Listening Script

UNIT 1

Computer Users

primary school teacher We've got a new program with 3D graphics to encourage young children to tell stories. We tried it out last term and now we use it regularly. There's a mat in front of the monitor, like a carpet. There are pressure pads under the mat. When the children stand on them, they can move about inside the pictures on the screen. If they stand on the right, they, er, can move to the right, and so on. The good thing is that it works better if there are more children on the mat. This encourages them to work together.

What I like about this program is that if you ask the children what they've been doing, they don't say, 'We've been working with the computer', they say 'We've been telling stories'. The computer doesn't get in the way of learning, it's just a tool. We don't get that reaction when we sit them down at a keyboard.

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

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

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

UNIT 4

Peripherals

PART 1

A What's the difference between an ordinary camera … a conventional camera, and a digital camera?

B At the most basic level, a digital camera isn't much different from a conventional camera. There's a lens, a viewfinder and it takes pictures. The only fundamental change is that a charge coupled device - a CCD - is used in place of the film.

A What's a CCD?

B It's an assembly... a set of thousands of photo-transistors - one for each pixel in the image. You know what a pixel is?

A Yes, it's a kind of dot... it makes up a picture, an image on a screen.

B It's short for picture element. Well, each pixel in the CCD consists of three photo-transistors, one covered by a red filter, one by a blue one and one by a green. Three images - one for each of these colours - are built up. When they're combined, you get a full-colour photograph.

A What are the advantages, the plus points, of a digital camera?

B You never have to buy another film, there's no film, there's no chemical processing involved. There's no delay waiting for the film to be developed. Instead of being held on film, the images are written to solid state memory. Most cameras have an LCD on the back. You can see straight away what your last shot looks like. If you don't like it, you can delete it and take another. You can download the images to a PC for retouching, manipulating, or printing out.

A Do you need any special software?

B Yes, but it comes with the camera. It's not difficult to install. You can also use your TV to give slide shows and you can email copies to your friends.

PART 2

A Any disadvantages? What's the down side?

B Well, they're **still** pricey but they're getting cheaper. And the quality isn't as sharp as a good 35 mm. People forget too that if you want prints, you have to invest in a photo-quality colour printer. That can be expensive and printing costs can also be high - the paper, the ink and so on.

A Anything else?

B Batteries. You get through them. Digitals are power-hungry especially if you use the LCD a lot for playback.

A If I wanted to buy one, what should I look for?

B First of all, the resolution. It's like buying a monitor. The higher the resolution, the more details you'll be able to get in the picture. Don't buy anything less than two million pixels.

A second major specification, and it's tied up with image quality, is the number of pictures you can store before the camera is full and you need to download to your PC. A 1280 by 960 image takes over a megabyte of memory. That doesn't leave much room for many shots on a typical 16 megabyte Flash card. Fortunately you can compress the data and squeeze a lot more lower resolution shots onto one card.

It's worth considering too the type of battery used. Get one with rechargeable cells.

UNIT 5

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.

I Uhum.

P And the second one was a Higher National Diploma in Computing Support.

I Ah, that's quite a change. Did you

originally think of being a programmer?

P 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.

I Erm, what were the main subjects in your diploma course?

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

I Communication, anything to do with Telecommunications?

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

I Was there a practical component in the course?

P Yes, we had to assemble computers.

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

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

PART 2

I How up to date did you feel the course was?

P I always felt it was a bit behind current developments.

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

P Erm, 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 always felt they should have given some sort of work experience. I know some colleges do.

I Erm, that would be a great thing because most students have paper qualifications and no practical experience.

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

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

P Erm, 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.

I Hm! 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.

P 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.

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

P Erm, what you had to do in front of a video camera, was to choose a subject and, erm, 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

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

P 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.

I Uhum.

P I've noticed a few times when I've gone to customers who want something fixed that I don't know about that I learn really fast.

I So you're teaching yourself.

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

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

P No.

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

P 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.

I That's not something the college gave you. They didn't say, er, 'Here are a useful set of Web addresses'?

P 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.

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

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

UNIT 10

Interview:
Computing Support Officer

PART 1

Clive Erm, I've got a whole lot of files in a folder which I call 'Contract' which has just grown over the years so, er, if I go into it and let you see it... these are all Word files. Each time a new contract has come along, I've simply added it there and it's got the label sometimes of the client, sometimes it's got a country label. It's got so enormous that I'm, er, it's now taking time to find things. What I want to do is to create subfolders for certain countries where we have a lot of clients.

Barbara OK

C Starting with Japan, for example, so I want to have Contract as the main heading, if you like, and I want to be able to have subfolders …

B Underneath there …

C … underneath, certainly for Japan, Italy, Finland and Hungary, and there may be others.

PART 2

B OK. So the way I'll do it is to go through Windows Explorer.

C So, OK, so how do I get into Windows Explorer?

B So let's click on Start on your status bar. The Start button and …

C Er, sorry, where are we?

B If you bring your cursor down to the very bottom. You see that little status bar that comes up.

C Oh, right. OK.

B And there should be a Windows Explorer option … And you don't have one!

C Erm, how odd.

B OK. Not a problem though. Instead of

clicking on Programs, you can click on Run on your Start menu and just type in the word Explorer and hit…

C   In this box? Just Explore.

B   Explorer. And hit OK. And that should launch it.

C   Oh, yeh.

B   OK. This is Windows Explorer and if you'll notice next to where it says Windows in your C drive there's a little minus sign.

C   Right…

B   If you click on that, that'll just compact your C drive.

C   Single click?

B   Yes. And that just gets it out of the way so now we can see all of our drives.

C   Right…

B   And you store everything on DIRDATA? Is that right?

C   Yes.

B   So, right next to your C drive there's a little plus sign. If you click on that.

C   What… ? OK …

B   That opens up and shows you all your folders.

C   Why are … Does the plus indicate that there are other folders?

B   Yes. If there were no other folders in there you wouldn't have a little box there. You'd just have the one folder name whatever it was.

C   And what's the minus? Is that just open and close?

B   Yes, basically. So expand and contract.

C   OK…

B   And you're storing them in Word, are you?

C   Yes.

B   So click on the little plus sign next to the Word folder. And that shows you all your folders in Word.

C   Right

B   And now you want your Contract folder. So we can click once on Contract and you'll notice on the right hand side it shows us all the files we have within that folder.

C   Right…

B   So what we can do now is… in our Explorer window click on File on the menu bar and click on the word New on the top.

C   Uhuh, right…

B   And that will bring us another little box up … And click on Folder. And that's going to create a subfolder in Contract because we had Contract highlighted.

C   Ah, OK…

B   And now we can give it a new name. It gives a default name of New Folder and we want to type in what we want to actually call it.

C   So within … where it says New Folder, I remove that and I put in whatever the

name of the new folder is.

B   Yes, you can delete that.

C   So let's put in the new name 'Japan' and…

B   You can either hit Enter or just click outside the box. OK and is that the only folder you want to create?

C   No, I'm going to create Italy, Finland and Hungary.

B   OK, so we want to make sure that we have Contract highlighted. Right now Japan remains highlighted and if you clicked File, New and Folder now it would create a folder in Japan.

C   Ah, so it would create a sub-sub-folder?

B   Right…

C   OK…

B   So you just need to click on Contract to make sure it's highlighted and go File and there you are.

C   So it's the same again. File, New, Folder.

PART 3

C   OK. Now if I want to start moving into that sub-folder some of these files how do I do that?

B   Well how I would do it is … You'll notice on the left hand … on the left hand side where it's showing you all your folders … that Contract now has a little plus sign next to it …

C   Right…

B   … because we've created sub-folders within Contract.

C   Uhuh…

B   So if you click on the little plus sign next to your Contract folder …

C   Right…

B   … it shows you your two sub-folders in there.

C   Oh, yeh. OK. So Hungary and Japan.

B   And on your right hand side you're still looking at all of your files that are within Contract.

C   Right…

B   So now you can actually click on one of those files, hold your mouse button down, and drag it over to the sub-folder …

C   OK…

B   … and that will drop it into the sub-folder.

C   This is one?

B   Yeh. Bring it over and it'll highlight the sub-folders.

C   Just over the top of Japan?

B   Yes, because Japan is highlighted now that's telling you that's where it's going to go.

C   So just like that. As soon as it's highlighted that's it?

B   Yeh. So if you click on to the Japan folder on the left you'll notice on the

right it shows you your file there.

C   Oh, right. How do I go back?

B   Click on Contract again on the left.

C   OK. And that's it.

B   Yeh. And if you actually drag anything over there and you realise you've dragged it to the wrong place, and you're not sure if you dragged it to the right place, there is an Undo. Under Edit on the menu bar.

C   Right…

B   So that's a handy tool. Sometimes you drag something and then your hand twitches and you never know…

C   Right. I think I can do it.

B   OK.

<div style="border:1px solid #000;display:inline-block;padding:4px 12px;background:#b33;color:#fff;font-weight:bold;">UNIT 13</div>

The World Wide Web

To find the webpage you want, you have to click on a webpage hyperlink or enter a URL, a Uniform Resource Locator into a browser. The URL is the address of the page. When you do that, the browser sends the URL to a DNS server.

The DNS server is the Domain Name Server. It uses a look-up table to find the IP address of the Web server referred to in the URL. The IP address is a unique, 32-bit, set of numbers. Erm, every computer on the Web has its own IP address.

Once the DNS server has found the IP address, it sends it back to the browser.

The browser then uses this IP address to send a request to the Web server. The request is sent as a series of separate data packets which include both the IP address of the Web server and the IP address of the browser computer. These data packets are first sent to a router computer, which uses the IP address of the Web server to determine the best available route for each packet.

The packets are passed from router to router until they reach the Web server. They may travel by different routes before reaching the server.

As the individual packets reach the Web server, they're put back together again.

The Web server now services the request by sending the requested webpage back to the browser computer. Again it travels as a series of separate data packets from router to router. This time the router uses the IP address of the browser computer to work out the best available path for each packet.

As the packets arrive at the browser computer they're combined to form the

webpage you requested and are displayed in your browser.

UNIT 15

Interview: Wepage Creator

Interviewer How long has your site been up?

John Just a couple of months. It's brand new.

I What's your site all about?

J It's called The Movie Shrine, www.the movieshrine.com, and it's just a site with movie reviews, strange things I've noticed about certain films, and lots of links to other movie sites.

I Why dedicate your site to this subject?

J I decided to make a site about movies because I've been a huge movie fan for a longtime. Right now, films are my biggest hobby.

I What makes your site special?

J I guess my site is just a little less formal than most of the film sites on the Internet. I've tried to make the layout unique and include material for movie fans of all types. It's for people who like movies of all kinds. There are plenty of sites for fans of particular actors or genres of movies like sci-fi, horror, films noirs and so on.

I How did you create your site?

J I created the site pretty easily using Netscape Composer, which is a program contained in Netscape Communicator. The actual address is www.geocities.com/orangecow, but I got a free domain name which redirects it to the site.

I What was the most difficult part?

J Oh, the design. Just working out how the site would look and how the pages would link up. I'd tried to put up a couple of websites before but after constructing the main page, I'd lost interest.

I How did you get your domain name?

J I got a free domain name from www.domainzero.com.The price of a 'free' domain is that all kinds of advertising is sent to your email, but that's a small price to pay.

I Have you registered your site on a search engine?

J No, I haven't gotten around to registering on a search engine yet. I'm told you have to really persevere to get listed. Yahoo! just seems to swallow submissions.

I Have you included links to other sites?

J I include many links to other sites. That may be the best thing about my site, the huge number of links. I'm also in a lot of Yahoo! Clubs and I've linked to them too.

I Has anyone linked to you?

J Since my site hasn't been around for very long at all, I don't think anybody has linked to me yet except for a couple of Yahoo! Clubs.

I How long do you spend updating your site?

J As often as possible but it's difficult during the week. My studies don't leave me a lot of time and I've got other interests. And I need to watch movies sometimes! Generally one update will take from forty-five minutes to an hour.

I What sort of feedback do you get from visitors?

J I haven't really gotten much feedback so far except from people I know and they like it, or say they do! I'm hoping that after more people discover the site I'll start to get more reactions via email.

I Do you have any tips for others creating a homepage?

J Pick a topic you're really interested in. Get a good domain name. Keep your site updated - nobody likes a static site. I would look at lots of other sites too for good ideas.

I What do you intend to do next with your site?

J I'm going to update the Movie Journal section and I'd like to build in new links.

I What's your favourite site?

J It would … my favourite site would have to be the Internet Movie Database www.imdb.com. That's not a very original answer but that site just has such a wealth of information about every kind of movie that it's probably my favourite.

UNIT 16

Communications Systems

In the short term, computers are certainly going to become more powerful and they'll also get cheaper. Erm, that means they'll become much more commonly available. It's likely they'll be integrated with other devices, erm, and may even become specialised … specialised devices you throw away when they go wrong. Monitors are going to change from cathode ray tube monitors to flat screen panels because they take up less space and use less power. Erm, there's likely to be devices used for security, biometric devices, for scanning your eye or taking your fingerprints. They'll be used instead of passwords. Printing... printers … colour printers, colour laser printers are becoming cheaper so more printing will be done in colour. Erm, you'll print your holiday snaps straight from a laser. The shape and design of computers are likely to change and become much more varied because we can now construct the motherboards in flexible form. Er, on the software side, companies are trying hard to improve voice control so you'll be able to talk to your computer to control it without using a keyboard.

Erm, yeh, another development which I expect to become more common in the near future is video. You'll be able to use your computer as a video-recorder and edit video on your computer. I expect the way that software is sold will change too. Erm, instead of buying individual packages people may rent or hire the components they need - wordprocessor or whatever - and connect to them over the Internet. Service providers **will** make different components available and you'll be charged a fee for the ones you use.

In the longer term they won't be able to make computers any more powerful using electronics so other methods may come in for the data signals in the computer. Perhaps laser lights or even quantum methods will be used. Computers will probably be integrated more with TV systems and with telephony and become much more communication devices. It's likely much smaller devices will be made … probably built into clothing so that you can walk about wearing a computer which will allow you to communicate wherever you go. At home our fridges, cookers and other devices almost certainly will be computer controlled. In the longer term there may even be devices implanted into our bodies to help people with disabilities. Computers might be implanted into the human brain. We might not call them computers in the future but they'll be everywhere.

UNIT 17

Computing Support

David Hello, this is Apricot Computers Service Division. My name's David, how can I help you?

Jennifer Hello, my name is Jennifer and we're having a problem with one of our Apricot computers.

D Now can you tell me what model of

computer you have?

I Yeh, it's an Apricot LS 550.

D An Apricot LS 550. OK, is the computer **still** under warranty?

J Yes, we only got it a month ago. So it should still be covered.

D Can you give me the service tag number?

J Yes, let me have a look. It's AM 964 … 70.

D That's AM96470. Wait a moment and I'll just look it up in my database.... Is that University of Edinburgh, 21 Hill Place?

J Yes, that's us.

D So can you describe what the problem is.

) Well it doesn't seem to be playing MIDI sound files from the Internet.

D Erm, MIDI sound files. Does it play other types of sound files?

J Yeh.

D And is it only when you're in the browser on the Internet that you're having this problem?

) No, we're getting the same fault when we use other programs like … erm … Microsoft Encarta.

D Right. What operating system are you using?

J Microsoft Windows.

D Which version of Windows?

) It's Windows 2000.

D And what type of processor do you have in the computer?

J It's got a Pentium 3.

D And how much RAM is installed?

J Let's see … 128 Megabytes.

D Is the computer connected to any kind of network?

J Yes, we have a LAN.

D What type of network?

J It's a Windows NT network.

D OK. Right. It sounds as if you may have a driver fault. Do you still have the original driver disk you got with the machine?

J Yes, we've only had it a month so it's all there.

D Well, you could try to reinstall the sound drivers and see if that cures the problem. If that doesn't cure the problem, can you contact us again and we'll send you out some new drivers to try.

I OK, I'll give that a try and get back to you if we have a problem.

D Er, if you're going to contact us again with this problem, can you quote this job number. If's E83095.

I Er, just a moment. I need to get a pen. Can you repeat that?

D OK, E … 83095.

) E83095.

D That's correct.

J Can I take down your name?

D Yes, my name's David, David Lister.

J OK, thank you, David and … er... we'll be in touch if there's any further problems.

D OK.

J Bye.

D Bye.

UNIT 20

Interview: The ex-hacker

PART 1

Interviewer Ralph was one of two 18-year-olds arrested in the 1990s for hacking into a large American company. They got into the CEO's personal files and left a very rude message. Well, he's grown up a bit and has been putting his knowledge to very good use. He's now a computer security expert, a 'white hat" hacker who uses his skills to make cyberspace safer. Ralph, what exactly is hacking and how do you go about hacking into a system?

Ralph Hacking simply means getting into computer systems... you don't have permission to get into. Erm, there are various ways of doing it. You can get in by trying to guess somebody's password. Or you find a bug in a computer system that will allow people with certain passwords to get in where they shouldn't.

I So you're sitting in front of your computer... somewhere, how do you set about getting into someone else's system?

R Sometimes it's very simple. People who hack into systems for a **living**- because they're employed by companies to test their systems - would say the first thing you do is to phone up someone who uses the system and you say 'Hello, I'm from your company. We want to test a new system.... We need your password, please, so that we can include you in the trial.' People are too trusting. They normally hand it over.

That's the easy way. If that doesn't work, then you find out by trying to connect to it over the Internet. And normally that's not desperately difficult.

Once you connect to the computer it **will**... ask you to ... log on and type an ID and password. You might at the simplest level try typing in 'guest' or 'demo' or 'help' and see what it gives you.

I How can you avoid being hacked into?

R There's a lot you can do but you have to keep at it to keep ahead of the hackers. Erm, you can install firewalls to restrict access to a network. You can have a callback system to make sure remote clients are who they say they are. Having really secure passwords helps. Don't use a common name or a dictionary word or anything short. Check the system regularly using event logs to find failed access attempts.

PART 2

I How did you get into this business in the first place? Were you a computer geek at school?

R I was a computer geek, a young anorak. I got into computers at school. I discovered that what the computers in the lab would let me see depended on what password I typed in and that's really where I started thinking about security.

I And how did you manage to get into the American company's files?

R I guessed some passwords and so on and because of various very silly mistakes the operators of the system made I managed to get right into the system at the highest level.

I And managed to get into the CEO's personal files.

R Yes, what happened there was I got into part of the system that said 'Please enter your ID' and then underneath that on the same screen told you what the ID was. It was the most senior ID on the system so I typed it in. It said 'You're logged on as systems manager what would you like to do?' And I said, I'll have some passwords please. And because I was logged on at the highest level it said 'Whose do you want?' And I said 'The CEO' because there was an account on the system in his name. And it gave it to me.

I Did you feel terribly excited?

R Yes, absolutely. People sometimes hack for money, for criminal purposes or for political purposes … they want to expose something. But often you hack because you're challenged. Because it's exciting. It is a very big challenge for a couple of 18-year-olds working on a basic PC to link directly to a very powerful machine that they've completely penetrated. It was great fun and it's a wonderful feeling and that's why we did it.

We never thought about the legal side of it. My parents knew that the phone **bill** was horrendous and that I spent an awful lot of time in my

bedroom on the computer but they didn't know quite what I was doing.

I   How did they track you down?

R   Well, because we never really tried to cover our tracks. We would boast to our friends, we would boast to girls. That got us known to the police and the computer crime unit. They arrested us. The guy who arrested us, the detective inspector, I'm now quite friendly with. I see him at computer conferences all over the world. But I met him first when he knocked at my door and took away the contents of my bedroom in black plastic bags.

I   Now you're helping companies to avoid people like you.

R   Yes, if you want to protect your systems it's a good idea to talk to people like myself rather than big city consultants... because I know the ways in which I would try to break into your system.

I   Do you hackers know each other? Is there a competitive element to all this? Is there a kind of rivalry?

R   I think in the beginning people did. Er, they would … sit round … talking about hacking and sharing passwords but nowadays because of the Internet... hackers are all over the world and they tend not to know each other and you tend not, because it's so illegal now and so many people are scared of it, people tend not to want to be known.

   There is rivalry. Everyone wants to be the first to hack into a really powerful system. The Pentagon gets something like 200 attempts a day to break into their systems.

I   Movies sometimes feature hackers.

R   I don't go much for the Hollywood … hacker. They show hackers coming into your system via the Internet and stealing all your data. That's not generally what happens. In reality about 75% of all hacks into company computers are done by current staff who are simply misusing the privileges you've given them …

I   A recent survey found that four out of ten UK consumers are reluctant to use credit cards for Internet purchases. How risky is it really?

R   Some people are nervous about giving their credit card number on the Internet. We've seen in the press, partly due to hackers, partly due to the incompetence of people who are running websites, that you can get databases of credit card numbers. But usually it's the retailers, not the buyers, who get done by people using fake or stolen cards.

   Using your credit card on the Internet is no more dangerous than giving your credit card number down the phone or paying at the supermarket with a credit card, throwing the receipt away where somebody can pick it up and then they've got your credit card number and a copy of your signature. The Internet is not as dangerous as that.

   My advice is, if you want to buy things on the Internet, get a separate credit card. Ask for a small limit. Then if it gets misused, you've cut your losses. You can buy a pre-paid charge card for small purchases. Long term, smart cards are probably the answer but you would need a reader on your PC.

UNIT 21

Software Engineering

Analyst If I could find out what you do at present. What kind of system do you have at the moment?

Hotel owner Well, we introduced erm a computerised system about five years ago but I'm not very happy with it. What we've got is erm, just a system that allows us to enter bookings as they come in.

A So is everything computerised or... ?

H No, it's only the reservations system.

A So what features would you like to add to this?

H Well, there are a number of things. I would like a more sophisticated system that would allow me to link reservations and invoicing. I'd like the system to handle invoices also.

A OK. Now the output. What kind of output are you looking for from this?

G Erm, well there are a number of things I'd like. One is of course the total invoice, a bill for the guests. I'd like it also to display room bookings so that if someone phones up it's easy for the reception staff to identify quickly which rooms are occupied and which are available.

A Is that on the screen?

H Yes, I would like it to be on the screen if possible. A sort of room chart on the screen.

A And the invoices, is it pre-printed forms you use?

H Would pre-printed forms be useful?

A Well, if you have a coloured logo, it's better to have the forms pre-printed.

H Yes, I'd like that. And of course I want the invoice to have details of all expenditure so if the guest has a drink at the bar, extra meals at the restaurant, anything of that nature, it's all detailed. I'd also like the system to generate lists of previous guests so I can send them news of special offers.

A Has the system to print out addressed envelopes?

H If it could, that would be very useful.

A Now, who's going to be inputting the information?

H Right, the main users would be the reception staff. They would be dealing with bookings, largely by phone but some by fax or letter. The accountant, of course, would be using the system to create bills. And, erm, bar and restaurant staff would have to enter sales.

A Are the staff experienced in using computers or would they need a lot of training?

H Reception staff are quite experienced, however, our accountant would need some training as she's used to a paper system.

A What about the bar and restaurant staff?

H Well, I suppose they would be entering only very restricted information on sales.

A Hm. What computer hardware do you have at the moment?

H Er, we've got one PC at reception and one in the office. What would I need?

A One for the accountant, one in the bar and restaurant. And they would have to be networked.

H If they're networked together, that doesn't mean that people can get into the accounts, does it?

A No, it would be password-protected. And the printers?

H I don't want anything too noisy.

A Laser printers tend to be quieter. Now, it would be useful to talk to the receptionist to get details of the input for the guest records and to the accountant to find out what she needs.

H Great, I'll set up meetings for you. What's the next step?

A I'll come back to you with a plan and we'll check through to make sure it has all the features you want. Then we'll create a program and try it out. We'll have to keep adapting it depending how well it works. And once you're happy with it, we'll put it into service and I'll fix some training for the staff.

H Thanks very much.

UNIT 24

The Future of IT

Speaker A To recreate human intelligence we need speed, we need memory capacity to match the human brain and we need the right hardware. We'll have all this by 2020 but these things aren't enough. We also need to capture the complexity, range and richness of human intelligence. That's more difficult... but we will do it. And we'll do it by reverse engineering of the human brain. What I mean is that we'll explore the human brain from the inside and find out how it works, how it's connected, how it's wired up. We're already well on the way to this. With brain scanning we can see inside the brain. But by 2030 we'll have another instrument for exploring the brain. We'll be able to send tiny scanning robots along blood vessels to map the brain from the inside. This will give us all the data on how the brain is connected and all the features which enable it to perform as it does. When we know how the brain works, we'll be able to recreate its operation using the powerful computers which will've been developed even before this date.

Speaker B The most important difference at the moment between computers and brains is that computers work in serial and brains work in parallel. This means that we can do incredible amounts of processing compared to what a computer can achieve running for weeks, or even months. What's interesting is not so much that the brain is fast, it's the fact that it operates in parallel. If you look at the way a signal flows down neurons, they don't move extraordinarily quickly. But there are billions of them doing it all at once, whereas in a computer everything has to be done one thing after another.

Many people say we will never have an intelligent computer. They say it's not possible to have a computer that thinks. My own view is that it is possible but not with computers as they are today. If we start having parallel computers, only then I feel will we even start to approach the kind of computing power necessary to begin to make a start to reproducing some of the higher functions of the human brain. But we'll never be able to program in human emotions, moral responsibility and the uniqueness of the individual.

Speaker C What people really don't realise is the accelerating speed of change. They think that a hundred years from now we'll have made a hundred years of progress at today's rate. But we'll see a hundred years of progress at today's rate in twenty-five years because the speed of technical progress is accelerating. Right now we're doubling the rate of technical progress every decade so the next decade will mean twenty years of progress; and the following decade will be like forty. We'll make two thousand years of progress at today's rate this century. Things are changing faster and faster.

Erm, we already have computers that run factories and computers which help to build other computers. It's only a matter of time before these artificial children of ours are able to outdo us. They will think faster than we do. They will make smarter decisions than we do. Who then will be the masters - us or the machines? If we play it right, machines will look after us. If we get it wrong, machines may replace us. And it could happen sooner than we imagine.

UNIT 25

Electronic Publishing

1 Telecommunications engineer
I need information quickly; it's a vital part of my life. Every technology book in my specialism is out of date before it gets printed so I don't buy technical books. I go straight to the research groups who publish on the Web. Electronic books make good sense to me. Publishing something like a laser printer manual is just a waste of paper. What we need is an electronic version available anywhere and updated regularly.

2 Author
What I like about it is my books are available all over the world. They're available in countries where English-language books are hard to get. It doesn't matter if you live in Beijing or Buenos Aires, people can read my books anywhere.

3 An e-publisher
It's much cheaper to publish electronically than to print. It means we can take risks. We can publish books a traditional publisher wouldn't publish because they have a smaller readership. By 2005 ten per cent of titles will be published electronically. And by 2025 electronic publishing will have caught up with traditional publishing.

4 Developer of an ebook reader
Our reader is the size of a paperback. It holds about 200 books at a time. You can download books over the Internet in a few minutes and you can read for twenty hours before recharging the battery. There's a back light so you can read in any lighting conditions. The print size can be adjusted to any size you like. Pop it in a plastic bag, and you can read it in the bath. I'm confident it will replace all the throwaway books we read when we travel, textbooks that date very quickly, technical books that are out-of-date as soon as they're printed. It's just right for schools. Children have to carry far too many books. An ebook can hold about 150,000 pages of text so you could have all of your schoolbooks for a year in a paperback-sized package.

5 Keen reader
I've tried it, it's not complicated. I paid a dollar for the first chapter of Stephen King's book and another dollar because I wanted to read the next chapter. But then I thought... there's the time on the Internet trying to get to the site, there's time taken to download it and all that time I'm paying just for being on the Internet. Then there's the printing costs because I don't like reading off a computer screen. It's not cheap. And besides I like the look and the feel of books and the fact that you can take them anywhere and who's going to steal a paperback?

And another thing. Paper lasts from 50 to 500 years. Most electronic storage media are obsolete in ten to twenty years. Magnetic tape stretches, CDs delaminate. Printed books are still the best way to preserve knowledge.