small were the components you started with? Was it down to the level of the motherboard, for example?

Paul: Yes, we had to link the motherboard and the CPU and all the other components of a computer and make it run.

PART 2

Interviewer: How up to date did you feel the course was?

Paul: I always felt it was a bit behind current developments.

Interviewer: That question really relates to my next one. Is there anything that you would add to or take away from the course?

Paul: I would change the programming component. We did Pascal. That's one reason I didn't want to continue with programming because you never saw any jobs which asked for Pascal. We did COBOL also but that was quite old too and even the banks were stopping using it. A more up to date language like C++ would've been better. And I would add work experience. I know some colleges do.

Interviewer: That would be a great thing because most students have paper qualifications and no practical experience.

Paul: I think that even if it was just summer work it would be really useful. Employers are looking for qualifications and experience.

Interviewer: Which of the subjects you studied have you found most useful in your work?

Paul: Learning Access. I've had to do database designs for a couple of customers. Systems Building as well. I've had to go in and replace components for customers and we've had to build computers from scratch. Last Christmas I had to assemble fifty in a four week period.

Interviewer: What about Communication? I'm sure a lot of students would see Communication and say that's really the least important thing in the course.

Paul: Oh, I've found it very useful. I have to go to customers I've never met before and put my points across. It's been helpful too in going for job interviews. Just getting confidence in presenting yourself.

Interviewer: Did they give you any practice in explaining things to non-specialists? In simple, non-technical ways to users?

Paul: What you had to do in front of the video camera, was to choose a subject and break it down so that everyone could understand it. Even though your classmates were all technically-minded, you had to make it so that the teacher could understand it. The teacher who was marking it had to understand. If she didn't, she wouldn't pass you.

PART 3

Interviewer: Now that the course is over, how do you keep up?

Paul: That's the difficult thing. You get a lot from work when you're thrown into situations you don't know much about. You have to learn fast.

Interviewer: So you're teaching yourself.

Paul: Yes. You have to do this from books and manuals and by reading the PC magazines.

Interviewer: Did the college give you any advice on the best magazines to read?

Paul: No.

Interviewer: So how did you get that information? How did you know where to look for help?

Paul: There was one lecturer. He used to work for a chip company. Even the college technical staff used to ask him for advice. He gave us some advice on where to look. The magazines themselves often recommend books to buy. The Internet's good. You go to the Microsoft websites and the manufacturers' websites also help.

Interviewer: That's not something the college gave you. They didn't say "Here are a useful set of Web addresses"?

Paul: No. There was a set book on support which was useful but it was full of mistakes so you had to check it against other books to make sure what was right.

Interviewer: OK. One last question. Would you ever go back to college?

Paul: Yes, I'd like to do my degree some time but it's getting the time and the money to do this.

4 Study this description of a student's first term. What questions might the interviewer have asked to obtain the information *in italics*?

Pauline studies *6 subjects*[1]. She has classes on *four days*[2] each week. On Monday morning *she has IT and Information Systems*[3]. *Tuesday*[4] is a free day for home study. On Wednesday she has System Analysis *in Room 324*[5]. She studies *Computer Architecture*[6] on Thursdays. *Programming*[7] happens on Friday mornings. Communication takes place *once a week*[8] on Friday afternoons. She likes *Mr Brunt's classes*[9] most. She has a 20-minute coffee break each day and a lunch break *from 1.00 to 2.00*[10].

GRAMMAR REVISION: questions

Study these examples of questions.

Yes/no questions
Was there a practical component in the course?
Did the college give you any advice on the best magazines to read?
Would you ever go back to college?

Alternative questions
Did you originally think of being a programmer or support engineer?

Question tags
You're teaching yourself, aren't you?
The magazines often recommend books to buy, don't they?
You've found it very useful, haven't you?
There weren't a lot of jobs in programming, were there?

Wh-questions
Asking about quantity:
How many days a week do you study?
How much programming does he do?

Asking about time:
When did you study Communication?

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

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

Asking about actions:
What happened on Monday mornings?
What does she do on Fridays?

SPEAKING **6** **Role Play** Work in pairs. Play the parts of the Interviewer and Paul.

WRITING **7** Study this description of a computer course. Then write a description of your own computing course, or one of its components, in the same way.

Computer Use and Applications

AIMS:
1. To introduce complete beginners to computer systems.
2. To give a basic foundation in computer technology and to introduce appropriate terminology.
3. To give a description of the major components (hardware and software) which make up a computer system.
4. To show how computer systems are used in commerce and industry.
5. To give practical experience in using various systems.

DESCRIPTION:
The course is in four parts.
Part 1 Introduction to college computer science facilities, including how to access the computers, the Unix filestore, using email, the editor and simple network commands.
Part 2 The basic structure of computer hardware and systems software. Topics include compilers vs interpreters and memory management.
Part 3 Introduces some more advanced software tools, documentation tools and language processors.
Part 4 Discusses various uses of computers including spreadsheets, databases, communications and impacts on society.

STAFF:
Dr Peter Jones

METHOD AND FREQUENCY OF CLASS:
Three lectures per week with practical exercises once every two weeks.

ASSESSMENT:
Four formal coursework assignments.

Unit III Former student **Can do statements**	**I can do this …** **with difficulty easily** **1 2 3 4 5**
Reading	
I can understand an interview.	**1 2 3 4 5**
Language	
I can ask questions to obtain specific information.	**1 2 3 4 5**
Speaking	
I can play the parts of an interviewer or an interviewee.	**1 2 3 4 5**
Writing	
I can write a description of a computer course.	**1 2 3 4 5**

Vocabulary

Subjects:
Computer Architecture, HW Installation & Maintenance, Info Tech Applications, Multi-user Operating System, Network Technology, Software Development, Software Development Procedural Language, Data Communications, Information Systems & Services, Communication, Mathematics for Computing

Expressions

Description of a computer course.

AIMS:
1. To introduce … .
2. To give a basic foundation in … and to introduce appropriate terminology.
3. To give a description of the major components …. .
4. To show how … .
5. To give practical experience in using … .

STAFF:
Dr Peter Jones

METHOD AND FREQUENCY OF CLASS:
Three lectures per week with practical exercises once every two weeks.

ASSESSMENT:
Four formal coursework assignments.

Unit IV

ICT systems

STARTER 1 Discuss the questions:

1. What is an ICT system?
2. What have been the most important advances in telecommunications over the last ten years?
3. Make a list of the ICT systems you use at home.

READING 2 Read the text and check your answers to **1**.

TEXT: ICT systems

ICT systems are much more than computers. An ICT system involves the use of computers or other types of hardware to meet a specific need. A LAN, local area network, can be an example of an ICT system, but interactive television and the database of a library are types of systems too.

ICT systems have these components:
- **software**, instructions and data
- **hardware**, computers and other devices
- **personnel**, people who use, design, control or benefit from the system.

At present most of the devices used in ICT systems are multi-purpose: mobile phones can be used as digital cameras, printers are also scanners and faxes.

In recent years, TV and radio **broadcasting** has been revolutionized by developments in satellite and digital transmission. Digital TV is a way of transmitting pictures by means of digital signals. It provides a better quality of picture and sound and allows broadcasters to deliver more channels. Digital TV offers interactive services.

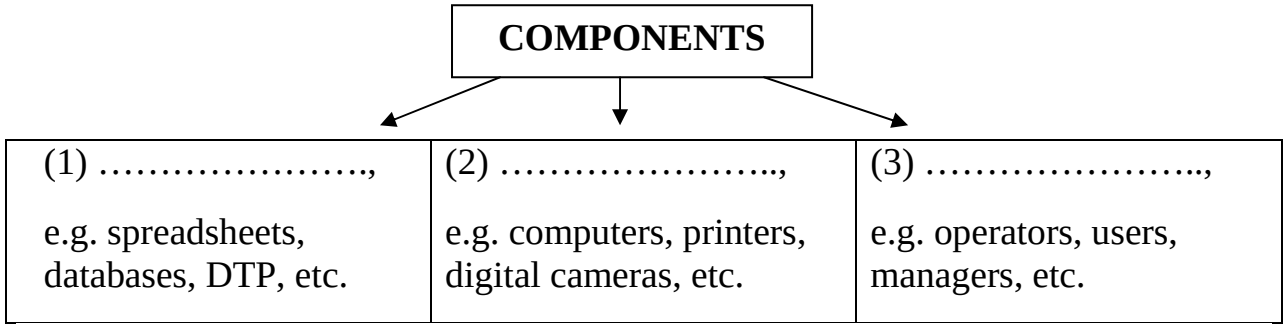
New technologies are being devised to allow you to watch TV on your mobile. Audio programs (music, news, sports, etc.) are also transmitted in a digital radio format called DAB (Digital Audio Broadcasting).

Thanks to **wireless** connectivity, mobile phones now let you check your email, browse the Web and connect with home or company intranets, all without wires.

The use of GPS in cars and PDAs is widespread, so you can easily navigate in a foreign city or find the nearest petrol station. In the next few years, GPS chips will be incorporated into most mobile phones.

Because of telecommunications, people can now work at home and communicate with their office by computer and telephone. This is called **teleworking**. It has been predicted that about one third of all work could eventually be performed outside the workplace. In call centres, assistance or support is given to customers using the telephone, email or online chats. They are also used for telemarketing, the process of selling goods and services over the phone.

3 Fill in the diagram of components of ICT systems with words from the text above.



4 Read the text again and find the following.

1. the term that refers to the transmission of audio signals (radio) or audiovisual signals (television)

2. the advantages of digital TV over traditional analogue TV

3. the term that means *without wires*

4. the practice of working at home and communicating with the office by phone and computer

LANGUAGE WORK 5 The passive is very frequent in technical English. How do you make the passive in English / in your language? Find the examples of the passive in the text **ICT systems** above and identify the tenses.

The passive

We form the passive with the verb **be** + **the past participle** of the main verb. When we mention the agent, we use **by**.

	Simple	Continuous	Perfect
Present	I **am** He **is** call**ed** We **are**	I **am being** He **is being** call**ed** We **are being**	I **have been** He **has been** call**ed** We **have been**
Past	I **was** He **was** call**ed** We **were**	I **was being** He **was being** call**ed** We **were being**	I **had been** He **had been** call**ed** We **had been**
Future	I **shall** (will) **be** He **will be** call**ed** We **shall** (will) **be**		I **shall** (will) **have been** He **will have been** call**ed** We **shall** (will) **have been**

6 Complete these sentences with the passive form of the verbs in brackets.

1. Microprocessors (make) …… of silicon.

2. Call centres (use) ……. to deal with telephone enquiries.

3. In recent years, most mobile phones (equip) ……. with Bluetooth.

4. GPS (develop) …… in the 1970s as a military navigation system.

5. Sorry about the mess – the computers (replace) …… at the moment.

6. In the near future, the Internet (access) …….. more frequently from PDAs and mobile phones than from desktop computers.

7. I had to use my laptop this morning while my PC (fix) …… .

8. Information (transmit) …… by devices such as the telephone, radio, TV, satellite or computer networks.

7 With the help of this text, sequence the steps in the operation of the new speed trap. Then describe this operation by converting each of the statements to the passive. Add information on the agent where you think it is necessary.

Some drivers have now got used to the speed traps. They slow down when they approach one to ensure that the camera is not triggered. They speed up again as soon as they have passed. This is known as “surfing”. One way of outwitting such motorists is a new computerized system. This consists of two units equipped with digital cameras positioned at a measured distance apart. The first unit records the time each vehicle passes it and identifies each vehicle by its number plates using optical character recognition software.

This information is relayed to the second unit which repeats the exercise. The microprocessor within the second unit then calculates the time taken by each vehicle to travel between the units. The registration numbers of those vehicles exceeding the speed limit are relayed to the police headquarters where a computer matches each vehicle with the DVLC database. Using mailmerge a standard letter is then printed off addressed to the vehicle owner.

a) It identifies each vehicle by its number plates using OCR software.

b) The microprocessor calculates the time taken to travel between the units.

c) It prints off a letter to the vehicle owners using mailmerge.

d) It relays the information to the second unit.

e) It relays the registration numbers of speeding vehicles to the police headquarters.

f) The first unit records the time each vehicle passes.

g) A computer matches each vehicle with the DVLC database.

h) The second unit also records the time each vehicle passes.

1. …. 2. …. 3. …. 4. …. 5. ….. 6. …. 7. …. 8. ……

READING 8 Read the sentences from the article **Mobile Revolution**. Decide from the context what the underlined words mean.

Catch on means

a) become popular;

b) discover by chance;

c) attract attention.

Drawback means

a) positive aspect;

b) disadvantage, negative aspect;

c) an attraction.

9 Read the article about mobile phones. Then choose the correct ending: a, b, c, or d, to complete statements 1-2.

ARTICLE: Mobile Revolution

No consumer product in history has caught on as quickly as the mobile phone, global sales of which have risen from six million in 1991 to more than 400 million a year now.

There are twenty different products that previously might have been bought separately that can now be part of a mobile phone (camera, calculator, clock, radio, digital music player, etc.). Mobiles have changed the way people talk to one another, they have generated a new type of language, they have saved lives and become style icons.

There are obviously drawbacks to mobiles as well: mobile users are two and a half times more likely to develop cancer in areas of the brain adjacent to their phone

ear, although researchers are unable to prove whether this has anything to do with the phone; mobile thefts now account for a third of all street robberies in Russia, and don't forget about all the accidents waiting to happen as people drive with a mobile in one hand. But, overall, mobile phones have proved to be a big benefit for people.

1. According to the article, mobile phones

a) are modified too fast;

b) are incorporated into cameras;

c) can now replace many other products;

d) are more complicated to operate than radios.

2. One disadvantage of mobile phones that the article does not mention is the

a) high operating costs;

b) higher crime rate;

c) possible health risk;

d) increased danger to road users.

SPEAKING 10 Match the phone reviews (1 – 5) to the descriptions of users who might be interested in them (a – e).

1. This is the best multimedia phone, with a 3.2-megapixel digital camera, Bluetooth and an MP3 player.	2. This model is the best phone for SMS addicts, with an amazing touchscreen display and multiple messaging options.	3. This is the best smart phone, with wireless support (Bluetooth and Wi-Fi), WAP and email.
4. This is the best status-symbol phone, with a striking design, beautiful display and speakerphone. Hands-free kit included.		5. This phone is the best for teens, with an eye-catching pop-up display, vibration feedback for game playing and programmable ring tones.
a) People who love talking, playing games and unusual ring tones.		d) Phone users who love taking pictures and watching videos, and music lovers.
b) People who prefer writing to phoning.	c) Mobile phone fanatics who travel a lot and want to make an impression.	e) People who want email and to surf the Web.

11 Work in pairs. Discuss the following questions.

1. How much money do you spend on your mobile?
2. Can you send MMS (multimedia messages) from your mobile?
3. Do you access the Internet from your mobile? Which sites do you visit?
4. Can you listen to music and watch TV on your mobile?
5. Have you ever had to use your mobile phone in an emergency?
6. Do you use your mobile phone for business?
7. Do you think it is secure to carry out financial transactions via mobile phones?
8. Do you think that prolonged use of mobile phones can affect our health (for example cause headaches, emit radiation, excite brain cells, etc.)?

12 Describe your mobile phone. Use the *Useful language* box to help you.

Useful language		
My phone is a ….	It's got a …	With the …, I can …
The best feature is …	I mostly use it for …..	I never use the …

WRITING **13** Write a summary of your discussion in 11 or a description of your mobile phone in 12.

Unit IV ICT systems **Can do statements**	**I can do this …** **with difficulty easily** **1 2 3 4 5**
Reading	
I can understand general and specific information from a text about information and communication systems.	**1 2 3 4 5**
Language	
I can explain how the passive is formed.	**1 2 3 4 5**
I can use the passive.	**1 2 3 4 5**
I can use specific vocabulary related to telecommunications	**1 2 3 4 5**
Speaking	
I can describe my mobile phone.	**1 2 3 4 5**
I can discuss the benefits and risks of using mobiles.	**1 2 3 4 5**
Writing	
I can write a summary of a discussion about mobile phones.	**1 2 3 4 5**

Vocabulary
ICT systems: *teleworking, telemarketing, teletext, broadcasting, digital TV, digital radio, call centre, GPS (Global Positioning System), wireless, software, hardware, personnel.* Mobile phones: *built-in digital camera, touchscreen display, speakerphone, programmable ring tones, hands-free kit, Bluetooth, SMS (Short Message Service), MMS (Multimedia messages), MP3 (MPEG audio layer 3), WAP (Wireless Application Protocol), SIM card (Subscriber Identity Module), drawback .*

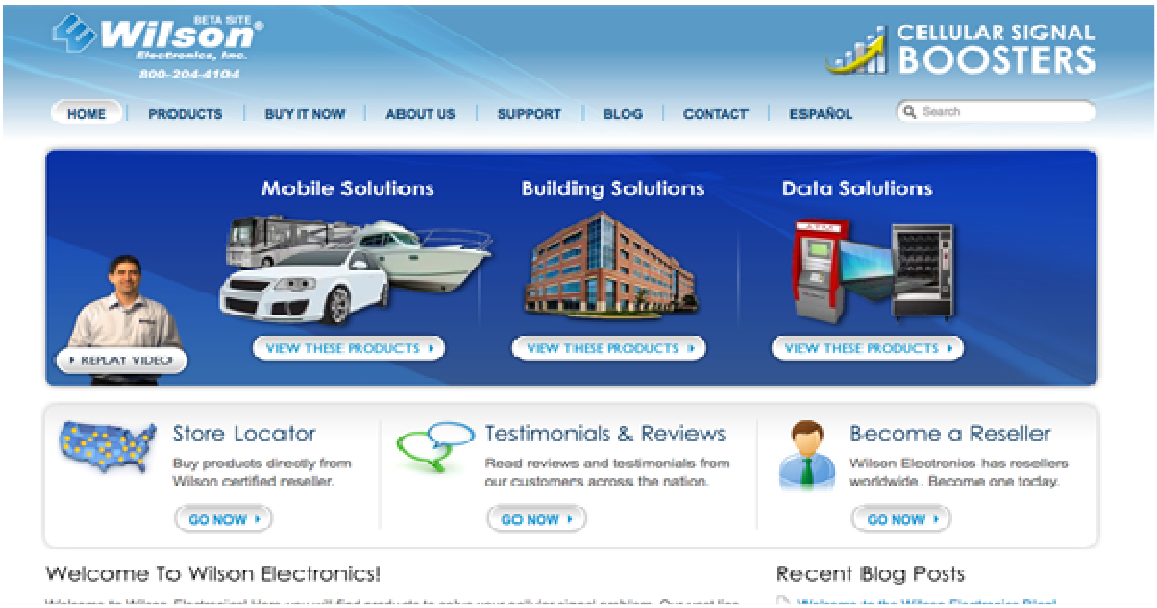
Expressions
Describing a mobile phone *My phone is a ….* *It's got a …* *With the …, I can …* *The best feature is …* *I mostly use it for ….* *I never use the …*

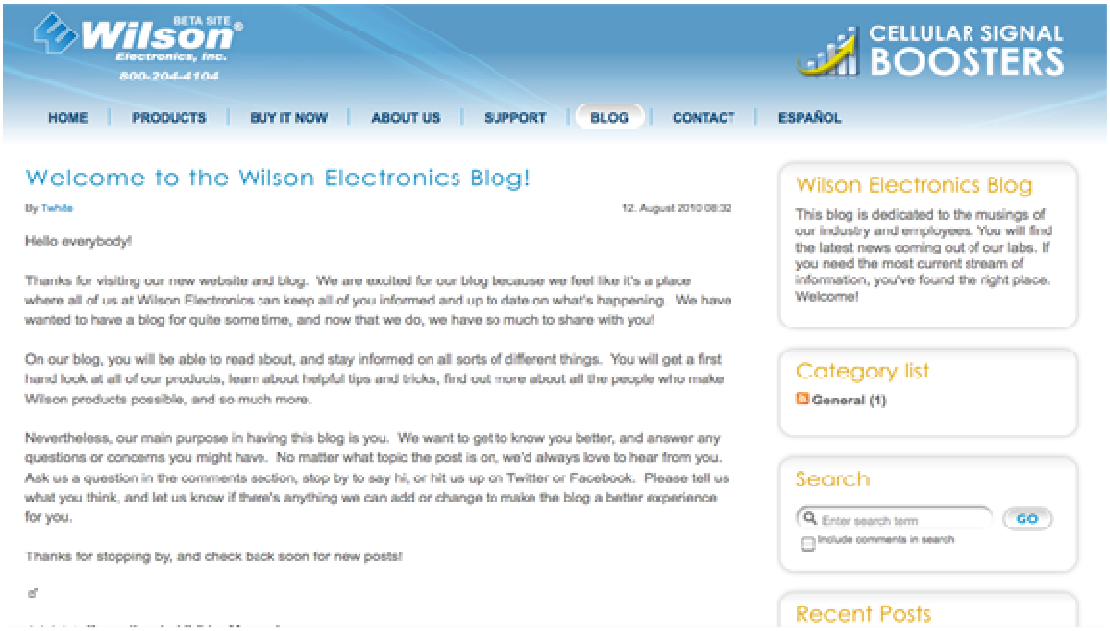
Unit V

Web design

STARTER 1 Discuss the 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?





READING 2 Read the text below and find the following.

1. the language used to create web pages

2. the type of software that lets you design web pages without writing HTML codes

3. the format invented by Adobe to distribute text files over the Internet

4. a method of displaying multiple pages in the same browser window

5. three common graphics formats used on websites

6. three popular formats used to store and play back video

TEXT: Web page design

HTML

Web pages are created with a special language **HTML** (Hyper Text Markup Language), which consists of commands called **tags**. Tags are placed around pieces of text to tell the web browser how to display text or pictures. You can view the source or raw HTML code by choosing the *Page Source* option in your web browser. But you needn't learn HTML in order to build your own website. Instead, you can use a word processor with web design capabilities or a dedicated **web editor** like Macromedia Dreamweaver or Microsoft FrontPage. A *WYSIWYG* (*What You See Is What You Get*) application converts a visual layout into HTML code.

Web page basic elements

There are a number of basic elements that you can find on a web page:

- **Text**, which may be displayed in a variety of fonts and sizes. Most text files are available in two formats: HTML or **PDF** (the **p**ortable **d**ocument **f**ormat that can be viewed with Acrobat Reader).

- **Tables** with columns and rows, used to position images and text on a page.

- **Frames**, subdivisions of a web page that allow the display of different HTML documents in the same browser window.

- **Hyperlinks**, connections from text or pictures on the current web page to different parts of the same page, to other web pages or websites.

- **Graphics**, pictures created with formats such as **JPEG** (Joint Photographic Experts Group), ideal for pictures with many colours, e.g. photographs, **GIF** (Graphical Interchange Format), ideal for pictures with fewer colours or with large

areas of the same colour, e.g. buttons, banners, icons, and **PNG** (Portable Network Graphics), which supports 16 million colours.

- **Background**, the underlying colours and patterns of a web page.

In order to add styles to web documents it is becoming more common to use **CSS** (**Cascading Style Sheets**). This makes it easy to apply presentation changes across a website, reduces download time.

Multimedia

Web pages can also include **multimedia files**: animations, audio and video files. Sounds are recorded with different audio formats. **WAV** (Windows wave audio format), **RA** (RealAudio file) and **MP3** (MPEG audio layer 3) are some of the most popular ones.

Full-motion video is stored in these formats: **AVI** (audio video interleave), **MOV** (QuickTime movie) and **MPG** (moving picture experts group).

If you want to inject something special into your web pages, you can use **Adobe Flash** to include **interactive animations**. Additionally, you can insert **Java applets** – small programs that enable the creation of interactive files. To see or hear all these files, you must have the right **plug-in**, an additional software that expands the capabilities of your web browser.

3 Read the text again and then match the sentence beginnings (1 – 5) with the correct endings (a – e).

1. Instructions in HTML
2. Cascading Style Sheets are the way
3. A hyperlink is any clickable text,
4. A plug-in is a special program
5. Java applets are used to add

a) image or button that takes you to other destinations on the Web.

b) used for handling audio, video, 3D and animation elements.

c) are called *tags*.

d) interactivity to web pages.

e) to define the presentation of web pages, from colours, fonts and spacing to page layout.

LANGUAGE WORK 4 Underline all the modal verbs in the text **Web page design** and then look at the box below. Which modal verbs from the box do not appear in the text? Can you think of any other modal verbs?

Modal verbs

We use modal verbs to add extra meaning to the main verb. They are followed by infinitive without *to*. Modal verbs are used in the following ways:

- to express a possibility

*You **can/could** use Adobe Flash to include interactive animations.*

*You **may** like to insert songs, podcasts.*

*The price of Dreamweaver **might** go down next month.*

Can and **could** are often interchangeable when talking about possibility. **May** and **might** are used to express weaker possibilities.

- to ask for permission

***Can/Could/May** I use your mobile phone?*

May is more formal than **can** or **could**.

- to talk about ability

*We are looking for an expert who **can** design web pages.*

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

- to talk about obligation or necessity

*To see or hear all these files, you **must** have the right plug-in.*

*You **needn't** learn HTML in order to build your own website.*

Needn't means *don't need to* or *don't have to*.

- to give advice

*You **should** check that all the links work.*

5 Complete this advice about web design with suitable modal verbs. There may be more than one possible answer.

A well-designed website (1) …..….. be neat and organized. Words (2) …… be surrounded by sufficient white space. Use dark **text** on a light **background**, preferably white. You (3) ……. divide the page into columns with a **table** or use **CSS** to create the page layout. Usually the navigation bar appears on the left side of the page. You (4) ……. display it on all the pages of your website by using a **frame**. It is a good idea to put a **link** to the top of the page at the bottom of a long text. Websites with **graphics** are more inviting than those written in plain text, so you (5) …….. like to insert some graphics into your documents. Once live, you (6) …….. update your website regularly.

6 Work in pairs. Discuss at least three things

1. you can now do more easily because of the Internet.

2. that may/might happen to the Internet in the next five years.

3. you must consider when designing a website.

4. you should take into account when choosing which computer to buy.

LISTENING 7 Put the following steps in web design into the correct order. Then listen to/read an interview with an expert describing the most important guidelines in web design and check your answers.

Write and format the text

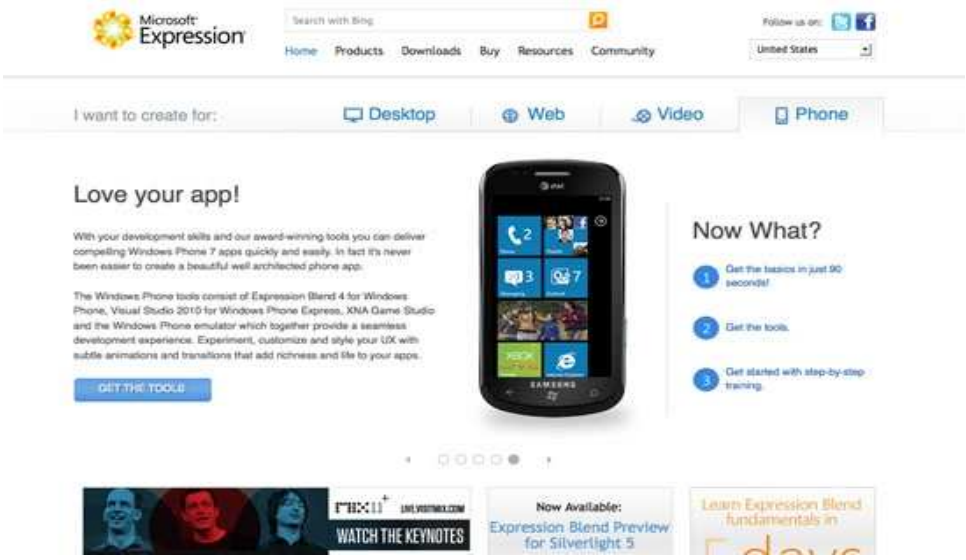
Decide the content and structure for the website

Publish the website

Insert computer graphics and sounds

Keep the website updated

Link related pages to each other using hyperlinks



Interviewer: What's the first step in building a website?

Sarah: First of all, you should always plan it carefully. Decide what sort of information you're going to include and how you're going to organize it. I like to start with the home page, because this is the starting point of your site. It's a good idea to design the site on paper first – a few diagrams will help you clarify the relationships between the pages.

Interviewer: That sounds sensible. What editing tool do you recommend?

Sarah: I recommend using a web editor; it'll make it easier to design your site. You can download a web editor from the Internet quite easily.

Interviewer: I suppose a big part of the job is writing the text and formatting the pages.

Sarah: Yes, you need to type the text and decide the formatting effects. You can also apply styles to text and other page elements.

Interviewer: And what about graphics and sounds?

Sarah: Well, that's the next step. You can insert all sorts of pictures and sounds, but they should have a clear purpose, some sort of communicative intention. Don't insert photos or animations just to make the pages look nice, and avoid having a large number of graphics.

Interviewer: Why's that?

Sarah: Because graphics can take a long time to download, and visitors might give up and leave.

Interviewer: I see. Any advice about the use of colour?

Sarah: It's fun to experiment with colour. You may like to choose different colours for the background and the text. But make sure that all the text is easy to read and avoid very bright colours.

Interviewer: OK. What's next?

Sarah: Once you've created and saved a few pages, it's time to join them together with hyperlinks. A good design principle is not to put too many links on one page – people may lose patience or get distracted. And check that all the links work, since web addresses sometimes change.

Interviewer: So, be careful with links. What do I do if I then want to publish my website on the Net?

Sarah: To publish your site, you have to find a web server and then transfer all the files from your PC to the server. This is called *going live*.

Interviewer: Right, sounds easy! Any final comments, Sarah, before we take some calls?

Sarah: Yes, try to keep the pages updated, improving the content and design if necessary. And the final touch: always include the date to show that your site is up-to-date.

8 Listen to/read the interview again and decide whether these design principles are true or false.

1. Plan your website carefully.
2. Use a web editor. It will make it easier to create your pages.
3. Insert photos or animations just to make the pages look attractive.
4. Place a large number of graphics on your pages.
5. Don't use very bright colours.

6. Put a lot of links on one page.

7. Check that all the links on your web pages are correct.

8. Once they are published, update your pages regularly.

SPEAKING 9 Look at these web pages. Decide if they are well designed.

10 Discuss the following questions.

1. Have you visited the website of your University?

2. What is it about the design that you find particularly useful or attractive?

3. Is there anything you don't like?

WRITING 11 Work in small groups. Collect information about your University and design a home page for it. Follow the instructions from the interview with the web designer in 7.

Discuss with your partners these questions:

1. What types of media would you include – text, photos, video, audio?

2. Would you insert links to other websites? Which ones?

Unit V Web design **Can do statements**	**I can do this …** **with difficulty** **easily** **1** **2** **3** **4** **5**
Reading	
I can understand the text about the basic principles of web page design.	**1 2 3 4 5**
I can find specific information in a text about web page design.	**1 2 3 4 5**
Language	
I can use modal verbs correctly.	**1 2 3 4 5**
I can use specific vocabulary related to web design.	**1 2 3 4 5**
Listening	
I can put the steps in the design of the website into the correct order based on information from an interview	**1 2 3 4 5**
I can decide whether certain web design guidelines are true or false based on information from an interview	**1 2 3 4 5**
Speaking	
I can describe a website.	**1 2 3 4 5**
I can discuss questions about web design.	**1 2 3 4 5**
Writing	
I can design a mock home page for my university.	**1 2 3 4 5**

Vocabulary
Web design: *website, web page, home page, blog, HTML (Hyper Text Markup Language), tag, web editor, CSS (Cascading Style Sheets), background, frames, hyperlink, Java applet, plug-in, graphics, interactive animations.* File formats: *.mp3 (MPEG audio layer 3), .wav (Windows wave audio format), .ra (RealAudio file), .avi (audio video interleave), .mov (QuickTime movie), .mpg (moving picture experts group).*

SUPPLEMENTARY READING

Recent Developments in IT

1 Study the texts on recent developments in one area of Information Technology and make brief notes on the main points of the text.

A Domestic appliances

Licence to chill

Barcodes in the packaging of groceries will soon be replaced with radio-frequency tags that can be read at a distance and with greater reliability. As well as indicating what the product is, the data in the tags will include additional information such as the "best before" date and even nutritional data. Now, imagine that a fridge could read these tags and keep track of the items placed there.

If an item is about to exceed its "use by" date, the fridge tells you, and you can either use it or throw it out. Fancy something different for dinner? No problem, ask the fridge to suggest some menus based on the ingredients it knows you have in stock. Or tell the fridge the menu you require and it will provide you with a shopping list of the items you don't have or order the items via email. This is the Screenfridge from Electrolux.

But why "Screenfridge"? On the door is a touch-sensitive panel or screen that provides a means of communicating with users.

For many households, life revolves around the kitchen. This is the assumption Electrolux made in designing the Screenfridge. The same screen is a messaging centre. Since the fridge is equipped with a microphone, speaker and video-camera, you're not limited to textual information. The fridge is connected to the Internet, so it can be used to send and receive email or you could surf the Web to find a new recipe.

Many people have a TV in the kitchen, but if you already have a screen on the fridge, why clutter up the work surface with a TV? Call the Screenfridge's TV mode and watch your favourite programme on the fridge. The Screenfridge can be interfaced to a surveillance camera to check out visitors or to keep an eye on the children. Finally, the Screenfridge can perform some of the household management tasks normally associated with a PC. For example, it has a diary, address pad and a notepad.

B Avatars

Ananova

Ananova is the world's first digital newsreader. She was created to front an Internet 24 hours a day news service by Digital Animations Group, a Scottish 3D digital entertainment company and PA New Media.

Mark Hird, Director of PA New Media said, "We have given her a full range of human characteristics after researching the personality most people want to read news and other information. Ananova has been programmed to deliver breaking news 24 hours a day via the Internet, and later on mobile phones, televisions and other digital devices."

The Ananova character fronts a computer system which is constantly updated with news, sport, share prices, weather and other information. This is converted into speech while another program simultaneously creates real-time animated graphics.

This ensures that the virtual newscaster can be on top of the news as it breaks, with very little delay at all. People using the service can also tailor their own news bulletins by using search words to hear the latest information on their chosen subjects.

Mr Hird believes the invention will dramatically change the role of the traditional newscaster, "In 20 years time we could be seeing that type of job being replaced by computer-generated images." But not everyone agrees. Professor Bill Scott said that people prefer people to teach them things and in a world where information was increasingly important, an established face was important in terms of public trust. "You don't get that confidence with computer characters."

C Robotics

The rise of the robots

Japan produced the first commercially available robotic pet, called Aibo, a small electronic dog that several owners on Aibonet.com describe as part of the family. Aibo is not alone. Dr Thomas Consi of MIT has produced the "robolobster" which is capable of imitating lobsters' abilities to sense chemicals in the water surrounding them. Researchers at Edinburgh's Mobile Robot Group have made the world's first cyber-cricket.

These machines are important because they demonstrate that simple processes can result in complex behaviours. The robots use 'neural nets', connected processors that have an input level associated with each processor. When an input signal exceeds a certain value, the processor 'fires' a signal to other processors as output. Because neural nets can recognize patterns in data, they can be 'trained' with samples of data which are then revised to improve the response.

The most important crossover, however, is not between animal and robot but between man and machine. Quadriplegics and paraplegics have been testing computer connections for some time to bypass injured nerves, but Professor Kevin Warwick, head of the Department of Cybernetics at the University of Reading, is currently conducting experiments which could lead to more of us becoming cyborgs.

Professor Warwick has previously had a chip fitted into his arm which could activate sensors in doors and computers as he approached. He will soon have another transponder surgically implanted in his arm to record electrical signals controlling his movements, which can be played back so that he is then controlled by a prerecorded self. He predicts that such a technology could, one day, enable us to interact with machines in a completely different way. For example, we could soon be driving cars without steering wheels.

2 Work in groups of three. Play these roles in rotation: *Speaker*, *Reporter* and *Judge*.

The *Speaker* explains the main points of one text using only their notes.

The *Reporter* listens carefully and reports back to the Speaker a summary of the main points.

The *Judge* listens carefully to both Speaker and Reporter and points out any mistakes, main points omitted or additions the Reporter has made.

3 List the predictions, if any, in the articles you have read. Have any of them already taken place since the article was written? How likely are the others to happen in the near future?

4 Choose a domestic appliance and decide what functions an in-built computer would allow it to perform in addition to its basic function. Present your ideas to the rest of the class.

5 Search for the latest developments in the area of Information Technology. Make a summary of your findings to report to the rest of the class. Your report should have these sections:

1. Area of IT (domestic appliances, avatars, robotics)

2. Technology involved – hardware and software

3. Applications

4. Possible future developments

In addition to journals, magazines and newspapers, you can try these websites:

www.electrolux.co.uk

www.sony.co.uk

www.softimage.com

www.robotbooks.com/Mitsubishi-robots.htm

http://spectrum.ieee.org

People in Computing

1 Work in groups of three: A, B and C. Read your text and complete this table. You may not find information for each section of your table.

	A	**B**	**C**
1. job title 2. nature of work 3. formal qualifications 4. personal qualities 5. technical skills 6. how to get started 7. how to make progress			

A How to become a programming expert

The primary requirements for being a good programmer are nothing more than a good memory, an attention to detail, a logic mind and the ability to work through a problem in a methodical manner breaking tasks down into smaller, more manageable pieces.

However, it's not enough just to turn up for a job interview with a logical mind as your sole qualification. An employer will want to see some sort of formal qualification and a proven track record. But if you can show someone an impressive piece of software with your name on it, it will count for a lot more than a string of academic qualifications.

So what specific skills are employers looking for? The Windows market is booming and there's a demand for good C, C++, Delphi, Java and Visual Basic developers. Avoid older languages such as FORTRAIN and COBOL unless you want to work as a contract programmer.

For someone starting out, my best advice would be to subscribe to the programming magazines such as Microsoft Systems Journal. Get one or two of the low-cost 'student' editions of C++, Delphi and Visual Basic. Get a decent book on Windows programming. If you decide programming is really for you, spend more money on a training course.

B How to become a Computer Consultant

The first key point to realise is that you can't know everything. However you mustn't become an expert in too narrow a field. The second key point is that you must be interested in your subject. The third key point is to differentiate between contract work and consultancy. Good contractors move from job to job every few months. A consultant is different. A consultant often works on very small timescales – a few days here, a week there, but often for a core collection of companies that keep coming back again and again.

There's a lot of work out there for people who know Visual Basic, C++, and so on. And there are lots of people who know it too, so you have to be better than them. Qualifications are important. Microsoft has a raft of exams you can take, as does Novell, and in my experience these are very useful pieces of paper. University degrees are useless. They merely prove you can think, and will hopefully get you into a job where you can learn something useful.

Exams like Microsoft Certified Systems Engineer are well worth doing. The same goes for NetWare Certification. However, this won't guarantee an understanding of product, its positioning in the market, how it relates to other products and so on. That's where the all-important experience comes in.

Here's the road map. After leaving university you get a technical role in a company and spend your evenings and weekends learning the tools of your trade – and getting your current employer to pay for your exams. You don't stay in one company for more than two years. After a couple of hops like that, you may be in a good position to move into a junior consultancy companies. By the age of 30, you've run big projects, rolled out major solutions and are well known. May be then it's time to make the leap and run your own life.

C How to become an IT Manager

IT managers manage projects, technology and people. Any large organization will have at least one IT manager responsible for ensuring that everyone who actually needs a PC has one and that it works properly. This means taking responsibility for the maintenance of servers and the installation of new software, and for staffing a help-desk and a support group. Medium to large companies are also likely to have an IT systems manager. They are responsible for developing and implementing computer software that supports the operations of the business. They are responsible for multiple development projects and oversee the implementation and support of the systems. Companies will have two or three major systems that are probably bought off the shelf and then tailored by an in-house development team.	Apart from basic hardware and software expertise, an IT manager will typically have over five years' experience in the industry. Most are between 30 and 45. Since IT managers have to take responsibility for budgets and for staff, employers look for both of these factors in any potential recruit. Nearly all IT managers have at least a first degree if not a second one as well. Interestingly, many of them don't have degrees in computing science. In any case, the best qualification for becoming a manager is experience. If your personality is such that you're unlikely to be asked to take responsibility for a small team or project, then you can forget being an IT manager. You need to be bright, communicative and be able to earn the trust of your teams. Most of this can't be taught, so if you don't have these skills then divert your career elsewhere.

2 Now share information orally about your text with others in your group to complete the table for each of the occupations described.

3 For which of the careers described are these statements true? More than one career may match each statement.

1. You may work for only a few days or a week for a company.

2. It's a good idea to buy books on languages such as C++.

3. You are responsible for developing and implementing the software a company needs to run its operations.

4. You need to be able to break down a problem into a number of smaller tasks.

5. It's worth paying for a training course if you get serious about this career.

6. Your objective is to become self-employed.

7. It's important you have the right personality to lead a team.

Living without the Internet

1 In the same week that three people lost their jobs for misusing the Internet at work, a BBC journalist tried to work for three days without going online. How important is the Internet for life in the 21st century?

2 How many hours do you spend online each day? Compare your answers with a partner.

a) Under 1 hour b) 1 – 2 hours c) 2 – 4 hours d) over 4 hours

3 Guess the correct figures in the following statistics. Scan the last paragraph of the article to check your answers.

a) **Half** / **two-thirds** / **three quarters** of homes in the UK have access to the Internet.

b) The British spend about **15 / 25 / 35** hours online per month.

Living offline

Rory Cellan Jones is a technology writer for the BBC. He decided to see if he could spend 72 hours without going online and still do his job. So, he stopped using the Internet at work and at home; he stopped playing online games with his friends; he could still jog, but he couldn't jog and listen to the latest podcasts on his MP3 player. Nor could he sit on the train or in the bar and send e-mails using his Blackberry.

Rory is a journalist. Before the experiment began, his boss believed it would be impossible to do his job without the Internet. Rory has written a humorous report of his experience. At the end of three days, he had 165 e-mails waiting. Many of these e-mails he knew he could delete without reading. Rory reported that without dealing with his e-mails and without surfing the web, he achieved a lot of work. He concludes that the Internet can be a 'magnificent way to waste time.'

In the same week as Rory's experiment, three council workers lost their jobs for spending two hours a day on the Internet auction site. One of the workers was sacked; the other two resigned. Some people criticised the decision of their employer, saying that nowadays the Internet is part of our working lives. Others think that wasting two hours a day is wrong. One suggestion has been for companies to limit Internet access to lunch break.

Our private and professional lives have certainly been changed forever by technology. Two-thirds of homes in the UK have access to the Internet. The British spend about 35 hours online per month. How essential is the Internet for people at work? Could they do their jobs without it? Maybe, like Rory Cellan Jones, you could actually be more productive.

4 Read the whole article. Why did three workers lose their jobs? What did the journalist conclude?

5 Discuss the following questions in small groups. Be ready to report your ideas to the class.

a) If you didn't use the Internet for 72 hours, how many unwanted mails would you receive?

b) Should companies allow employees unlimited access to the Internet at work?

The Development of Computers

1 Read sentences A—F below. Then read the text “The Development of Computers”. Do you agree or disagree with the statements? What are the reasons?

A) The first computers used two electrical components connected together with wires.

B) In the late 1940s, computers were made using vacuum tubes, resistors, and diodes.

C) Transistors were invented in 2000.

D) Computers using transistors were called second generation computers.

E) Nowadays, complete circuits can be made from a single piece of semiconductor, called a chip.

F) Computers using integrated circuits were first produced in the 1980s.

The Development of Computers

The first computers used thousands of separate electrical components connected together with wires. In the late 1940s, computers were made using **vacuum tubes**, resistors, and diodes. These computers were called first generation computers.

In 1956, transistors were invented. Transistors are made from materials called **semiconductors**. Computers using transistors were called the second generation computers. Second generation computers were smaller than the first generation computers. Second generation computers also used less electrical power. Both first and second generation computers were very expensive.

Computer components (such as transistors, diodes, resistors) can now be made from semiconductor materials of different shapes. Nowadays, complete **circuits** can be made from a single piece of semiconductor, called a chip. Such circuits are

called **integrated circuits**. Computers using integrated circuits were first produced in the 1960s. They were known as the third generation computers. Their integrated circuits had about 200 components on a single chip. Today, we can produce more than 100,000 components on a single chip. A chip can be as small as 0.5 cm square.

With the invention of chips, computer manufacture has become much simpler. The manufacturer does not have to connect thousands of components together. Most of the connections are made inside the chip. It is even possible to build a complete processor on a single chip. A processor on a single chip is called a microprocessor.

Vocabulary

integrated circuit — интегральная (микро)схема (микрочип, чип)
integrating circuit — интегрирующая цепь
circuit — цепь, схема
semiconductor — полупроводник
vacuum-tube — радио-электронная лампа
attempt [ə'tempt] *n* — попытка, опыт
v — пытаться, пробовать
achievement [ə'tʃi:vment] n — достижение, выполнение
restriction [ris'trikʃən] n — ограничение

2 Choose the best ending. Translate the sentences into Russian.

1. The first computers used thousands of ...	a) transistors were invented.
2. In 1956 ...	b) separate electrical components connected together with wires.
3. Second generation computers used less ...	c) semiconductor materials of different shapes.
4. Computer components such as transistors, diodes, resistors can now be made from ….	d) electrical power.
5. Nowadays, complete circuits can be made from a single piece of semiconductor which ...	e) is called a microprocessor.
6. A processor on a single chip ...	f) is called a chip.

3 Make up sentences using the following words

a) processor, microprocessor, called, A, on, is, a, chip, a, single.

b) made, Transistors, semiconductors, called, are, from, materials.

c) Nowadays, chip, a, complete, can, called, circuits, be, from, piece, single, made, of, semiconductor, a.

4 Read the text again. Fill in the chart and compare with a partner.

Types of computers	Characteristics
First generation computers	
Second generation computers	
Third generation computers	
Forth generation computers	

Queen launches Facebook page

1 Find definitions of the following words:

portfolio _____

micro-blogging _____

subscriber _____

status _____

forum _____

hotbed _____

The Queen launched her own Facebook page in November 2010, reinforcing her presence in online social networking circles. Her Facebook presence adds to the list of her growing online **portfolio** – a Twitter page for **micro-blogging** (known as 'tweeting') launched in 2009 which currently has almost 90,000 followers; a YouTube channel for videos created in 2007 with nearly 35,000 **subscribers**; and a Flickr account for royal photographs opened earlier in 2010.

The British Monarchy Facebook page holds pictures of the Royal family, information detailing royal engagements, and news updates about royal events and ceremonies on which people can post their feedback and comments. But the queen will not be updating her **status**, tagging herself in photographs or 'liking' other people's feeds. The page is a not a personal profile for the British Monarch but another **forum** created collaboratively by representatives from Buckingham Palace, Clarence House, and the Royal Collection to bring the Royal family into the twenty-first century and engage the general public in royal life. The site has gained over 200,000 fans since its launch and follows in the footsteps of Prince William's official online presence which has been regularly updated with details of his recent travels.

The Queen's Facebook page was not received well by all, and quickly became a **hotbed** for debate from many anti-royalists and others with negative feelings towards the British Monarchy. Abusive comments have had to be removed from the page and it is monitored closely for offensive commentary.

2 Answer the following questions:

1. Have a look at the Queen's Facebook page. Do you think the site is interesting? Do you think the site will be a successful way of engaging people in royal life?

2. Do you use any social networking sites? What do you use them for?

3. Why do you think social networking sites are so important for engaging public interest?

Answer key

Unit II Computers and jobs

LANGUAGE WORK 9 Complete **the letter of application** with the correct forms of the verbs in brackets

I am writing to apply for the position of database analyst, which was advertised on 27th October in *The Times*.

I graduated in May 2007 with a degree in Computer Science from the University of London. Before taking my present job, I worked as a computer operator at NCR. I stayed in this job **until** April 2009. **For** the last two years I have been working part-time as a database administrator for Intelligent Cybernetics. I have managed the accuracy and efficiency of databases. I have good analytical skills. I studied languages at school and I made several visits to Germany, so I have a basic knowledge of German.

I now feel ready for more responsibility and would welcome the opportunity to work for your company.

I enclose my curriculum vitae. I will be available for an interview at any time. I look forward to hearing from you.

Unit IV ICT systems

6 Complete these sentences with the passive form of the verbs in brackets.

1 are made
2. are used
3. have been equipped
4. was developed
5. are being replaced
6. will be accessed
7. was being fixed
8. is transmitted

7 With the help of this text, sequence the steps in the operation of the new speed trap. Then describe this operation by converting each of the statements to the passive. Add information on the agent where you think it is necessary.

1. f 2. a 3. d 4. h 5. b 6. e 7. g 8. c

The time each vehicle passes is recorded by the first unit.
Each vehicle is identified by its number plates using OCR software.
The information is relayed to the second unit.
The time each vehicle passes is also recorded by the second unit.
The time taken to travel between the units is calculated by the microprocessor.
The registration numbers of speeding vehicles are relayed to the police headquarters.
Each vehicle is matched with the DVLC database by a computer.
Using mailmerge a letter is printed off to the vehicle owners.

Unit V Web design

5 Complete this advice about web design with suitable modal verbs. There may be more than one possible answer.

A well-designed website should be neat and organized. Words should be surrounded by sufficient white space. Use dark text on a light background, preferably white. You can divide the page into columns with a table or use CSS to create the page layout. Usually the navigation bar appears on the left side of the page. You can display it on all the pages of your website by using a frame. It is a good idea to put a link to the top of the page at the bottom of a long text. Websites with graphics are more inviting than those written in plain text, so you may/might like to insert some graphics into your documents. Once live, you should update your website regularly.

Glossary

blog – a user-generated website where people express their opinions. The entries are displayed in a reverse chronological order. The term comes from *web log*, coined by Jorn Barge in 1997 to refer to an online diary.

blogging – writing web logs.

Bluetooth – a wireless technology that allows handhelds, mobile phones and other peripheral devices to communicate over short distances.

Cascading Style Sheets (CSS) – a mechanism for adding style (e.g. fonts, colours, spacing) to web documents.

database – a file of structured data

Dreamweaver – a program from Adobe (originally created by Macromedia), used for building websites.

DTP – Desktop Publishing

Flash – the Adobe Flash Professional multimedia authoring program, used to create animations and advertisements. It supports a scripting language called ActionScript, and the streaming of audio and video.

forum (for something) **–** a place where people can exchange opinions and ideas on a particular issue; a meeting organized for this purpose *an Internet forum; to hold*

an international forum on drug abuse; Television is now an important forum for political debate.

FrontPage – a web editor from Microsoft, used for designing web pages.

GPS – Global Positioning System

home page – the introductory page that tells visitors what information is contained on a website. It has links to the other areas of the site. It can also include information such as when the site was built or updated.

hotbed of something **–** a place where a lot of a particular activity, especially something bad or violent, is happening *The area was a hotbed of crime.*

HTML – the language used to create hypertext documents (e.g. web pages); short for *Hypertext Markup Language*.

HW (hardware) – the physical units which make up a computer system.

ICT system – a system that uses information and communications technologies.

Java – the programming language from Sun Microsystems for building internet applications. Java programs (called applets) let you watch animated characters and moving text, play music, etc.

LAN (Local area network) – a group of computer devices interconnected within a small physical area, like a home or office building.

Linux – open-source software developed under the GNU General Public License. This means anybody can copy its source code, change it and distribute it.

Local area network (LAN) – a group of computer devices interconnected within a small physical area, like a home or office building.

Mac OS – an operating system created by Apple and used on Macintosh computers.

microblogging – the activity of sending regular short messages, photos or videos over the Internet, either to a selected group of people, or so that they can be viewed by anyone, as a means of keeping people informed about your activities and thoughts

MMS – Multimedia messages

MP3 – (MPEG audio layer 3) 1. A standard format that compresses music files, enabling them to be transmitted over the Net more easily. 2. A file containing a song or other audio data that is encoded using the MP3 standard.

MPEG – Moving Pictures Experts Group

PC – a personal computer, which carries out processing on a single chip.

PDA – Personal Digital Assistant

Photoshop – an image manipulation program developed by Adobe Systems.

portfolio – 1. a collection of photographs, drawings, etc. that you use as an example of your work, especially when applying for a job *She spent most of last year getting her portfolio together*. **2** (FINANCE) a set of shares owned by a particular person or organization *an **investment/share portfolio** a portfolio manager* **3** (FORMAL, ESPECIALLY BRITISH ENGLISH) the particular area of responsibility of a government minister *the defence portfolio a ministerial portfolio She resigned her portfolio. He was asked to join as a **minister without portfolio*** (= one without responsibility for a particular government department). **4** the range of products or services offered by a particular company or organization *a portfolio of wines*

SMS – Short Message Service

spreadsheet – a program for financial planning which allows the user to analyse information presented in tabular form, by manipulating rows and columns.

subscriber– **1** a person who pays money, usually once a year, to receive regular copies of a magazine or newspaper *subscribers to 'New Scientist'* **2** (BRITISH ENGLISH) a person who gives money regularly to help the work of an organization such as a charity *subscribers to Oxfam* **3** a person who pays to receive a service *subscribers to cable television*

telemarketing – the process of selling goods and services over the telephone

teletext – a method of communicating information by using TV signals; an extra signal is broadcast with the TV picture and translated into text on the screen by a decoder

teleworking – the practice of working at home and communicating with the office by phone and computer (also called *telecommuting*)

UNIX – an operating system, designed by Bell Laboratories in the USA, found on mainframes and workstations in corporate installations.

URL – Uniform Resource Locator

WAP – Wireless Application Protocol

web page – an individual document on the Web, identified by its own unique URL. Web pages contain different elements, such as text, pictures, video, links, etc.

website – a collections of web pages (usually including a homepage), set up by an organization or an individual, which are usually stored on the same server. The pages are all linked together; you can move from one page to another by clicking on words or pictures called hyperlinks.

Wi-Fi – Wireless Fidelity

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