# 1 Theory review

## What have you covered?

In these six theory sessions you have:

- discovered the range of computers in common use today
- been introduced to a variety of hardware and software components in a computer system
- been shown the difference between applications and system software
- compared memory types
- been shown the components, and relative advantages, of different user interfaces
- evaluated the different ways that a computer user might communicate with a target audience
- explored some of the emerging technologies which are beginning to have an impact on our everyday life.

### Some practice questions

**1** Connect each image on the left with a line which best describes it in the middle column, then another line from the middle column to the best example in the right column.

| | | |
|---|---|---|
| Mainframe  | Small hand-held computer | Business executive needing a powerful electronic diary while travelling |
| Desktop  | Computer having very fast processing capability and supporting massive storage facilities | Student needing to be able to work as she moves around campus |
| Phablet  | Computer where all components are within a single unit, making it portable | Large organisation such as a government department |
| Laptop or notebook  | General purpose computer having separate monitor, keyboard, etc. | A family needing a computer at home for a variety of uses |

See Session 1.1

**2** For each of these, indicate with a tick whether it is hardware or software.

| | Hardware | Software |
|---|---|---|
| Operating system | | |
| Mouse | | |
| Monitor | | |
| Word processing program | | |
| CD-ROM | | |

See Session 1.2

**3** For each of these, indicate with a tick whether it is applications or system software.

| | Applications | System |
|---|---|---|
| Operating system | | |
| Database program | | |
| Printer driver | | |
| Disc formatter | | |
| Graphics software | | |

See Session 1.2

**4** The memory of a computer can be volatile or non-volatile.

**a** Describe what is meant by the terms volatile and non-volatile.

**b** Which type of memory is volatile?

**c** The instructions for starting up a computer will be held in which type of memory? Why?

See Session 1.3

# 1 Practical review

## What have you covered?

In these four practical sessions you have:

- created new documents from external data and amended this text
- explored the use of footers and headers
- practised creating and applying styles, including font face, size, bold, underline, italic, alignment
- imported images, clip art and charts, resizing and cropping them
- practised adjusting the page layout: orientation, margins, columns
- practised sending a document as an attachment
- learned how to use advanced searching techniques to locate images and textual information on the internet
- practised copying/downloading images, text, charts and tables from websites
- practised working with templates and source data for a mail merge.

### Some practice questions

You are going to edit a document, which is to be included as a review in a travel guide published by Compass Adventure Holidays.

1. Add the following contact for the Cycling Editor at the publishers, to your address book:

   **Cycling Editor** **My.Name@abc.com**

   (*where* My.Name@abc.com *is* ***your*** *email address*)

2. Using a suitable software package, load the file **IndochinaByBicycle.rtf**.
3. Save the text as a word processing document with the name: **IndochinaArticle**.
4. Set the page size to A4.
5. Set the page orientation to landscape.
6. Set the top, bottom, left and right margins to 1.5 cm.
7. In the footer of the document place:
   - an automated date, centre aligned.
8. In the header of the document place:
   - an automated page number, right aligned.

   Make sure that the header and footer are displayed on every page and that the alignments match the page orientation and margins.
9. Insert this heading at the start of the document: **Across Indochina by Bicycle**
10. Create a style **IndochinaHeading** with these settings:
    - centre aligned
    - a sans-serif font
    - bold
    - size 28 point.

    Apply this style to the heading.
11. Format the body text into two equally spaced columns, with a 1 cm gap between the columns.
12. Create a style **IndochinaText** with these settings:
    - be a sans-serif font
    - be fully justified
    - have one and a half line spacing
    - have a font size of 11 points.

    Apply this style to the text in the body of the document.
13. Identify the three subheadings and make them ***bold italic***.
14. The main image for the article is to be a picture of the Victory Gate at Angkor Thom, in Cambodia, as shown here.

    Use a search engine to find an image of this gate. If you are unable to, there is an image on the digital download.

    Download and save this image into the same folder as you have saved **IndochinaArticle**.
15. Insert this image into **IndochinaArticle** so that it is centred, spanning the two columns on the first page. Use the text wrapping options to help with this.

# 2 Theory review

## What have you covered?

In these four theory sessions, you have:

- Been introduced to a wide variety of input, direct data entry and output devices.
- Considered the advantages and disadvantages of using each of them.
- Identified and described input, direct data entry and output devices that can be found in specific situations.
- Evaluated the usefulness of a range of devices in specific situations.
- Considered the range of input and output requirements for a range of everyday systems.
- Considered and compared the processing requirements of a system, and matched input, direct data entry and output devices to these requirements.

### Some practice questions

**1** Name the devices A, B, C, D, E, F, G and H, using the words from the list.

| | | | |
|---|---|---|---|
| Speakers | Webcam | Trackerball | Pin pad |
| Laser printer | Mouse | Microphone | Joystick |
| TFT screen | Scanner | Plotter | 3D printer |
| RFID reader | | | |

A

B

C

D

E

F

G

H

See Sessions 2.1, 2.2 and 2.3

**2** For each of the devices in the table, indicate with a tick whether it is an input or an output device:

| Device | Input | Output | Direct data entry |
|---|---|---|---|
| Keyboard | | | |
| Digital camera | | | |
| Buzzer | | | |
| OMR | | | |
| Motor | | | |
| Chip and PIN reader | | | |

See Sessions 2.1, 2.2 and 2.3

**3** The director of a film that is being produced by True to Life Studios has gone abroad to choose filming locations. She needs to arrange a video conference with the studio chairperson. List the input and output devices she will need in order to hold this conference.

See Sessions 2.1 and 2.3

**4** A friend of yours has just bought a new tank in which to keep some pet tropical fish and he has all the components spread out on a large table.

He shows you a water heater and a temperature sensor. Explain how these two devices will work together to keep the water in the fish tank at the right temperature.

See Sessions 2.1 and 2.3

# 2 Practical review

## What have you covered?

In these five practical sessions, you have:

- discovered how to create a new presentation
- practised designing a suitable master slide, in keeping with the companies house style and considering the needs of the audience
- created (and inserted) slides in your presentation
- practised combining text/images/sounds/video/animation/charts/speaker notes/shapes/lines to create visually attractive functional slides within your presentation
- investigated the use of animation on objects and transitions on slide changes
- saved your work in a suitable format and location
- compared different ways of producing audience notes, such as printing one or more slides per page or with presenter notes.

### Some practice questions

You are going to create a short presentation for a vet who runs a parrot sanctuary.

1. Copy into your presentation authoring software the five blocks of text from the file **PeteParrot.rtf**.

   You should have five slides, including one with bullet points.

2. Set the master slide as follows:
   - background – dark blue
   - heading font – pale blue, serif font, 40 point, bold, centred
   - first level text font – white, serif, 28 point
   - bullet points – white, serif, 20 point
   - remove date (if automatically inserted)
   - slide numbers – white, serif, 10 point, bold, displayed in the bottom centre of the slide
   - your name should be in a separate text box in the bottom right corner – size, colour and style of your choice.

3. Insert a new slide before slide 1. Use a layout of title and subtitle for this slide. Ensure that the background, slide numbers and your name all match the master slide settings.

4. Add the Title: **Pete's Parrot Sanctuary**.

   Add the Subtitle: **Looking after abandoned parrots**.

   The title and subtitle should be in a sans-serif font, an appropriate size and red.

5. Place the picture **BlueGoldMacaw.gif** in the centre of the slide behind the titles.

   Enlarge the image so that it is not less than 75 per cent of the height of the slide and make sure the aspect ratio is maintained.

6. Move slide 6 to be 3.

7. Delete the slide that is now number 6.

8. Insert a pie chart below the text on slide 3. If you know how, you can alter the data to make the chart more relevant to the presentation (using the data in the file **GeographicalArea.rtf**). However, it is not essential as you'll learn more about this in the following unit.

9. Apply animation to the bullet points on slide 4. They are to appear one at a time on the click of the mouse.

10. Change the format of slide 5 to have text on the left and space for an image on the right.

11. Place the picture **patagonian.jpg** to the right of the text in slide 5.

    Enlarge the image so that it is about 50 per cent of the height of the slide and make sure that the aspect ratio is maintained.

12. Insert a new slide at the end of your presentation and remove all the layout boxes other than the title. Add the Title: Typical parrot habitat and insert the video Typical Habitat.mp4 and position it below the title. Set the video to launch as soon as the slide is opened.

13. Insert the sound effect Squark.mp4 to play on the first slide as the image of the BlueGoldMacaw appears.

14. Insert the animated image world.mp4 to the slide containing the chart in a suitable location and size it appropriately.

15. Choose a transition style and apply it to movement between all slides.

# 3 Theory review

## What have you covered?

In these three theory sessions, you have:

- been introduced to the most common forms of storage devices and related media
- explored the most common uses for different storage devices and their capacities
- considered the most suitable application for different capacities of storage devices
- discovered the difference between main and internal memory and storage
- reviewed the advantages and disadvantages of different storage methods in terms of speed, access, use and cost
- come to understand the importance of backing up data regularly
- been introduced to a variety of methods for carrying out backups
- explored the various electronic methods and communication systems used in banking today
- reviewed the advantages and disadvantages of different methods in terms of use and purpose.

### Some practice questions

**1** Draw lines to connect the images on the left with the best example of its use on the right.

Fixed hard disk

Pen drive

Memory card

Magnetic tape

| |
|---|
| Storage device in a digital camera |
| Business wanting to take a weekly file backup |
| A student transferring a homework file to the school network |
| The main backing storage device in a desktop computer |

See Session 3.1

**2** For each of the devices below, indicate with a tick whether it is a magnetic, optical or solid state device.

| | Magnetic | Optical | Solid state |
|---|---|---|---|
| Portable hard drive | | | |
| DVD | | | |
| RAM chip | | | |
| DVD RAM | | | |
| Tape | | | |

See Session 3.1

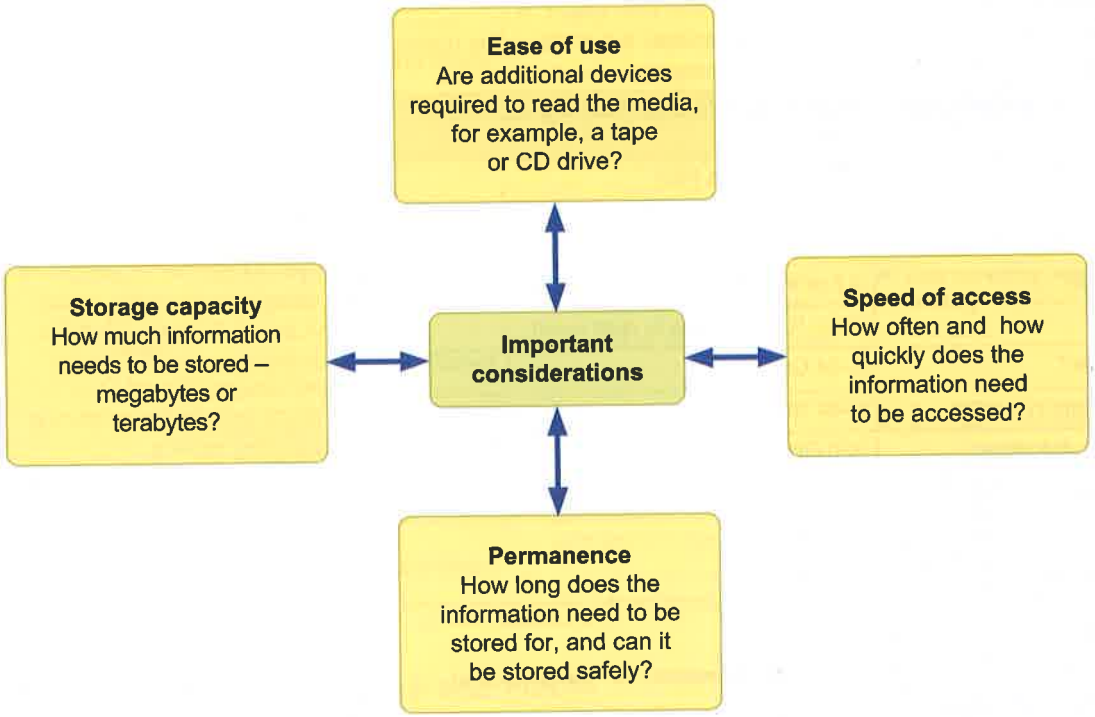
**3** Link the media type on the left with its most appropriate use on the right.

| | |
|---|---|
| Hard disk drive | Backup of files in a large commercial organisation |
| Magnetic tape | Storing images in a camera |
| Flash memory | Main storage in a desktop computer |
| Pen drive | Storage of film or music files |
| CD/DVD | Temporary storage and transfer of files between computers |

See Session 3.1

## Evaluating storage devices

It is important to choose the best device, based on the users' needs and considering the characteristics, advantages and disadvantages of each. The diagram below illustrates the main considerations when choosing a suitable storage device.




### Activity 3

Using the storage considerations diagram as a guide, discuss in small groups the following situations, and decide on the best storage options.

1. Taking a report home to work on.
2. In an architect's office, using **CAD** to create building plans and graphics software to see what new buildings might look like.
3. In a music recording studio, using computers to record and then edit multiple audio tracks, from singers to instruments and percussion.

### Review and revise

You should now be able to:

- describe the most common forms of storage devices and related media
- identify common uses for storage devices, including types of access and access speeds
- consider the different capacities available and define the difference between main/internal memory and storage
- explain the advantages and disadvantages of different methods in terms of speed, access, use and cost.

# 4 Theory review

## What have you covered?

In these seven theory sessions, you have:

- identified common network devices such as routers, modems, hubs, bridges, switches and proxy servers
- discovered how network communications, including wired, Wi-Fi and Bluetooth devices can be used in business organisations
- been introduced to LAN, WLAN and WAN and the differences between them
- considered the characteristics of common network environments
- considered how businesses use networks in their everyday operations and the different devices we can use to connect to them
- identified a variety of methods of communication used by businesses
- considered the benefits that companies can get from using a variety of communication techniques
- been introduced to the terms internet, intranet, web browser and ISP, web address and URL
- discovered the difference between the internet and an intranet
- considered how and why organisations make use of the internet and intranets
- considered the importance of keeping data secure and the methods that businesses employ to ensure its security and confidentiality.

### Some practice questions

**1** Connect a term on the left with the most appropriate example on the right:

| | |
|---|---|
| LAN | A network across a university campus |
| WAN | A network used to connect offices of a car hire company across the country |
| WLAN | A network operating within company headquarters |

See Session 4.2

**2** Use the terms in the list to complete the paragraph below, which describes a school network.

client-server | network card | bridge | file server | WLAN | network cable | router

To connect a computer to a (___), your computer needs a (_____ ____) so that you can plug in the (_____ ____). Your school computers will be connected through a (_____) to a (_____ ____). This kind of network is known as a (_____ ____) network. It is possible that although the student and administration networks might be separate, a (_____) will allow data to be passed between the two.

See Session 4.1

**3** State whether each of these statements is true or false.

| | True | False |
|---|---|---|
| **a** The internet can only connect computers within a small geographical area. | | |
| **b** An intranet will only be accessed by users within a single network. | | |
| **c** A WLAN requires users to be connected with a fibre optic cable. | | |
| **d** An email address is needed before a user can access information on the internet. | | |
| **e** A WAN could be considered as a network of networks. | | |
| **f** Modems can only connect to the internet via fibre optic cable | | |

See Session 4.2

# 4 Practical review

## What have you covered?

In these four practical sessions, you have:

- seen how a webpage is structured in HTML
- practised the use and effect of a wide variety of <tags>
- investigated the creation and use of cascading style sheets
- created style sheets and seen how to attach them to a webpage or webpages
- investigated the creation of tables as a way to help organise webpage content
- added tables to a web page and formatted them
- practised adding content (text, images and multimedia content) to your webpage and applying styles
- discovered how to create internal and external hyperlinks

### Some practice questions

You are going to create a website for Colin, who owns a shop that sells and buys coins and banknotes.

1. Create a new folder called COLINCB in your personal folder.
2. Copy the relevant source files from the digital download into your folder.
3. Edit the style sheet **CCBShop.css**.
   - Change the background colour so that it has no blue element.
   - Change the font size of <h1> to be 24px.
   - Save the style sheet with the name **CCBShopB.css** in your COLINCB folder.
4. Using a suitable text editor, create a new webpage called **CCBShop.html**.

   Create a structure that will look like this, using a table:

<table>
<tr><td colspan="3">A</td></tr>
<tr><td rowspan="4">B</td><td colspan="2">C</td></tr>
<tr><td>D</td><td>E</td></tr>
<tr><td>F</td><td>G</td></tr>
<tr><td>H</td><td>I</td></tr>
<tr><td colspan="3">J</td></tr>
</table>

5. Attach the style sheet **CCBShopB.css** to this webpage.
6. Set the table width to 95% of the width of the window.
7. Set cell spacing and cell padding for the table to 4 pixels.
8. Using the contents of the file **CCBText.txt**:
   - place the text: Welcome to Colin's Coin & Banknote Shop into cell A as style <h1>
   - place the text: Visit these recommended ... Banknote Dealers into cell B and format this as:
     - Visit these recommended sites – as style <h2>
     - The International Banknote Society (IBNS) – as style <h2>
     - Professional Coin Grading Service – as style <h2>
     - Numismatists Directory – as style <h2>
     - Rare Coin Dealers – as style <h2>
     - Banknote Dealers – as style <h2>
   - place the text: Colin's Coin Shop is one of the north of England's ... area of the dealership into cell C as style <p>
   - place the text: Treasury Notes ... 1949–1962 into cell H with each of the five lines as style <li>
   - place the text: Hammered coins ... 1658–date into cell I with each of the lines as style <li>.
9. In cell D, enter the text Banknotes as style <h2>.
10. In cell E, enter the text Coins as style <h2>.

# 5 Theory review

## What have you covered?

In these seven theory sessions you have looked at:

- the way in which the introduction of ICT impacts on employment
- how the use of new ICT technologies is changing employment patterns
- health issues connected with the use of computers
- the moral and ethical issues related to ICT
- the issue of software copyright and considered the need for copyright protection
- the use of modelling applications to mimic real systems and help with planning
- how new technology is being used in the home.

### Some practice questions

1. Pooja is applying for a job as a computer programmer. The job specification mentions that this is an ideal position for someone who wishes to work flexi-time and flexi-place. This is Pooja's first job after university. She comes to see you to ask what these terms mean.

   Explain to Pooja the significance of flexible working and the advantages that the two specified working conditions could have for her.

2. Myriam and Omar work in a library. The managers of the library have been investigating the possible introduction of new self-service style checkouts for the borrowing and returning of books and other media. They are both worried that they may lose their jobs?

   Why might Myriam and Omar be worried?

   The library managers understand Myriam and Omar's fears and have tried to reassure them that their jobs are safe. In a presentation given by managers to the library staff, the phrase 'retraining' was used a lot. Omar asked whether they actually meant **'deskilling'**.

   What do these terms mean? What is the difference between them?

   See Session 5.1

3. You have been on the lookout for a cheap version of the new episodes of your favourite massive multi-player online game. One of your school friends tells you that he has bought one at the Saturday market for a really great price.

   Without even seeing the packaging you are convinced that he must have been sold a counterfeit copy (an illegal copy).

   Explain to your friend about copyright law and what he should look for on the packaging which should indicate whether the purchase really was a good buy or not.

   See Session 5.5

4. Why would you create a financial model using a spreadsheet?

   What are the advantages of building a model compared to carefully recording details as they happen?

   See Session 5.6

5. For each health problem in the left-hand column, suggest a method of prevention.

| Problem | Method of prevention |
|---|---|
| You have backache. | |
| Your eyes are tired. | |
| You have pain in your wrists. | |

   See Session 5.3

6. A clothing company plans to use robots in their warehouses to collect products. Each robot will locate the shelf where the product is, pick one up and then find its way back to a human operator, who will pack the product to be sent to the purchaser.

   **a** Describe the advantages and disadvantages of this method for the company.

   **b** Describe two ways in which work for employees will change.

   See Session 5.1

# 5 Practical review

## What have you covered?

In these five practical sessions for using spreadsheets you have:

- revised the skills introduced in Unit 3
- created a layout for a spreadsheet model
- entered text, numerical data, formulae and functions into the model
- created simple and nested functions and formulae, including using data values from within another sheet in the workbook
- named cells and referenced them in functions and formulae
- edited by copying, pasting and formatting (for currency and percentage)
- imported data from another data source into a spreadsheet
- replicated formulae, functions and formatting in a workbook
- used hide and unhide for columns and rows
- printed a spreadsheet showing formulae or values, adjusted page settings and print areas
- created, labelled and extracted segments from a pie chart
- tested the data model
- sorted data in the spreadsheet with single and multiple criteria
- searched data with single and multiple criteria, and wildcards.

### Some practice questions

You are going to create a spreadsheet for a travel company who are monitoring the flights from Leeds Bradford International Airport. The spreadsheet contains details of the first flight each day to various UK and Irish airports. The relevant files can be found in the digital download.

1. Using a suitable software package, load the file **AirportCodes.csv**.
2. Create a range called **UKCodes**, which contains only cells A2 to B14.
3. Using a suitable software package, load the file **LBIADesinations.csv**.
4. In cell A2, use a LOOKUP function to show the names of the 13 UK and Irish airports served by LBIA. Use the Code column for the LOOKUP value and the named range **UKCodes** in file **AirportCodes.csv** for the array.
5. Replicate the function in cell A2 into cells A3 to A14 so that the airport name is shown for each of the codes.
6. In cell D2, use a function to count the number of flights that depart from this airport on a weekday where the value under the Depart Code column (cells B20 to B80) matches the content of cell B2. The function must include both absolute and relative referencing and must not use a named range.
7. In cell E2, use a function to count the number of flights that depart from this airport on a weekend where the value under the Depart Code column (cells B81 to B95) matches the content of cell B2. The function must include both absolute and relative referencing and must not use a named range.
8. Replicate the functions created in steps 6 and 7 into cells D14 to E14 to calculate the flight departures for each of the other 12 airports.
9. In cell F2 use a formula to return one of these three outcomes:
   - If the sum of D2 and E2 equals 7, display the message **Daily**.
   - If E2 equals 0, display **No weekend**, otherwise display **Selected days**.
10. Replicate the formula in cell F2 into cells F3 to F14.
11. In cell L2 create a formula that uses the number of seats in the aircraft and its number of flights to display the total seats available with those flights.

# 6 Theory review

## What have you covered?

In these four theory sessions, you have:

- discovered how a collection of data can be structured and the associated terminology
- practised creating record structures, including identifying key fields – primary and foreign
- considered the differences between flat file and relational databases
- investigated what data types are available in your database software and selected appropriate types for fields
- compared the processes of sorting and searching data sets
- been introduced to operations, logical conditions and wildcards.

### Some practice questions

**1** Put these terms in order of size, with the smallest first:

file field record

See Session 6.1

**2** Link each term with a description. One has been done for you.

| | |
|---|---|
| Foreign key | A data item, which uniquely identifies a record in a table |
| Relationship | A link between two tables |
| Key field | A data type, indicating a whole number |
| Flat file database | A data item, which points to another record in a related table |
| Integer | A single collection of data |

See Session 6.2

**3** A database is created about the mobile phones of a group of students. Complete each sentence with one term from the list:

key field integer text OLE
Boolean currency date/time.

The name of the phone will be assigned a data type of _____.

The phone Number could be used as a _____.

The price would be given a data type of _____.

Payment is either by 'Contract' or 'Pay-as-you-go'. This could be a _____ data type.

A photo of the mobile phone's owner is assigned a data type of _____.

See Session 6.3

**4** A doctor has a file that stores details of the appointments for her patients.

**a** Give one reason why she might want to sort the file.

**b** Give one reason for searching this file.

See Session 6.4

**5** **a** A bookshop has a relational database. One table in the database is **Books**. What likely item of data in the record's structure could be used as the key field?

Another table is **Customers**, which holds information for the bookshop membership scheme. A key field was created and a MemberID given to each customer.

The bookshop owner is going to create a relationship between these two tables.

**b** Suggest two reasons why the bookshop owner might want to link these tables.

**c** What kind of relationship will this be?

**d** Using the terms primary key and foreign key, describe how relationships for these two tables would be created.

See Sessions 6.1 and 6.2

# 6 Practical review

## What have you covered?

In these eight practical sessions you have:

- discovered how to create a record structure, assigning data types to fields
- imported data from a separate data source
- applied validation routines to fields
- created relationships between tables in a relational database
- created data entry forms for entering new record details
- explored the layout of a report and come to understand how to use the various parts of it
- investigated the use of run-time calculations, placing them in different parts of the report
- compared the application of filters and queries
- built queries using logical AND, OR, NOT conditions and incorporating wildcards
- discovered how to create labels and then apply this technique to other scenarios
- seen how data from searches can be exported so that it can be used in other application software.

Using your database software, open a new database - **BanknoteCollection** - and import the file **Banknotes.csv** that is on the digital download into a new table: **Banknotes**.

### Some practice questions

1. Check the field names and set the field data types to:

| | | |
|---|---|---|
| **PickNo** | Text | Standard catalogue number – primary key |
| **Date** | Date (short: dd/mm/yyyy) | Date of issue |
| **Cashier** | Text | Bank of England Chief Cashier |
| **Denomination** | Text | Face value of banknote |
| **Colour** | Text | Main banknote colour |
| **Replacement** | Boolean (Yes/No) | Replacement and not a new issue |
| **Condition** | Text | Grade |
| **Value** | Currency | 2 dp – Collector's value |
| **Printed** | Integer | Quantity issued (in millions) |

2. Create a data entry form: **NewNotes** to enter new records to the table **Banknotes**
3. Using the form **NewNotes**, insert the following two records:

| | | |
|---|---|---|
| **PickNo** | B285 | B292 |
| **Date** | 17/03/1960 | 27/04/1963 |
| **Cashier** | O'Brien | Hollom |
| **Denomination** | 1 Pound | 1 Pound |
| **Colour** | Green | Green |
| **Replacement** | Y | N |
| **Condition** | UNC | UNC |
| **Value** | 32 | 10 |
| **Printed** | 68 | 388 |

4. Create a new record structure **ChiefCashiers** with the following field names and data types:

| | | |
|---|---|---|
| **FamilyName** | Short text | Primary key |
| **FirstName** | Short text | |
| **BankStart** | Integer | Date started work at Bank of England |
| **CashierStart** | Integer | Date became Chief Cashier |
| **CashierEnd** | Integer | Date left Chief Cashier position |

5. Using the file **ChiefCashiers.csv** on the digital download, import the data into this new table.

# 7 Theory review

## What have you covered?

In these four theory sessions you have:

- discovered the stages of the systems development life cycle
- identified and explored the stages of systems development
- outlined the fact-finding process and described advantages and disadvantages of each method
- understood the purpose of validation and verification
- identified why evaluation is important in helping to secure an effective system
- explored the different models of implementations, identifying suitable situations for each model of implementation
- described the structure and purpose of technical and user documentation.

### Some practice questions

**1** The systems life cycle can be described as having these stages:

Analysis | Evaluation | Implementation | Documentation | Design

Put these in the order in which they would be carried out by the systems analyst.

See Session 7.1

**2** Four methods of fact finding are listed in the column on the left. Draw a line to connect each method with its correct description on the right.

| | |
|---|---|
| Interview | Collecting a significant amount of data from a large number of people |
| Questionnaire | Using reports written by previous investigating teams, looking at training/instruction manuals |
| Observation | Having one-to-one discussions or using a focus group |
| Existing documentation | Watching people using the existing system to find out how it works in practice |

See Session 7.1

**3** A systems analyst is designing a system to help the manager of the school kitchen. One of the important inputs to the system comes from the teachers who take morning registration each day. The kitchen manager needs to know how many students will be having a cooked meal and how many have a packed lunch. For those having a cooked meal it is important to know how many need the vegetarian option. The kitchen manager also needs to know the names of the teachers and whether they will be having a cooked lunch. The teachers will submit this information by filling in an on-screen form on the school intranet.

Design a suitable input form that the teacher can fill in.

See Session 7.2

**4** State *one* item of technical and *one* item of user documentation.

See Session 7.5

**5** Verification and validation are two processes applied to data that the system needs to use.

**a** Give a one sentence description of each of these processes.

**b** Give one difference between these processes.

See Session 7.2

# 7 Practical review

## What have you covered?

In the three practical sessions for document production you have:

- practised skills introduced in Units 1 and 3
- developed resources to research a situation
- collected information about a current system
- placed and manipulated different forms of information.

In the two practical sessions, using spreadsheets, you have:

- practised skills introduced in Units 3 and 6
- devised appropriate testing strategies
- added validation checks to a cell
- changed the display and format of cells within a spreadsheet
- imported, placed and manipulated images and different forms of information from an external source
- applied some evaluation strategies.

### Some practice questions

You work for a company that delivers products ordered via the internet. In the coming year, the company must face a potential problem. Will its delivery vans be able to deliver all the orders it receives or will the director need to buy another van? The outline of the company's problem and details of the orders it is dealing with can be found in **HarrietParcel.rtf**, which is on the digital download, along with **HarrietParcel.csv**, which covers the beginnings of the delivery model.

1. Using a suitable software package, load the file **HarrietParcel.csv**.
2. Adjust the column widths so that all the data labels are visible.
3. Place the current delivery figures for Monday to Friday found in **HarrietParcel.rtf** in cells B3 to F3. Copy these figures into the second week, cells G3 to K3.
4. In cell B12, create a formula that multiplies the contents of cells B10 and B11.
5. In cell B4, you are going to work out how many deliveries have been made on Monday. Use a function that will display the deliveries according to this criteria:
   - If the sum of cells B2 and B3 is greater than the content of cell B12, display the content of cell B12.
   - If the sum of B2 and B3 is not greater than the content of B12, display the sum of cells B2 and B3.

   Use relative cell referencing and absolute cell referencing.
6. In cell B5, create a formula that calculates the contents of cells B2 plus B3 less B4.
7. In cell B8, you are going to use a function to work out what per cent of next-day deliveries was achieved.

   If the content of B5 is greater than 0, then display the sum of cells B3 less B5 as a percentage of B3, otherwise display 100.
8. In cell B7 you are going to use a function to work out what percentage of deliveries has been made by the second day. If the content of B4 is greater than or equal to the content of cell B2 then display 100, otherwise display cell B4 as a percentage of B2.
9. Replicate the formulae/functions you have created in steps 5 to 8 across to column K so that you have figures showing the number and per cent of deliveries made for the full two-week period.
10. In cell C2, place a relative reference to Monday's deliveries that were not done and replicate this reference across to cell K2.
11. Copy the entire contents of cells A1 to K12 and paste them into cells A15 to K26.
12. Place the value 170 in cell B16.

# 8 Theory review

## What have you covered?

In these three theory sessions you have:

- identified potential physical safety risks to those using computer equipment and strategies to prevent them
- considered the risks to potentially sharing personal information online
- evaluated your internet browsing habits and considered strategies to minimise the potential risks when browsing and using email
- considered your use of social networking, online shopping and gaming to identify the potential dangers
- discovered how secure websites are authorised to keep data secure on their own networks
- investigated the term hacking and the risks associated with it
- considered how computer viruses are transmitted and the damage they cause
- summarised continuing developments in computer security methods.

### Some practice questions

**1** Match the physical accident on the left to the potential cause on the right:

| | |
|---|---|
| Tripping over | Handling overheating equipment, poorly ventilated |
| Electrocution | A piece of hardware has been placed in an unstable position, a LCD monitor at the edge of a desk for example |
| Impact related injury to the body | Computer cables hanging from a desk or trailing across a walkway |
| A burn to the hand | Handling exposed or bare power cables |

See Session 8.1

**2** Give five pieces of health and safety advice that might be offered in an office that uses computer equipment.

See Session 8.1

**3** Which of the following pieces of personal information would it be OK to share when using a social network:

| | OK to share | Not OK to share |
|---|---|---|
| First name | | |
| Home address | | |
| School details | | |
| Favourite colour | | |
| Surname | | |
| Mobile phone number | | |
| Favourite movie | | |
| Parents' place of work | | |

See Session 8.2

**4** What are the main differences between a family friend you see regularly and an online friend from a social network or online game?

See Session 8.2

**5** Complete each statement below using one of these words: Spamming, a virus, hacking, pharming, phishing.

a. You receive an email that appears to have come from your bank. The email states that your information needs to be updated or validated. You recognise that this is an attempt at _____.

b. _____ occurs when your email inbox is flooded by unrequested advertising for all sorts of products and services.

c. A colleague warns you against opening an attachment that has been sent to most people in the company where you work. He tells you that the attachment carries _____ that damages and even deletes files.

d. You realise that you have been a victim of _____ because some files on your computer have been deleted and some emails that you know you have not seen, appear to have been opened and read.

See Session 8.2

# 8 Practical review

## What have you covered?

In the previous theory session you have:

- discovered the nature of a hypothesis and how to deconstruct it
- considered the need to research, compare and contrast multiple sources of information in order to create a balanced response to a question or hypothesis
- written an essay style, well-constructed response to a particular question in a report format
- used a range of formatting and paragraph tools to improve the look of a document to a professional standard
- used software tools and proofreading to make sure a document is fit for its intended audience.

### Some practice questions

1. Define the term hypothesis.
2. Write a hypothesis that could be stated for each of the eight units in this textbook.
3. Create a mind map of the statement below; breaking the question down into as many parts as possible.

   Studying a university course, you have been asked to write a response to the following statement:

   **'Tablet computers, smartphones and smart watches will replace all home computers in ten years' time'**
4. Identify where in your breakdown additional information would be useful and carry out internet research.
5. Write a draft response, print and proofread.
6. Create a professional looking report that presents the original statement and your response to it.

## Progress check

### Aiming for good progress

- You can describe a hypothesis.
- Given a topic, you can plan a written piece of work using a mind map.
- You are able to research a range of topics using suitable keywords.
- You know how to check a document using software tools and proofreading.
- You can create a professional looking written document.

### Aiming for excellent progress

- You understand the term hypothesis and how it should be responded to.
- Given a topic, you can plan a detailed response that considers all points that may be considered using a mind map.
- You are able to research a range of topics using advanced search tools and specific keywords.
- You know how to thoroughly check a document using software tools and proofreading.
- You can create a professional looking written document that considers the prospective audience.