

INTRODUCTION

There is a wide range of jobs in computing and different titles are sometimes given to the same type of job. Jobs mentioned in this unit include:

- A **Webmaster** – a person who administers a Web server.
- A **help-desk troubleshooter** – a person who works as part of a telephone service that helps users solve problems that occur on computer systems.
- An **applications programmer** – a person who writes **applications programs** (computer programs designed to be used for a particular purpose e.g. wordprocessors, spreadsheets or database programs).
- A **security specialist** – a person who tests the security of networks systems and advises customers how to introduce and maintain security policies including:
 - a setting up secure **password** systems (secret codes used to control access to a network system)
 - b installing **firewalls** (a combination of hardware and software used to control the data going into and out of a network)
 - c keeping out **hackers** (skilled programmers who attempt to gain unauthorised access to network systems)
 - d dealing with **viruses** (programs written with the purpose of causing damage or causing a computer to behave in an unusual way).
- A **systems programmer** – a person who specialises in writing **systems software** (a program or set of programs that are used to control the basic functions of a computer system e.g. operating system programs).

Being employed in any of these jobs requires the person to have particular formal

qualifications, personal qualities and technical skills. Qualifications mentioned in this unit include:

- a **Standard grades in Maths**. This is a basic level school qualification in mathematics.
- b **HNC in Computing**. This is a Higher National Certificate in computing including the study of **hardware** (the physical components of a computer system) and **software** (programs and data). This is a college qualification that can usually be obtained by a period of part-time study.
- c **HND in Computing Support**. This is a Higher National Diploma in installing, maintaining and **troubleshooting** (to find and fix faults in a system) computing systems and training users. This is a higher college qualification than an HNC but not as high as a university degree. It usually requires a period of full-time study.

An **IT (Information Technology) support engineer** is a professional who provides help for computer users by designing, building and maintaining **information technology systems** (systems and equipment such as computers for dealing with information). A support engineer might start out in their career by working on a **help-desk** (a telephone service for helping users solve problems that occur on computer systems).

An **IT manager** manages projects, technology and people. An **IT systems manager** is responsible for developing and implementing computer software that supports the operations of the business. **Off-the-shelf systems** are ready-made systems that are purchased from systems suppliers. **In-house systems** are developed by the employees of the company. A university degree is usually required but not necessarily

in **computing science** (the study of computers and their use). The best qualification for becoming a manager is experience.

A **systems analyst** studies systems in an organisation and decides how to **computerise** them (change the system into one controlled by computers). They analyse requirements and report on options for using **information technology** (the study and practice of techniques or use of equipment for dealing with information).

A **software engineer/designer** produces the programs which control the internal operations of computers. They use **program libraries** (sets of programmed functions that are made available for use by any program) to produce programs. They also design, test and improve programs for a variety of purposes including **computer-aided design and manufacture** (the production of technical designs and the production of goods using machines controlled by computers).

A **computer services engineering technician** is responsible for installation, maintenance and repair of computers and **peripherals** (associated equipment). They install, test, troubleshoot, **upgrade** (add components to improve the features or performance of a system) and carry out routine maintenance on hardware, ranging from **personal computers** (a computer designed to be used by one person at a time) to **mainframes** (the largest and most powerful type of computer, usually operated by a team of professionals).

A **network support person** or **computer engineer** maintains the link between **PCs** (personal computers) and **workstations** (powerful desktop computers used for work that requires a lot of processing e.g. graphic design) connected in a **network** (a number of computers and peripheral devices connected together). They use **telecommunications**

(technology concerned with communications over long distances), software, electronic skills and knowledge of networking software to troubleshoot systems. This may involve work with the controlling software, on the wiring, **printed circuit boards** (the electronic boards that hold the components of a circuit and connect them together), software or **microchips** (small integrated electronic circuits) on a **file server** (a powerful network computer that stores computer files and makes them available to users on a network), or on cables either within or outside the building.

An **applications programmer** writes **applications programs** (computer programs designed to be used for a particular purpose e.g. wordprocessors, spreadsheets or database programs).

A **systems support person** is an **analyst programmer** (a person whose job is a combination of systems analysis and computer programming) who is responsible for maintaining, **updating** (bring up to date i.e. change into the latest version) and modifying the software used by a company. Some specialise in **systems software** (software that handles the basic operation of the computers). This involves use of **machine code** (computer language that consists entirely of a combination of 1s and 0s) and specialised **low-level computer languages** (computer languages, such as machine code or assembly language, that is closer to the form that a computer understands than to that of a human language). They may sort out problems encountered by users including amending an area of **code** (text of a program or part of a program using a computer language) in the software, retrieving files and data lost when a system **crashes** (fails suddenly and completely, usually referring to the failure of a hard disk).

OBJECTIVES

By the end of this unit, Ss should be better at:

- reading and note-taking
- writing a c.v.

They should understand and be able to use structures used for requirements:

- *need to, have to, must, be + essential, critical.*

They should have a better understanding of terms used in job advertisements.

STARTER

1 Do this in pairs. As follow-up, Ss can list all the other occupations they know in Information Technology.

Key 1

- 1 The person responsible for setting up and maintaining an organisation's Internet website.
- 2 A person who, by phone or computer, advises users on software and hardware problems.
- 3 A programmer who codes applications software.
- 4 The person responsible for ensuring that an organisation's hardware, software and data are protected from computer criminals, accidental damage and loss.
- 5 A person who codes systems software, fine-tunes operating system performance, and handles other systems software-related tasks.

READING

2 This is a jigsaw reading task for groups of three. If you wish, you may do Text A together as an example; then set the remaining texts for groups of two. Warn the Ss that they may not find information for each section of their table.

Key 2**A**

- 1 Programmer
- 2 creating software
- 3 needed but not specified

- 4 good memory, attention to detail, logical mind and the ability to work through a problem in a methodical manner
- 5 Knowledge of Windows, C, C++, Delphi, Java and Visual Basic
- 6 Subscribe to programming magazines such as Microsoft Systems Journal. Get 'student' editions of C++, Visual Basic and Delphi. Get a decent book on Windows programming.
- 7 Spend more money on a training course.

B

- 1 Computer Consultant
- 2 Working freelance to provide expert advice to companies and other clients in aspects of computing for short-term periods.
- 3 University degree simply to get a job. Microsoft Certified Systems Engineer and Novel Linux Certification are of real value.
- 4 Not stated but we can infer ambitious, determined, hard-working.
- 5 Knowledge of Visual Basic, C++, and other computer languages.
- 6 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.
- 7 Don't stay in one company for more than two years. Move on and up to become a junior consultant in one of the larger consultancy companies.

C

- 1 IT Manager
- 2 Managing projects, technology and people, for example, developing and implementing computer software, development projects and the implementation and support of systems.
- 3 A first degree and often a second one as well but not necessarily in computing science.
- 4 Bright, communicative and able to earn the trust of your teams.
- 5 Basic hardware and software expertise. We can add ability to manage and budget.
- 6 Gain experience in looking after a small team or a project.
- 7 Not stated.

3 Make sure Ss do the information exchange orally.

4 Do this individually, then compare in pairs. Ss may need to refer to the texts if their notes are deficient. Make sure Ss justify their answers.

Key 4

- | | |
|-----|-----|
| 1 B | 5 A |
| 2 A | 6 B |
| 3 C | 7 B |
| 4 A | 8 C |

LANGUAGE WORK

Requirements: *need to, have to, must, be + essential, critical*

Divide the board into two sections. Label one *Required* and the other *Not required*. Ask Ss to search the texts for examples of both. Write the examples they find on the board in the correct section. Draw their attention to each of the ways used:

Required

- You need to be able to empathise with the person at the other end of the phone.*
- IT managers have to take responsibility for budgets.*
- You must be interested in your subject.*
- You must have worked for at least two years in systems analysis.*
- Experience with mainframes is essential/critical.*

Not required

- You don't need to have a degree in computing science.*
- You needn't have a degree in computing science.*
- You don't have to be an expert in everything.*

Point out that *have to do sth* is similar to *must do sth* but the negative forms have different meanings. *Don't have to* = not required, *mustn't* = a warning or rule that it is important not to do *sth*. Show that *need* can behave like a modal and an ordinary verb.

You may also wish to present the language used in job advertisements for desirable but not essential criteria. For example:

A knowledge of C++ would be an advantage.

5 Do this individually, then compare in pairs.

Key 5 (examples only)

- need
- mustn't
- need
- needn't
- must
- have to
- must, needn't
- need
- must
- needn't

6 Make sure Ss are familiar with the abbreviations often used in advertisements such as *yrs, min, exp, &*. They can refer to the Glossary for any of the many technical abbreviations used.

Key 6

- You must be a technical specialist with a minimum of two years' work in systems programming. You need to have experience of Netview, automation, design and support.
- You must be an IBM MVS support technician. You must have worked for at least one year with VTAM, NCP, SSP, NPM and IBM hardware. Being authorised to work in the EU is essential.
- You must have three years' experience in a SAP Basic Technical Environment. You need to be a team player with strong analytical and problem-solving skills. Ability to communicate issues and solutions and manage time effectively is critical.

- 4 You need to have strong Unix experience. The ability to use HTML, DHTML, XML and JavaScript is essential. You must have knowledge of Shell Scripts.
- 5 You must be CCNA qualified with excellent skills in the surrounding technologies. You must have worked for at least two years in support.
- 6 You need to have knowledge of current Network Operating Systems. You must have experience of ERP systems implementation. Very strong managerial skills are essential.

PROBLEM-SOLVING

7 When pairs have completed this task you can ask them to write descriptions of the requirements of some of these posts in full sentences.

Key 7

- 1b IT Engineer (Network & Database)
- 2f Team Leader
- 3e E-commerce Consultant
- 4a Visual Basic Developer
- 5c Web Developer
- 6d Network Support

SPEAKING

8 This is a variation of the game *Twenty Questions*. Ss can ask only *Yes/No* questions to identify their partner's occupation. When they're fairly sure they know, they can say, *You're a programmer/I think you're a programmer/You must be a programmer.*

WRITING

9 Explain the conventions of a c.v. In the UK GCSE grades are taken in the fifth year of secondary school. HNC and HND are Higher National Certificate and Diploma. Ss can be creative in the experience they list and optimistic in the qualifications they claim for the purpose of this exercise.

SPECIALIST READING

Key A

- 1 To improve your marketability to potential employers by upgrading your skill-set.
- 2 Whose training should you undertake? Whose certificates should you get? How certain can you be that your salary will rise as a result of your training?
- 3 Microsoft Word
- 4 Taking a training course and self-study
- 5 The amount of work you'll have to do to get up to speed for the exams and the difference between passing or failing the exam.
- 6 Because the exams have time limits, and you need to get used to answering the requisite number of questions within the allotted time.
- 7 The title of a course
Details of what the course offers
Whether there are pre-requisites for attendants
What the training company is prepared to do if attendants don't have the minimum knowledge necessary to be on the course.
- 8 You lose your certification until you take an update.

Key B

- 1 a MCSA b MCSE c MCT d MCSD
- 2 a True b False c False d True e False f True g True