

Computing Studies

Information and the Internet

[INTERMEDIATE 1]

Derek Park



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Tutor guide

This teaching and learning material is designed to cover all the content needed by a learner to pass the optional 'Information and the Internet' unit of Intermediate 1 Computing Studies. However, it is the responsibility of the tutor to check the content coverage against the current SQA unit specification. This can be obtained from the SQA website (www.sqa.org.uk).

The pack covers the knowledge and understanding required for Outcome 1 assessment, and the practical skills required for Outcome 2. There are many opportunities throughout the unit for students to demonstrate the practical skills required, and generate the required evidence.

For unit assessment, use should be made of the NAB assessment materials provided by SQA (multiple-choice test and practical skills checklist). These can be downloaded from the secure area of the SQA website, using the password issued to your centre.

Note that learners completing this unit as part of the Intermediate 1 Computing Studies course should be given opportunities to develop the higher order problem-solving skills required for the external course assessments (examination and practical coursework task). This can be done by providing past exam paper questions, and further practical tasks, such as the specimen coursework task provided by SQA.

The pack has not been designed for a student to use unsupported, although it might be possible to use it in this way. Students will need significant tutor support, particularly while attempting the practical sections of the unit. This support would include giving help with the practical details of the database package, browser and web authoring software used, providing extra practical tasks where a student needs reinforcement activities, and emphasising key teaching and learning points as they occur.

The practical tasks have been written in a generic way, so that they can be accomplished using any one of the many software packages available. The SQA unit specification does not require any particular software package should be used.

Answers to questions are provided at the end of the pack.

An electronic version of this material can be downloaded from the NQ Online website at www.ltscotland.org.uk/nq. A similar teaching and learning pack is available to cover the other optional unit, Computers and the Internet.

Student guide

This teaching and learning material is designed to cover all the skills, knowledge and understanding that you need to pass the Information and the Internet unit of Intermediate 1 Computing Studies.

To achieve this unit, you must develop and demonstrate knowledge and understanding of

- **Database terms (section 1)**
- **Information systems (section 2)**
- **The Internet (section 3)**
- **Information sources (section 4)**
- **The Software development process (section 5)**

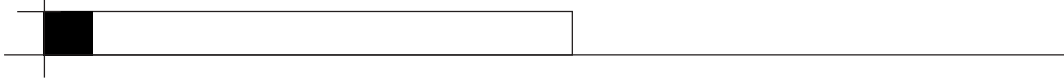
At the end of the unit, you will be tested on this by sitting a short multiple-choice test of 20 questions.

However, it is not only about passing a test. You must also develop practical skills in

- **Creating, searching and sorting a simple database**
- **Accessing information from the Internet**
- **Accessing information from CD-ROM base software**
- **Web page authoring**

Your teacher or lecturer will complete a practical skills checklist for you as you work through the practical tasks in these notes. You should keep a folio of evidence (paper copies of the tasks you have completed).

You should ask your teacher or lecturer to check your work whenever you complete a computer-based practical task, a non computer-based activity or a set of questions.



SECTION 1**What is a database?**

A database is a collection of data about a subject that has been organised into some order so that the output becomes information. The data can be stored either on paper in a **manual** database or **electronically** on a computer system.

An example of a manual database is a telephone directory. The data is organised alphabetically by: Surname, First Name, Initials, Address, Town and Telephone Number, e.g.

Jones	Mary	C.	2 Tweed Street	Bo'ness	01506 8256478
Smith	Andrew	T.	48a Rose Drive	Linlithgow	01506 956423
Smith	Thomas	C.	16 Main Street	Grangemouth	01324 895213

Sorting the data alphabetically by Surname makes it easy to find the telephone number if you know the name of the person and where they live. But it would be a long, boring job to find a name if you only knew the telephone number: you would have to go through the whole directory until you found the correct number.

If we took the same telephone directory and entered the data into a computer's database we could find the information a lot faster than looking up a printed telephone directory.

This is because the database puts the headings into **fields** which can only hold one piece of data.

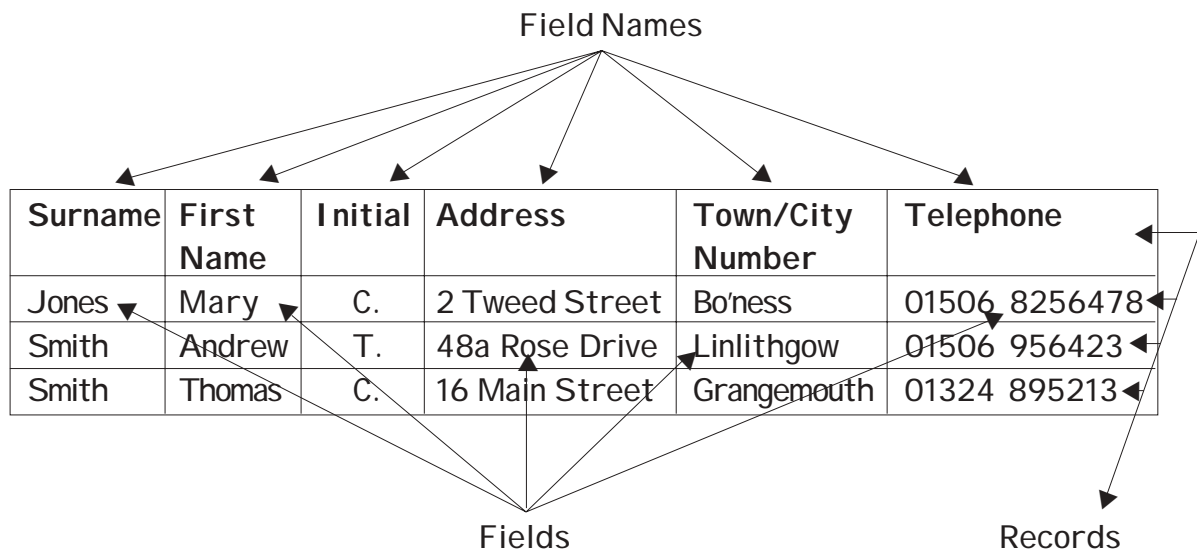
Our telephone directory would have six fields:

Surname, First Name, Initials, Address, Town and Telephone Number

The data held on one person or item, e.g. Mary Jones, is known as a **record**. Each record has exactly the same field headings.

When we have entered all of the data into the database, the records are saved into a **file**. The file for our telephone directory would be given the name 'phone book' or 'telephone directory'.

Our telephone directory database would look like this:



The advantages of using a computerised database are:

- Computers can store lots of data in a very small space.
- Computerised databases allow you to search for data very quickly and you can sort the database according to any field you choose.

A computerised database is easy to set up but a few key points should be remembered when planning it:

- Make sure you split the fields correctly to allow searching and sorting of the database, e.g. Surname and First Name, not just Name.
- Give field headings a meaningful name, e.g. Surname not Field 1.
- Give the database file a meaningful name, e.g. Phone Book not File 1.

Key points to remember

- A **file** is a collection of records about one subject, e.g. telephone numbers, cars or books.
- A **record** is a list of facts about a particular object or thing within the file, e.g. Mary Jones, Ford Focus or Enid Blyton.
- A **field name** is the heading used on a record, e.g. Surname, Make or Title.
- A **field** is where information is stored, e.g. Jones, Ford or Famous Five.



Test yourself

A database has been set up to store data on cars for sale at your local garage. Below is the data on each car:

	Model	Engine	Reg Nos		
Ford	Focus	1300 cc	SG21 TEF	Black	£ 7000
Audi	A4	1600 cc	ST12 GHI	Red	£12000
Peugeot	306	1100 cc	SK52 ABC	Blue	£8000
Citroen	Saxo	1000 cc	X234 TRE	Green	£3000

1. Complete the field headings.
2. What is a field?
3. How many fields are in the database?
4. What is a record?
5. How many records are in the database?
6. What would be a suitable name to give to the database file?
7. Give 2 advantages for using a computerised database rather than a paper database.

Ask your tutor to check your answers.

Editing records

Databases usually allow you to edit data stored in existing records. This is usually done by simply re-entering the new data into the existing record field. Thus, if Mary Smith married Tom Jones you could find Mary Smith's record and change the contents of the Surname field from Smith to Jones.

Adding/deleting records

Most databases will allow you to insert new fields into an existing database or delete existing fields if they are not required. You can also change the size and type of existing fields; but remember that this may affect the data already entered into the field in the database.

REMEMBER:

If you delete a field, all the data contained in that field will be deleted as well. So make sure you will not require the data at a later date before deleting a field.

If you add a field, it could mean that you would need to update hundreds of records in your database.

It is therefore a good idea to think carefully, when designing your database, of all the fields you may need. Remember too that it is probably easier to delete a field than to add a new field to an existing database.

Field types

When creating a database, most computerised databases will ask you to set the size of each field and the type of information to be stored in that field.

The field type depends upon the type of data that the field is designed to store:

Field Type	Designed To Store	Example
Text	letters/words	Jones or Dr or Fred
Date	any valid date written in a variety of ways	3/5/99 or 3rd May 1999, etc
Time	any valid time written in a variety of ways	3:24pm, 15:24, 8:12:35, etc
Numeric	numbers	345, 45, 9999, 0, -21, etc
Graphic	pictures	School Badge, Company Logo
Calculated	calculations based on other fields	Total Cost = price + VAT

Field size

Each field can hold a certain amount of data depending on the field size.

When deciding on the size of a field, remember to allow for spaces as each space is counted as a character. It is better to set a bigger field size than you may actually need, as you may not be able to enlarge it later without creating a new database.

The field size is the number of spaces you have available to enter data into that field, e.g. 10 allows for ten characters to be entered into that field.

Sorting in a database

There are two main ways of sorting data into order – ascending (e.g. alphabetic A to Z) and descending (Z to A).

Most databases allow either a simple sort or a complex sort of data.

A **simple sort** means that you would sort all of the data in the database based on one field, e.g. Ascending (A–Z) on the Surname field.

A **complex sort** means that you would sort the data on two or more fields, e.g. Ascending (A–Z) on the Surname field then First Name field then Initial field.

Below are examples of three databases: one unsorted, one with a simple sort and one with a complex sort.

1. Unsorted database

Surname	Forename	Initial	Address	Town	Phone Number
Smith	Alan	T	2 Baxter Way	Bo'ness	01506 5623410
Smith	Brian	G	34 Albion Road	Grangemouth	01324 8974561
Brown	Zara	K	56 Mason Way	Bo'ness	01506 4978265
Green	Alison	Y	21 Orkney Drive	Falkirk	01324 4975213
Smith	Alan	K	99 The Wynd	Falkirk	01324 6987412

2. Sorted on Surname field only (simple sort)

Surname	Forename	Initial	Address	Town	Phone Number
Brown	Zara	K	56 Mason Way	Bo'ness	01506 4978265
Green	Alison	Y	21 Orkney Drive	Falkirk	01324 4975213
Smith	Alan	T	2 Baxter Way	Bo'ness	01506 5623410
Smith	Brian	G	34 Albion Road	Grangemouth	01324 8974561
Smith	Alan	K	99 The Wynd	Falkirk	01324 6987412

3. Sorted on Surname field then Forename field then Initial field (complex sort)

Surname	Forename	Initial	Address	Town	Phone Number
Brown	Zara	K	56 Mason Way	Bo'ness	01506 4978265
Green	Alison	Y	21 Orkney Drive	Falkirk	01324 4975213
Smith	Alan	K	99 The Wynd	Falkirk	01324 6987412
Smith	Alan	T	2 Baxter Way	Bo'ness	01506 5623410
Smith	Brian	G	34 Albion Road	Grangemouth	01324 8974561

Searching a database

Searching a database is also known as ‘querying’, ‘filtering’ or ‘finding’.

Searching on **one** field is known as a **simple search**, e.g.
Search the Surname field for the data Smith.

Searching on more than one field is called a **complex search**, e.g.
Search the Surname field for Smith and Forename field for A.

This would find all people who have the surname Smith and who have a forename that begins with A.

Operators

When searching a database it is necessary for you to ensure that you use the correct terms to search for the required information. Most databases use standard ‘operators’ to allow you to retrieve information.

Operator	Meaning	Example	Result
>	Greater than	Field age > 14	Find all records that have an age field more than 14
<	Less than	Field age < 14	Find all records that have an age field less than 14
=	Equals	Field age = 14	Find all records that have an age field equal to 14
<=	Less than or equal to	Field age <= 14	Find all records that have an age field less than or equal to 14
And	And	Field Surname = Smith AND Field age = 14	Find all records that have a Surname field equal to Smith and an age field equal to 14

Output of information

When data is stored you can view or print your data in a variety of ways.

- One record at a time known as form layout:

Surname	Forename	Initial	Address	Town	Phone Number
Brown	Zara	K	56 Mason Way	Bo'ness	01506 4978265

OR

Surname	Brown
Forename	Zara
Initial	K
Address	56 Mason Way
Town	Bo'ness
Phone Number	01506 4978265

- In a list like a table:

Surname	Forename	Initial	Address	Town	Phone Number
Brown	Zara	K	56 Mason Way	Bo'ness	01506 4978265
Green	Alison	Y	21 Orkney Drive	Falkirk	01324 4975213
Smith	Alan	K	99 The Wynd	Falkirk	01324 6987412
Smith	Alan	T	2 Baxter Way	Bo'ness	01506 5623410
Smith	Brian	G	34 Albion Road	Grangemouth	01324 8974561

Note that each record in table layout is displayed in a row across the table and each field is in a column down the table.



Test yourself

1. Explain why it could be dangerous to delete a field from an existing database.
2. Give a possible disadvantage to adding a new field to an existing database.
3. Name 3 field types and give examples of the data they could hold.
4. Sealock Academy is the longest name to be stored in a field called 'school name'. What size should you make the field called 'school name'?
5. Explain the difference between a simple sort and a complex sort.
6. What do the following operators mean when searching:

=
<
>
=>

Ask your tutor to check your answers.

Creating a database system

You are now going to create your own database file. It will store data for a second-hand car sales garage.

e.g. Ford Focus Engine Size is 1300 cc, Registration Number is SG21 TEF, Colour is Black and Cost is £7000.

Task 1

Before entering data into your database file you must plan, on paper, what fields you are going to need, as well as what type of data is going to be stored in each field. You should complete all of this on paper **before** you start work at the computer.

The steps you should follow are:

- Decide on how many fields you will need.
- Decide on the field names to be used.
- Decide on the type of data to be entered into each field.
- Decide on the field size.

Step 1

For your car database you will need six fields to store the following:

1. Car Make
2. Car Model
3. Engine Size
4. Registration Number
5. Car Colour
6. Price of Car

Copy down the table below, exactly as it is.

Information to be stored	Field Name	Field Type	Field Length
Stores the make of car			
Stores the model of car			
Stores the engine size			
Stores the registration number			
Stores the colour of car			
Stores the price of the car			

Step 2

Choose field names for your database. Remember these should be short but meaningful.

Complete the second column of your table. Call the first field **Make**.

Step 3

You must now decide the type of data that has to be stored in each field. Remember:

- A **text field** can store a mixture of letters and numbers.
- A **numeric field** can only store numbers.

Complete the third column of your table.

Step 4

You must now decide the maximum amount of space you will need for each field including spaces. Remember that data may be added at a later date; so try to make sure your field length will be big enough to take new data, e.g. 'Ford' only requires 4 spaces but if you entered 'Volkswagen' that would need 10 spaces.

Complete the fourth column of your table.

Get your tutor to check your table.

Task 2

Your paper plan of your car database is now complete and you are ready to set up the database on the computer.

Use the on-line help or tutorial booklet if necessary to set up your database file.

Save your work as Car Sales.

Take a **SCREEN DUMP** of the database design window. (Ask your tutor for help if you don't know how to do this.)

Task 3

Here is the information about ten cars. Enter this data into your database.

Manufacturer	Model	Engine Size	Registration	Car Colour	Sale Price
Ford	Focus	1300 cc	SG21 TEF	Black	£7000
Audi	A4	1600 cc	ST12 GHI	Red	£12000
Peugeot	306	1100 cc	SK52 ABC	Blue	£8000
Citroen	Saxo	1000 cc	X234 TRE	Green	£3000
Vauxhall	Vectra	2000 cc	T239 ZXA	Yellow	£5000
Renault	Megane	1600 cc	X123 ABC	Yellow	£6000
Ford	Fiesta	1100 cc	S278 BCV	Purple	£3000
Renault	Clio	1000 cc	T678 FDS	Green	£2500
Vauxhall	Corsa	1200 cc	SK51 QAZ	Black	£7000
Ford	Escort	1300 cc	K123 ASD	Orange	£1299

Re-save your table and obtain a printout.

Task 4

You are now going to search your database to find the answers to the following queries. For each query, write down the **answer** and the **search criteria** you used.

e.g. A **search** on the field **Make** for the data **Ford** would find that there are 3 Ford cars for sale.

1. How many yellow cars are for sale?
Write down your answer and the search criteria that you used.
2. How many cars cost over £10000?
Write down your answer and the search criteria that you used.
3. How many Vauxhall cars are for sale costing over £4000?
Write down your answer and the search criteria that you used.
4. How many cars have an engine size below 1400 cc and cost less than £8000?
Write down your answer and the search criteria that you used.

Get your tutor to check your answers.

Task 5

You are now going to do two sorts on your car database. Get a printout of your database after each sort.

1. Sort your car database Ascending by Colour.
Remember to get a printout of your results.
2. Sort your database Ascending by Make and then Price.
Remember to get a printout of your results.

Get your tutor to check your answers.

Task 6

Create a database to store data on the school club memberships.
Here is the data to be stored.

Pupil Identification Number	Surname	Initial	Date of Birth	Club Membership
124589	Smith	T	30/06/90	Chess
658974	Black	S	02/11/92	Rugby
456987	Sneddon	K	04/06/91	Football
123654	McTavish	A	08/03/90	Chess
258963	Park	C	04/01/92	Rugby
147852	MacNeill	T	06/08/89	Football
369741	Sutherland	C	07/05/92	Chess
654789	Green	B	04/09/91	Debating
298136	Williams	M	07/08/93	Debating
146987	Smith	Y	04/12/91	Rugby

Copy and complete the table on the next page to plan your database.

Information to be stored	Field Name	Field Type	Field Length
Stores pupil identification number			
Stores surname			
Stores initial			
Stores date of birth			
Stores club membership			

Create the database and save as School Club Membership.

Task 7

1. Who is in the school debating club?
Write down answer and the search criteria that you used.
2. How many pupils born in 1992 are in the rugby club?
Write down answer and the search criteria that you used.
3. Who plays chess and was born in 1990?
Write down answer and the search criteria that you used.
4. Sort the database Descending on the Club Membership field.
Get a printout of your sorted database.
5. Sort the database Ascending by Surname then Initial.
Get a printout of your database.

Get your tutor to check your answers.



SECTION 2

Introduction

Throughout our lives we must have information. This can be something as simple as knowing our date of birth or address to more detailed and complex information such as our bank account details or exam timetable. Because of our constant need for information it is said that we live in an 'information society' or an 'information age'.

It would be impossible for us to remember all the information that we need; hence our need for ways of storing this information. An '**information system**' is a term used to describe a means of storing information. An information system could be an address book, a diary or a database on a computer system.

Data and information

If facts and figures are not organised, they may not make much sense. Unorganised facts and figures are known as '**raw data**'. For example, the number 935421 could refer to:

- a phone number
- a map reference
- a pin number for a bank account
- a pupil identification number
- a code for a padlock.

To make raw data meaningful we need to organise the data and this process is known as '**data processing**'. Once we have processed the '**raw data**' we get data that makes sense; this is when it becomes known as '**Information**'.



Raw data is input into an information system, processed and then output as information.

Key points to remember

- An Information System is a means of storing information.
- Data is a term for facts and figures that may not be organised and therefore may be meaningless.
- Data processing organises raw data into information.
- Information is data that is organised and makes sense.



Test yourself

1. **What is data?**
2. **What is data processing?**
3. **What is information?**
4. **What is an Information System?**
5. **List four pieces of information that you use every day.**

Ask your tutor to check your answers.

Information systems

An information system is a means of storing data in an organised way. People can access this information. The information system helps you organise ideas and facts so that they can be recalled quickly and easily when required.

Information is stored on many different storage mediums – paper, CD-ROM, disk.

An information system has to be searched in some way – via an index in a book, or an Internet search engine.

Private information systems

These include systems created for organisations such as:

- Police
- Government bodies (such as the Inland Revenue)
- DVLC (Driver and Vehicle Licencing Centre)
- Business organisations.

Public information systems

These are systems created for public access by organisations such as:

- Libraries
- Newspapers
- Telephone companies (local and Yellow Pages)
- Train, bus, airline operators (timetables)
- Media organisations (Teletext).

The key difference between private and public systems is the fact that anyone can gain access to a public information system; whereas access to private information systems is restricted.

Manual information systems

- Newspapers
- Telephone directories (local and Yellow Pages)
- Address books
- Timetables (train, bus, airline)

A manual information system is usually stored on paper or card.

Advantages

- information systems can be carried with you.

Disadvantages

- can be slow – depends on the type of information that is required by the user
- may not be to hand.

Electronic information systems

- Newspapers
- Telephone directories (local and Yellow Pages)
- Address books
- Timetables (train, bus, airline)

An electronic information system is used on a computer system and stored on a backing storage device, i.e. computer hard disk, floppy disk, CD-ROM, CD-R/W

People need knowledge to be able to use the electronic system properly to enable them to find the information they require.

Advantage

- more efficient than a manual system

Disadvantage

- requires a computer system.

Data protection

Data Protection Act

This is an Act of Parliament that protects the rights of people with respect to information about them that may be stored on computers.

The company or person who holds the data is called the *data user*.

If the data user holds information about you they must follow certain steps:

- register with the Data Protection Registrar
- collect and use data legally
- only hold data for their own purposes
- keep the information up to date
- not keep information longer than necessary
- give individuals access to the information about themselves
- take proper security measures to protect people's privacy (passwords needed for access).

The person whose data is being held is the *data subject*.

The data subject has the following rights: he or she is:

- allowed to check if an organisation keeps information about them on computer
- allowed to see a copy of this personal data
- allowed to have the information changed if it is incorrect.



Test yourself

1. Why was the Data Protection Act introduced?
2. Explain the terms *data user* and *data subject*.
3. You have the right to see information stored about you. Are there any organisations in this country which may deny you access to information about yourself?
4. Your school or college has information about you. When you leave school or college, what must happen to this information?

Ask your tutor to check your answers.

Computer Misuse Act

This Act covers offences that are on the increase in everyday life in relation to computers: hacking and the spreading of computer viruses. The Act is designed to make hacking into a computer system illegal and subject to penalties. It makes it an offence to:

- gain unauthorised access to a computer system
- make unauthorised changes to computer materials.

The Act states that unauthorised changes to computer material include:

- interfering with a system so that it does not run properly
- making changes to the system to prevent others accessing the system
- making changes to the system's software or data.

Examples of computer misuse include:

- **Hacking.** This involves gaining access to other people's computers and then changing, deleting or just looking at their files. It may also include sending a computer virus over the Internet so that people's files are corrupted or deleted when the file is downloaded onto their computer.
- **Electronic fraud.** This could involve using the computer to transfer money from a bank account into your own account.



Test yourself

1. **What makes an offence under the Computer Misuse Act?**
2. **What is a hacker?**
3. **What is a computer virus?**
4. **Name three computer viruses.**
5. **What is software piracy?**

Ask your tutor to check your answers.

Copyright, Designs and Patents Act

This Act was introduced to try and protect companies and individuals whose work was being copied. This work might include text, graphics, video and sound files.

The Act deals with the problem of computer software, which is now protected by copyright law for 50 years after it was published.

It makes illegal any attempt to:

- **copy or steal computer software or computer manuals**
- **run software on your own computer that does not have a licence**
- **transmit computer software over the internet and use it upload or download software.**

Offences like these can lead to a prison sentence with the owner of the software/material able to sue for compensation.

The main example of an offence under the Copyright, Designs and Patent Act is software piracy, whether

- **downloading/buying computer games/music and then copying it; or**
- **selling the copies to friends or colleagues and making money.**

To do this is a breach of copyright.



Test yourself

1. **What is meant by upload and download?**
2. **You copy a page from a computer manual and give it to your friend. Is this allowed?**

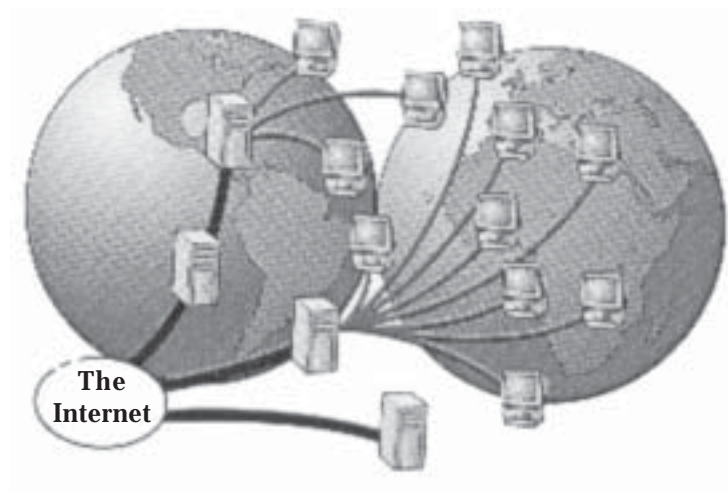
Explain your answer.

The Internet

The Internet could be described as the world's largest library: it is the biggest source of information in today's world. One of the most useful facilities offered by the Internet is the World Wide Web. A web site is a collection of information which can be displayed as a mixture of text, sound, graphics and video. People from all over the world create websites on a vast range of topics. As long as you have access to the Internet you can view these pages. The Internet is simply a world-wide network of computer networks.

What is a network?

When a number of computers are linked together to share resources, this is known as a network. Networks allow you to share hardware such as printers and scanners but they also allow you to share up-to-date information quickly to a large amount of people.



Benefits of networking computers in information systems

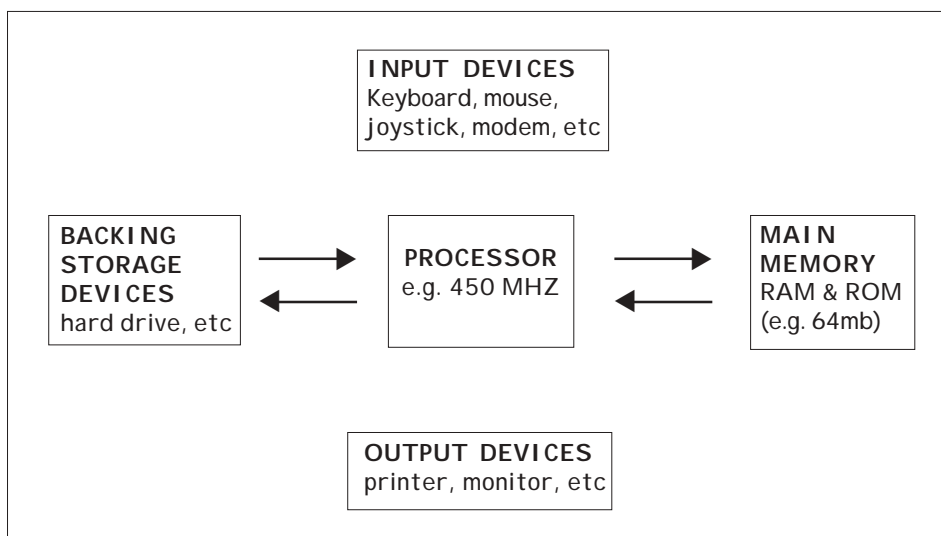
1. Information can be shared quickly and easily.
2. A wide range of information can be shared and stored.
3. Information can be kept up to date easily.
4. It is relatively easy for a lot of people to access relevant information as and when required.

SECTION 3**Hardware**

To connect to the Internet you need a computer, a telephone line and a modem.

The type of hardware that you use to connect to the internet affects the speed of access.

A computer system includes a **processor**, known as the central processing unit, and **random access memory**, known as RAM.

Processor

This is where all the searching, sorting, decision making and calculating is done within a computer.

The speed of a processor is measured in megahertz and the higher the number of megahertz the faster the computer can process the data.

Random Access Memory

RAM is part of the main memory, which is used to store data that is being currently used. Any data stored in RAM is lost when the computer is switched off. It is therefore necessary to save data at regular intervals into the other part of the main memory, which is called Read Only Memory (ROM), which stores data permanently.

RAM is usually measured in megabytes (Mb), and the higher the number of megabytes the faster the RAM can process the data.

A slow processor will only allow you to process data slowly no matter how fast your connection is to the Internet, and the same applies to the size of random access memory available.

When processing data the processor works with RAM therefore the speed at which your computer can process data depends on the size of the processor **and** the random access memory.

Modems

Modem is short for **Modulator – Demodulator**.

A modem is a device that the computer uses to communicate to other computers over standard telephone lines.

A modem converts the digital signals used by a computer into suitable tones for a telephone line and converts them back again; so you can send and receive information from other computers.

Modems transfer data at different speeds. The faster the modem the faster you will be able to transfer data.

The speed at which a modem can transfer data is measured in **kilobits per second**; this is usually shortened to **kbps**. The higher the number of kbps the quicker your modem will be able to download data.

Dial-up modems

This is the most common method of connecting to the Internet.

A Dial-up modem plugs into a phone line. You can use the same phone line for telephone and internet calls but not usually at the same time.

This is the slowest type of modem for connecting to the Internet, with the minimum requirement for new computers being 56 kbps.

It should be noted that even if you have a fast modem the quality of your connection to the internet can be affected by the transmission quality of your phone line.

There are a number of alternatives to modems available to allow connection to the internet.

ISDN – Integrated Services Digital Network

This is a high-speed digital phone line which allows data transfer up to four times faster than a dial-up modem.

Cable modems

A cable modem connects to the Internet using the same cable that is used for cable television. A cable modem will transfer data more than 200 times faster than a dial-up modem. The quality of data being transferred will be greater than that of a dial-up modem.

Satellite connections

Satellite television companies can also offer access to the Internet via the satellite. A satellite connection will transfer data about 14 times faster than a dial-up modem.

There are two types of satellite connection:

- **One-way**, which only allows you to download (receive) data from the Internet via satellite. To upload (send) you still need a dial-up modem and telephone line.
- **Two-way**, which allows you to download and upload through a satellite dish.

Cost of calls

The cost of calls connecting to the Internet changes daily and depends on your type of connection. Many companies offer promotions to entice customers to use their services. This can include free connections and free calls for a limited time; but be please aware that there are usually clauses in the small print if you take up these offers (such as signing up to the provider for a minimum period, such as one year).

Later on you will connect to the Internet and find the latest prices and conditions of different types of Internet connections.



Test yourself

1. Name two pieces of hardware that can affect the speed of your Internet access.
2. How does a modem work?
3. What unit of measurement is used to measure the speed of a processor?
4. Connect to the Internet and find out prices for three different types of Internet connection. Print out the details.

Ask your tutor to check your answers.

Internet Service Providers

Internet Service Providers are usually known as ISPs for short.

An ISP gives you telephone access and software that you need to connect to the Internet; it can also provide some technical help if required.

An ISP has computers known as servers, which are connected to other computers on the Internet. Some ISP servers are faster than others; and this affects your speed of access.

An ISP has lots of modems, which are connected to the telephone system.

An ISP will normally charge you local rates every time you connect to the Internet as well as a monthly fee. The local call rate goes to the telephone company while the ISP takes the monthly fee.

Some ISPs will charge a set-up fee.

An ISP should provide the following:

- a local point of presence (so that your calls are charged at local rate)
- fast speed of access (so that your modem can run at full speed)
- software to get you up and running – though this might already be installed on your machine and only requires the settings to be adjusted
- help and support
- space on their computers (which are permanently connected to the Internet) where you can place files or web pages, sometimes for free.

There are other factors that affect Internet access:

- **What you are doing on the Internet, e.g. the larger the amount of data you send/receive the longer it will take you.**
- **If you try to access the Internet at a busy time of day, the communication lines will take longer to transfer data.**
- **If you are trying to access a popular website you may find this will slow down your access.**

Communication software

To allow access to Internet pages you must have a suitable Internet browser which will translate data from the Internet page into a visual display on your computer screen.

A web browser is a piece of software that lets you look at websites. The main web browsers are: Netscape Navigator, Safari and Microsoft Internet Explorer.

When you sign up with your Internet Service Provider you will be offered at least one e-mail address and some web space if you wish to design your own web page.

Browsers will also usually offer you the option of installing e-mail software (Outlook Express), but again this may already be installed in your machine and you would only be required to alter the settings.

There is a variety of e-mail software available, such as: Eudora Light, Netscape Mail and Pegasus Mail. Whichever e-mail software systems you use they all work in a similar way.

Security and the Internet

The Internet can be revealing – with people being able to look at your e-mails to gain personal information, do credit card fraud, etc.

So when using the Internet you should always consider security, especially when passing on personal details.

There are three areas of Internet security that you are going to look at:

- user IDs and passwords
- filtering
- secure sites for e-commerce.

User IDs and passwords

When you sign up with an Internet Service Provider you are given an **Account Name** which can also be called your **User Identification** or **Log-in Name**. Your account name is unique to you, i.e. no one else will have the same account name as you.

You will also be asked to choose a password. Your password should be secret and only you should know it – **never under any circumstances tell someone your password**. Apart from when you set up your account and create your password, **no one** will ask for your password unless they are wanting to gain access to your personal information.

Your password should be a combination of letters and numbers but not something easily guessed by anyone else – i.e. do not use your name or age.

Remember your password is secret: it stops anyone else accessing your account.

Filtering

Filtering systems on computers block access to unsuitable material. When a filtering system is switched on users cannot open or link to sites that the system recognises as unsuitable.

How do filters work?

There are many filtering programs available and they all work in the same manner, either by:

- blocking specific sites, e.g. racist sites, over 18-sites, etc.
- blocking sites that contain unsuitable words or phrases, e.g. swear words, racist phrases, etc.

However, it should be noted that no filter system is fool-proof and many need constant updating as new sites come on-line.

Secure sites for e-commerce

E-commerce is electronic business or business done electronically, usually over the Internet. E-commerce usually means selling goods over the Internet, using web pages.

When you buy or sell goods over the Internet it will be necessary to pass on personal details such as address, telephone numbers, credit/debit card numbers, etc. Therefore it is essential that you can be assured that your information cannot be accessed by anyone other than the intended recipient.

There are a number of methods of taking details on-line but all take steps to stop information falling into the wrong hands.

All methods will use a form of **encryption**, which is simply a process of scrambling the information being sent. Only the intended recipient should be able to unscramble the information.

Websites that use encryption are known as **Secure Web Sites** and these sites will normally display a **padlock** or **key** logo at the bottom of the screen to show you that you are dealing with a Secure Web Site.



Test yourself

1. What does ISP stand for?
2. Name three things that an ISP should provide.
3. Name two factors that affect Internet Access.
4. What is an Internet Browser?
5. Explain what is meant by filtering.
6. How should you choose your password?
7. What is encryption?

Ask your tutor to check your answers.

SECTION 4

Throughout our lives we will spend a lot of our time searching for information, whether for a school essay or the cheapest place to buy the latest mobile phone. We no longer have to go to libraries, shops or other venues to find information as we can use our computer in our own home to find what we require; and where necessary, we can also find out where to buy a product and have it delivered to our door.

Two good sources of information are CD-ROMs and the World Wide Web. Both of these sources of information are databases that store information or links to other databases storing the information.

Information on a CD-ROM

CD-ROMs have a very high storage capacity and therefore allow a lot of information to be stored on them.

CD-ROMs allow information to be displayed as a mixture of text, pictures, sound and video clips and this combination of displaying information is known as multi-media.

Specialised CD-ROMs are about one topic, e.g. Formula 1 racing cars or cooking.

General CD-ROMs have information on a range of topics, e.g. an encyclopedia (*Encarta* is probably the best known).

CD-ROMs can have a variety of uses including:

- teachers using text and/or pictures for handouts
- musicians needing music samples
- your mum looking through a catalogue for new clothes.

Although a CD-ROM could be compared to a book, it allows you to do more, for example:

- search for information quickly
- do more complex activities
- take part in quizzes
- play games which help you learn.

Disadvantages of a CD-ROM

- capacity of CD-ROM limits the amount and complexity of information that may be stored
- information becomes out of date very quickly.

Advantages of a CD-ROM

- sometimes cheaper to produce than books or catalogues
- contains interactive features
- takes up less space than a book or catalogue
- easy to carry around.

How to look for information on a CD-ROM



Pic 1: Encarta 2001 Window

1. When you start a CD-ROM a window appears on the screen that can be thought of as a menu. It is a sort of contents page.
2. When you decide what you want to look at, you click on the **link** to that page. Clicking on a link is a bit like turning the page in a book. A **link** can be a button, word or picture.

3. **Instead of clicking on a link, some CD-ROMs allow you to key in the topic you are looking for in a search box.**
4. **When you click on the link, you will move to a different part of the CD-ROM and the page you want will be displayed.**

You may need to go through a number of links to get to the required information.

CD-ROMs usually allow you to copy and print any page of interest to you.

There are thousands of CD-ROMs available on the market on virtually any topic. The layout and approach to giving you the information varies but the basic method of accessing the information is the same on every CD-ROM.

The variety of CD-ROM topics available can be put into one of five categories:

- **shopping/advertising**
- **sport**
- **leisure**
- **education**
- **news.**



Things to do

1. **Ask your teacher for two educational CD-ROMs that will teach you a new skill or new knowledge.**

Select a page from each and print out the page.

Write down the name of the CD-ROM and give a brief explanation of the skills or knowledge it teaches you and how it does it.

2. **From the list of five categories try and find CD-ROMs from two other categories.**

Select a page from each CD-ROM and print out the page.

Write down the name of the CD-ROM, what category you think it belongs to and give a brief explanation of the skills or information it gives you.

Ask your tutor to check your answers.

Information on the World Wide Web

A website contains some form of information displayed as a collection of computer windows that are connected to the Internet.

Websites are created by individuals or organisations and are then connected to the Internet for anyone to view.

The World Wide Web is simply the collection of all the websites in the world.

Each website has its own unique address known as the **Uniform Resource Locator** or URL for short.

Advantages of the World Wide Web

- information on virtually any topic
- information is usually up to date
- information is easily accessed.

Disadvantages of the World Wide Web

- there are so many web pages that you may have difficulty finding the relevant piece of information quickly
- some information on the Internet can be wrong or misleading: there is no 'quality control'.

Using search engines

In order to search for information on the World Wide Web (which is usually known in short simply as the Web) you need to use a **search engine**. It does not cost you anything to use a search engine. Search engines sell advertising space on their websites to gain an income.

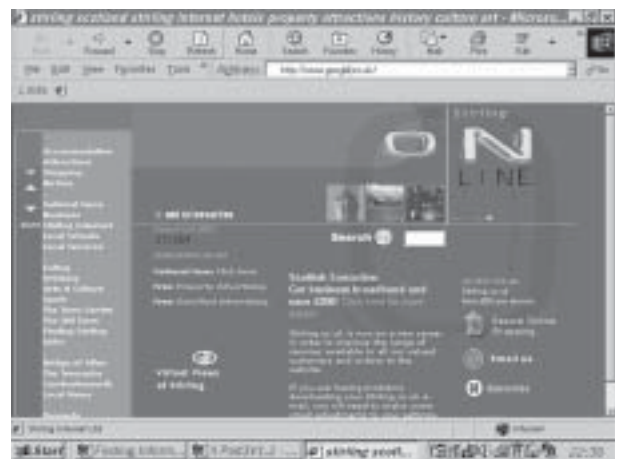
Search engines store the information from web pages in a database. To search for information on the Web you enter a description of what you are looking for and the search engine will search the database for all websites that have something on your search request.

There are lots of search engines to choose from, but probably the most popular are:

- www.uk.altavista.com
- www.lycos.co.uk
- www.yahoo.com
- www.google.co.uk
- www.ask.co.uk

How to use a search engine

- click on your web browser icon
- connect to the Internet
- type in the address of the search engine, and click go
- the search engine website will appear
- at the search box, key in the information you want to look for, e.g. Scottish football
- the window will display a list of sites for you to click on to search for your information.



Pic 2: Web browser



Pic 3: Google search engine



Pic 4: Results of search

- **Education**
www.bbc.co.uk/scotland/education
www.mystudyguide.co.uk
www.learn.co.uk
- **News**
news.bbc.co.uk
www.guardian.co.uk
www.abcnews.com



Things to do

1. **Choose three categories and one website from each category.**

Find the website and print out a page from the website.

Give a brief explanation about the content of the website and how the information is displayed.

2. **Find another website for each of the three categories and print out a page from the website.**

Give the address of the website and give a brief explanation about the content of the website and how the information is displayed.

Ask your tutor to check your answers.



Test yourself

1. Name the four ways in which information can be displayed on a CD-ROM.
2. What are two disadvantages of a CD-ROM?
3. What are two advantages of a CD-ROM?
4. What is the World Wide Web?
5. What does URL stand for and what is it?
6. Name two popular search engines.

Ask your tutor to check your answers.

SECTION 5

This section covers the software development process and the creation of a website.

Key points about websites

A website must be

- created (usually using a web-authoring package)
- published (uploaded from your computer to the Internet)
- hosted (stored on a server which is permanently connected to the Internet).

Your website is then open to view from anyone surfing the web. Most Internet Service Providers (ISPs) will give you free web space on their servers.

The point of a website is to be looked at. If it is easy to read and understand, and if it gets across the message that you want to give, then it is a good website.

Points to remember when designing a website:

- make it easy to read
- make it give a good impression
- make good use of colours
- make good use of suitable pictures
- have a good layout.

Links

Websites usually contain a number of pages and it is necessary to be able to open and view the different pages on a website. This is done by using a **link**.

A **link** allows users to select a **picture** or **highlighted text** to display another page on the web. It helps you to move around the site.

There may be a number of links on one page and they may be accessed in any order.

Homepage

The Homepage is the main page of a website and it is usually the first page people read when they visit the site.

A homepage should include:

- a summary of the website which states the purpose of the site
- a table of contents which lists the other pages on the site (and which usually links to the pages as well)
- a help section for the user.

Note: every page of the website should have a link back to the homepage, thus allowing the user to return to the start at any time.

Address

Each page on the Internet has a unique address called the **Uniform Resource Locator**, or **URL** for short.

A URL for a web page starts with http and contains the host computer name, directory name and the name of the web page.

e.g. <http://www.thetech.org/robotics/index.html>

(the host computer is www.thetech.org, the directory name is [robotics](#), and the web page is [index.html](#))

Stages of software development

The software development process for designing a website is simply a process that helps produce the finished website in six logical stages.

These stages are:

- Analysis
- Design
- Implementation

- Testing
- Documentation
- Evaluation

The six stages of website design are examined below.

Analysis

During the analysis stage of developing your website, you need to think about:

- who your website is aimed at, e.g. fellow students, people with the same interests, etc
- a clear and precise description of the planned website
- the Internet service provider that will be used
- what text, pictures, sound and video will be used
- what hardware and software you will need.

This stage is crucial to ensure that you do not waste time working on parts of the website that will not be included in the end product.

By the end of this stage you should have a clear idea of the content of your website and of all the necessary hardware and software that will be required.

What you have to create during the analysis stage is the **specification** for the website.

Design

At the design stage you take the results of the analysis and:

- write down the order in which you are going to complete your website
- draw a plan of your website on paper, showing the layout and (where possible) colours, size of text, etc.
- show where your links will be and what they link to
- gather information/material for your website.

Implementation

During the implementation stage, you go on to a computer and actually create the website. How this is done will depend on the Web Authorising Package that you use; but remember:

- follow your plan from the design stage
- test each new page as you add it to the website
- when you think you have finished, look at your pages and see if they could be improved by changing the layout, text or pictures.

Testing

Testing your website is vital if you want to create a professional looking site that can be easily accessed and viewed by the public surfing the Internet.

It is impossible to take into account different computer systems, e.g. memory available, sound card, etc, but you should try and make the testing stage as thorough as possible. This should include:

- making sure the page address is correct
- making sure your home page opens correctly
- ensuring that all links work.

It is a good idea to have a test plan which lists all the items that need to be tested and what the correct results should be.

It is also a good idea to ask someone else to review your website. They may spot errors or improvements that you have missed.

Remember: you should have already tested most of your website as you progressed through the implementation stage. This testing stage can be seen as the final check.

Documentation

The documentation is written information about the website.

There are two parts to the documentation – the **User Guide** and the **Technical Guide**. Both of these can be in book form or in the form of on-line help and on-line tutorials.

The **User Guide** is written for the non-computer expert; it should be written in simple language, avoiding technical detail. It should be designed to help the user of the website and should have a simple design that is easy to follow for those with little computer knowledge.

The User Guide should include:

- simple instructions on how to load and access the website
- step-by-step information about what the user will see when the website is displayed
- pictures of the website and how the user should interact with the website
- any important conditions, such as which button on the mouse to click when making a selection.

The **Technical Guide** is written for those with a high level of computer knowledge. It is therefore usually written for the IT coordinator or supervisor within a company or school.

The Technical Guide should contain:

- information on how to run the website and any specific hardware or software requirements
- information on help files
- a troubleshooting guide to help solve problems with the website
- a listing of the website content and what software was used to display the information.

Evaluation

This stage requires you to be honest and to review each stage of the development process and comment on each stage. You should consider the following questions:

- **Is the website user friendly?**
- **Does the website fulfil the specification (in other words, does it do what it is supposed to do)?**
- **Can the website be easily maintained/updated?**
- **Has the testing been thorough?**
- **Is this the best website design to pass on the desired information?**
- **Have you suggested possible improvements/changes to the site?**



Test yourself

1. **What is the term used for creating web pages?**
2. **What is a link?**
3. **What is a homepage?**
4. **What does a website address contain?**
5. **List the six stages of the software development process in the correct order.**
6. **What is a User Guide?**
7. **Who should a Technical Guide be written for?**

Creating a web page

Professional website designers and those who have had programming and web design experience use **HyperText Markup Language**, or **HTML** for short, to create their web pages.

HTML is a tricky language to learn, especially for the beginner to software development; but there are other options available to allow you to create a website.

There are various **Web Page Creation Packages** on the market that save you having to learn the specialised **Web Design Language** of HTML. These include:

- **Microsoft FrontPage**
- **Macromedia Dream Weaver**

These packages are very easy to use and have a variety of tools available to allow you to create a professional-looking website.

Also, many word processors now allow you to save documents in a web-compatible format, which means you could create your website in your normal word processor. The word processor will then convert your website into a format ready to be hosted on the Internet.

How you create your own website will depend on the software that is available to you.

To help you create a website you should use the **On-line Help** and **On-Line Tutorials** that come with the software you are going to use.

The Internet also has a number of websites that give free tutorials on how to create a website, using a number of different packages. Below are two sites that offer tutorials but you could surf the Internet and look for others, or use tutorials provided by your school or college.

- Tutorials.beginners.co.uk
- www.itlearningmaterials.com



Things to do

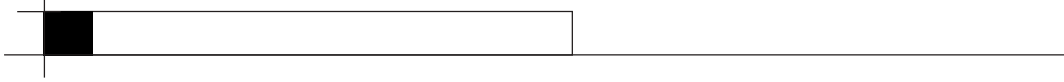
Create your own website following the stages of software development.

The website can be on a subject of your choice but you may wish to use ideas, pictures, etc, from sites you have already looked at on the Internet.

Your website should:

- **have at least three pages**
- **have links from a homepage to other pages**
- **contain text and graphics.**

When you have finished, show your teacher all paper details from the software development process stages and from your finished website.



SECTION 6**Section 1: Databases****Page 8: Test yourself**

1. **Manufacturer/Make
Colour
Sale Price**
2. **A field in a database holds one piece of data.**
3. **6**
4. **The data held on one person or item.**
5. **4**
6. **Car Sales or any other suitable answer.**
7. **Computers can store lots of data in a very small space.**

Computerised databases allow you to search for data very quickly and you can sort the database on any field you choose.

Page 15: Test yourself

1. All the data contained in that field will be deleted as well so make sure you will not require any of the data at a later date before deleting a field.
2. If you add a field it could mean that you would need to update hundreds of records in your database.

3.

Text	letters/words	Jones or Dr or Fred
Date	any valid date written in a variety of ways	3/5/99 or 3rd May 1999, etc
Time	any valid time written in a variety of ways	3:24pm, 15:24, 8:12:35, etc

4. 15 characters
5. A **simple sort** means that you would arrange all the records in the database into order based on one field, e.g. Ascending (A–Z) on the Surname field.

A **complex sort** means that you would sort the data on two or more fields, e.g. Ascending (A–Z) on the Surname field, then First Name, field then Initial field.

6. = equals
< less than
> greater than
=> equal to or greater than

Task 4: Page 19

1. 2 yellow cars – Search field Car Colour = Yellow
2. 1 car costs over £10000 – Search field Sale Price > £10000
3. 2 Vauxhall cars are for sale costing over £4000

Search field Manufacturer = Vauxhall
AND Search field Sale Price > £4000

4. 6 cars have an engine size below 1400 cc and cost less than £8000

Search field Engine Size < 1400 cc
AND Search field Sale Price < £8000

Task 5: Page 19

- 1.

Manufacturer	Model	Engine Size	Registration	Car Colour	Sale Price
Ford	Focus	1300 cc	SG21 TEF	Black	£7000
Vauxhall	Corsa	1200 cc	SK51 QAZ	Black	£7000
Peugeot	306	1100 cc	SK52 ABC	Blue	£8000
Citroen	Saxo	1000 cc	X234 TRE	Green	£3000
Renault	Clio	1000 cc	T678 FDS	Green	£2500
Ford	Escort	1300 cc	K123 ASD	Orange	£1299
Ford	Fiesta	1100 cc	S278 BCV	Purple	£3000
Audi	A4	1600 cc	ST12 GHI	Red	£12000
Vauxhall	Vectra	2000 cc	T239 ZXA	Yellow	£5000
Renault	Megane	1600 cc	X123 ABC	Yellow	£6000

2.

Manufacturer	Model	Engine Size	Registration	Car Colour	Sale Price
Audi	A4	1600 cc	ST12 GHI	Red	£12000
Citroen	Saxo	1000 cc	X234 TRE	Green	£3000
Ford	Escort	1300 cc	K123 ASD	Orange	£1299
Ford	Fiesta	1100 cc	S278 BCV	Purple	£3000
Ford	Focus	1300 cc	SG21 TEF	Black	£7000
Peugeot	306	1100 cc	SK52 ABC	Blue	£8000
Renault	Clio	1000 cc	T678 FDS	Green	£2500
Renault	Megane	1600 cc	X123 ABC	Yellow	£6000
Vauxhall	Vectra	2000 cc	T239 ZXA	Yellow	£5000
Vauxhall	Corsa	1200 cc	SK51 QAZ	Black	£7000

Task 6: Page 20

Pupil Identification Number	Surname	Initial	Date of Birth	Club Membership
124589	Smith	T	30/06/90	Chess
658974	Black	S	02/11/92	Rugby
456987	Sneddon	K	04/06/91	Football
123654	McTavish	A	08/03/90	Chess
258963	Park	C	04/01/92	Rugby
147852	MacNeill	T	06/08/89	Football
369741	Sutherland	C	07/05/92	Chess
654789	Green	B	04/09/91	Debating
298136	Williams	M	07/08/93	Debating
146987	Smith	Y	04/12/91	Rugby

Task 7: Page 21

1. Green and Williams are in the school debating club
Search field Club Membership = Debating
2. 2
Search field Date of Birth = */*/92
AND Search field Club Membership = Rugby
3. Smith and McTavish play chess and were born in 1990.
Search field Club Membership = Chess
AND Search field Date of Birth = */*/1990
- 4.

Pupil Identification Number	Surname	Initial	Date of Birth	Club Membership
658974	Black	S	02/11/92	Rugby
258963	Park	C	04/01/92	Rugby
146987	Smith	Y	04/12/91	Rugby
456987	Sneddon	K	04/06/91	Football
147852	MacNeill	T	06/08/89	Football
654789	Green	B	04/09/91	Debating
298136	Williams	M	07/08/93	Debating
124589	Smith	T	30/06/90	Chess
123654	McTavish	A	08/03/90	Chess
369741	Sutherland	C	07/05/92	Chess

5.

Pupil Identification Number	Surname	Initial	Date of Birth	Club Membership
658974	Black	S	02/11/92	Rugby
654789	Green	B	04/09/91	Debating
147852	MacNeill	T	06/08/89	Football
123654	McTavish	A	08/03/90	Chess
258963	Park	C	04/01/92	Rugby
124589	Smith	T	30/06/90	Chess
146987	Smith	Y	04/12/91	Rugby
456987	Sneddon	K	04/06/91	Football
369741	Sutherland	C	07/05/92	Chess
298136	Williams	M	07/08/93	Debating

Section 2: Information Systems

Test yourself: Page 25

1. If facts and figures are not organised in any way they may not make sense and are known as data. (Sometimes 'raw data'.)
2. To organise the data to make it meaningful.
3. Processed raw data that makes sense is known as Information.
4. An Information System is a term used to describe a means of storing information.
5. Examples might be Date of birth; Name; Address; Timetable

Test yourself: Page 29

1. This was an Act of Parliament that protected the rights of people (and private information about them) with respect to computers.
2. The company or person who holds the data is called the *data user* and the person whose data is being held is the *data subject*.
3. Security forces with any connection to national security or any other suitable answer.
4. Only information that is necessary and appropriate should be kept. Everything else should be destroyed.

Test yourself: Page 31

1. The gaining of unauthorised access to a computer system and the making of unauthorised changes to computer materials are offences under the Computer Misuse Act.
2. A hacker is a person who gains access to other people's computers then changes, deletes or just looks at their files. A hacker may also be a person sending a computer virus over the Internet so that people's files are corrupted or deleted when the file is downloaded onto their computer.
3. Any suitable answer.
4. Any suitable answer.
5. Copying software illegally, e.g. when you do not own the rights to software.

Test yourself: Page 33

1. **Upload** means to copy or send data or software from your machine.
Download means to copy or send data or software to your machine.
2. One page may be allowed but still might contravene the Copyright Designs and Patents Act.

Section 3: The Internet

Test yourself: Page 39

1. **Processor, Modem, Telephone Line, or any other suitable answer.**
2. **A modem converts the digital signals used by a computer into suitable tones for a telephone line and converts them back again, so that you can send and receive information from other computers.**
3. **The speed of a processor is measured in megahertz.**
4. **Any suitable answer.**

Test yourself: Page 44

1. **Internet Service Provider**
2. **A local point of presence
Fast speed of access
Software to get you up and running
Help and support**
3. **What you are doing on the Internet
If you try to access the Internet at a busy time of day
If you are trying to access a popular website**
4. **An internet browser will translate data from the Internet page into a visual display on your computer screen.**
5. **Filtering systems on computers block access to unsuitable or private material.**

6. **Your password should be a combination of letters and numbers but not something anyone else might guess easily.**
7. **Encryption is a process of scrambling the information being sent out, so that only the intended recipient can unscramble the information.**

Section 4: Information Sources

Test yourself: Page 54

1. Text, picture, sound and video
2. Capacity of CD-ROM limits the amount and complexity of information that may be stored.
Information becomes out of date very quickly
3. Two of the following or any other suitable answer:

Sometimes cheaper to produce than books or catalogues
Contains interactive features
Takes up less space than a book or catalogue
Easy to carry around
4. The World Wide Web is the collection of all the websites in the world.
5. Each website has its own unique address, known as the **Uniform Resource Locator**, or **URL** for short.
6. Two of:
www.uk.altavista.com
www.lycos.co.uk
www.yahoo.com
www.google.co.uk
www.ask.co.uk
or any other suitable answer.

Section 5: Software Development Process

Test yourself: Page 61

1. Publishing
2. A **link** allows users to select a picture or highlighted text to display another page on the web.
3. The **homepage** is the main page of a website and it is usually the first page people read when they visit a site.
4. Computer name, directory name and the name of the web page
5. Analysis
Design
Implementation
Testing
Documentation
Evaluation
6. The User Guide should be designed to help the user of the website. It should have a simple design that is easy to follow for those with little computer knowledge.
7. The Technical Guide is written for those who have a high level of computer knowledge.