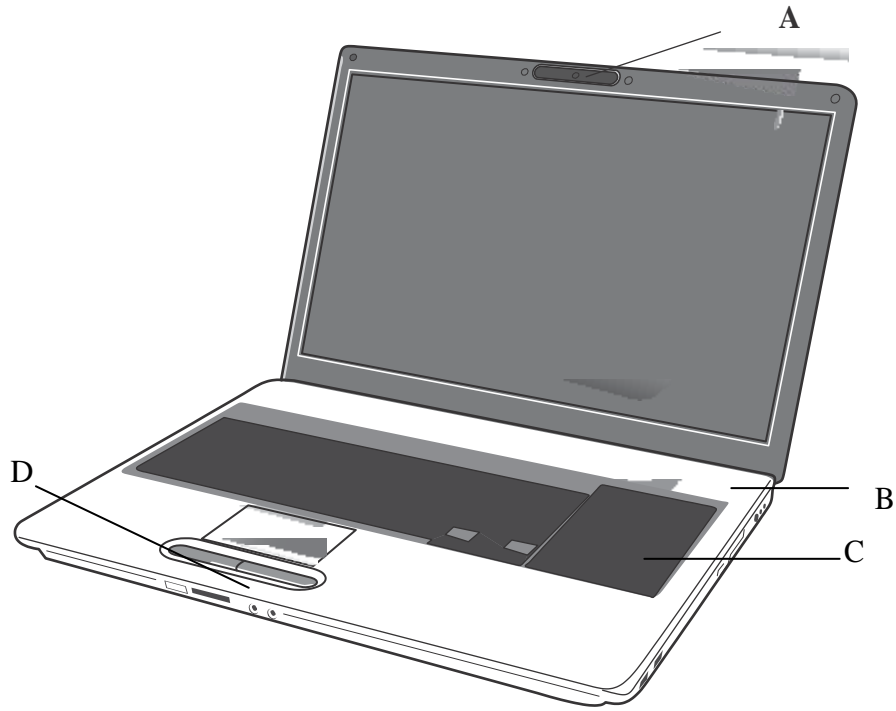


1 Name the devices A, B, C and D using words from the list.



- digital camera
- number pad
- remote control
- scanner
- speaker
- touch pad
- trackerball
- web cam

- A webcam
- B Speaker
- C number pad
- D touch pad

2 Ring two items which are output devices.

- graphics tablet
- keyboard
- laser printer
- motor
- optical character reader
- web cam

3 Tick True or False next to each of these statements.

	True	False
Computer programs are examples of software.	True	
A web authoring package is an example of hardware.		False
An icon is a component of a command line interface.		False
A mobile phone (cell phone) uses flash memory.	True	

4 Complete the following sentences using the most appropriate device from this list.

- A graph plotter A dot matrix printer A laser printer
- A buzzer A multimedia projector A trackerball

- (a) A dot matrix printer is used to print on continuous multipart stationery.
- (b) A buzzer is used to output sound.
- (c) A graph plotter is used in CAD applications for very large printouts.
- (d) A laser printer is used to produce high quality and high volume printouts.
- (e) A trackerball is used to move a pointer on a screen.

5 Explain how a firewall could be used to secure the data in a computer connected to the internet.

- Monitors and controls incoming and outgoing data traffic
- Helps to prevent malware getting into computer/from the internet
- Prevents computer accessing undesirable/unauthorised sites
- Prevents unauthorised computers using the internet accessing the computer
- Keeps a list of undesirable sites/IP addresses
- Keeps a list of acceptable sites/IP addresses
- Warns you regarding threats/allows you to accept/reject downloaded programs

6 Ali wants to back up his data.

(a) Give two reasons why making backups is necessary.

- 1 Safekeeping Files: The risk of data destruction is extremely high with worms and viruses threatening computer systems on a daily basis.
- 2 Effectiveness: Computer backup support work efficiency by restoring damaged or deleted files
- 3. If a file you are working on goes corrupt, you at least have some recent copies that aren't corrupt, so your total work won't be ruined
- 4. Data backup can save the time and the effort of creating data anew when it is damaged due to fire/accident.

(b) Ali thinks that making backups will prevent his data from getting viruses. Describe what a virus is and explain why Ali is wrong.

Viruses are small computer programs that copy themselves from file to file and computer to computer. They can display annoying messages on your screen or destroy all of your data. Ali is Wrong because making Data backup is simply having another copy of data where as virus can still damage files from computer system or backup storage like USB Drive/Hard disk if they are attached to virus infected system.

7 Describe three differences between a blog and a wiki.

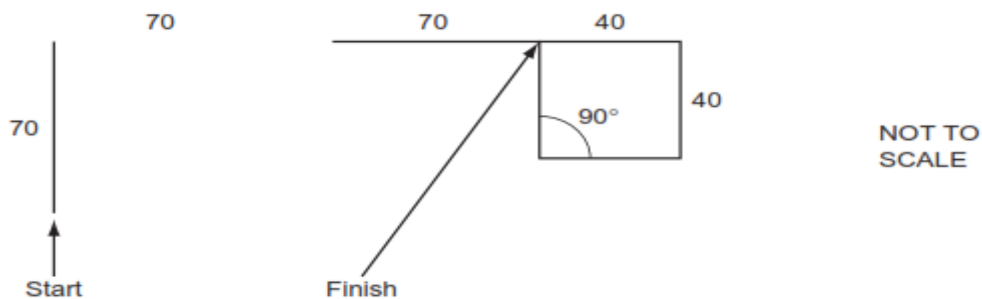
Blog	Wiki.
Blogs are personal	Wiki are Open to collaboration
Content is considered to be static: once posted, the posting doesn't change	Content is not permanent, it can be revised by any one
A posting is owned by a poster	Topics are considered public space owned by all
blog achieves one to many communication	wiki achieves a many to many means of communication.

8 Tick whether the following statements apply to online processing or batch processing.

	online	batch
Paying for goods at an EFTPOS	✓	
Producing electricity bills		✓
Booking a holiday	✓	
Producing payslips		✓

9 A floor turtle can use the following instructions:

INSTRUCTION	MEANING
FORWARD n	Move n forward
BACKWARD n	Move n backward
LEFT t	Turn left t degrees
RIGHT t	Turn right t degrees
PENUP	Lift the pen
PENDOWN	Lower the pen
REPEAT n	Repeat the following instructions n times
END REPEAT	Finish the REPEAT loop



Complete the set of instructions to draw this shape by filling in the blank lines.

- | | |
|------------|------------|
| PENDOWN | FORWARD 70 |
| FORWARD 70 | REPEAT 4 |
| RIGHT 90 | FORWARD 40 |
| PENUP | RIGHT 90 |
| FORWARD 70 | END REPEAT |
| PENDOWN | |

10 Describe the benefits and drawbacks to companies of using video conferencing.

Benefits

- There is no need to spend time and money traveling to meetings
- You can have a 'meeting' with people from many different offices /countries without any of them having to travel
- You can see people as well as hear them. This means you can see their body language which you can't do with a telephone call.
- You can all view a document on the screen at the same time. People can work together and add their ideas. The document can be emailed to all of the people at the meeting later on.
- Ideas and knowledge can be communicated between all those at the meeting very quickly and responses gathered. Video conferencing is good for 'brainstorming'.

Drawback

- Everyone who is going to 'attend' the meeting needs access to suitable hardware and software. This can be expensive and can take a while to set up.
- A very reliable, fast data link is needed. Many companies hire a connection specifically to allow video conferences to take place
- Even with a fast connection, there might be a slight delay between responses.
- If the hardware breaks down for any of the participants, they cannot 'attend' the meeting
- People could be in different time zones around the world. This might mean that some people have to stay up through the night in order to 'attend' the meeting.
- The video camera might not be able to see all parts of the room at the same time. Some people might not be easy to 'see' at the meeting.
- There is no substitute for a face-to-face meeting.

11 There are many safety issues associated with the use of computers.

Tick three methods which could be used to avoid these issues.

Take regular breaks from working at the computer.	✓
Do not overload electrical sockets.	
Make sure all cabling is securely tied.	✓
Sit with your back upright at all times.	✓
Always have a CO ₂ fire extinguisher in the room.	
Use a wrist rest when typing.	✓

12 A greenhouse is controlled by a microprocessor.

(a) Other than a light sensor name two sensors used in the greenhouse.

1 Temperature Sensor 2 pH Sensor 3 Moisture Sensor

(b) Explain why computers are unable to read the data directly from these sensors and name the device which would enable them to do so.

Sensor reads the data in analogue format. Computers don't understand analogue data and therefore it is converted to digital (e.g. 1's and 0's) using an analogue to digital converter (ADC). The computer can then read the data.

(c) Describe how the microprocessor uses data from the light sensor.

A light sensor shines a light on the image to be scanned and collects the data as simple changes between black and white based on the level of reflection. These changes are later converted into digital form for processing Using ADC which convert convert the Analogue Signal to Digital which is understand by Microprocessor, Based on the data received through ADC microprocessor control the lighting system

The process for this system would be...

Check light sensor reading using ADC

If it is less than the pre-defined value it means dark, turn on the lights

If it is more than the pre-defined value it means not dark, turn off the lights

13 Computers are used in supermarkets at point of sales terminals. When paying for goods the customer inserts the bank card into the chip reader.

(a) Identify three items of data contained in the chip on a bank card.

- 1 Card Number
- 2 PIN No
- 3 Expiry Date
4. Type of Card(Visa/Master etc)

(b) Describe three checks that would be carried out using information on the card before the bank is asked to authorise the transaction.

- 1 PIN No Check
- 2 Amount Check
- 3 Expiry Date
4. Check for Stolen or Blocked Card No

(c) Describe five steps which would be carried out by the computers at the supermarket and at the customer's bank to complete the transaction.

- 1 Computer takes the Barcode input using Barcode Reader and adds the item and corresponding cost in billing system
2. Calculate the Total Bill Amount
3. Connect to the Payment Gateway for transaction of payment
4. Payment Card is swipe and Pin no is entered if PIN is Correct
5. Bank Checks for required bill amount availability in customer account if yes it will ok the transaction and transfer the required amount to supermarket's bank account

If No it will decline the transaction

14 Mario has asked Louise, a systems analyst, to create a new database system for keeping records of books he sells in his bookshop.

(a) Louise will collect information about the existing system. Describe three methods she would use to do this

Three Methods to collect information about existing system are

1. **Observation:** Observation allows the systems analyst to gather **first-hand, unbiased** information by observing how the current system works.
2. **Interviews:** The systems analyst can interview **key people** within the system to find out how it works. Interviews allow lots of **very detailed information** to be gathered
3. **Questionnaires** With **large groups** of people, a questionnaire is a **quick** and simple way to gather information.

After collecting information, Louise noticed that Mario sells both non-fiction and fiction books in hardback and paperback. She also discovered that no books cost more than \$20. She wrote down some of the questions that customers ask, such as:

Have you got any non-fiction books by Arthur C Clarke?

Have you got the hardback

version of 'Harry Potter and the Philosopher's Stone'? Have you got any books for less than \$10?

(b) Complete the design table below filling in the field names and most appropriate validation checks to create a database which would answer these quest

Field name	Validation Check
Book Title	none
Author Name	none
Price	Range Check Price<=20
Fiction/Non Fiction	Boolean
Hardback/Paperback	Boolean

(c) Identify three items of test data which could be used with the Price field giving reasons for your choice.

Any three matched pairs from

1. **A value between 0 and 20**
This is normal data and should be accepted by the system
2. **0 or 20**
This is extreme data and should be accepted by the system
3. **Any number above 20 or text**
This is abnormal data and should be rejected by the system

15 (a) State what is meant by OMR and OCR.

OMR Optical Mark Reader

OCR Optical Character Reader

(b) Compare and contrast the use of OMR, OCR and a keyboard as methods of data entry.

OCR and OMR are quicker methods of entering data compared to a keyboard

OMR has limited uses such as exam answers

OMR can be used in school registers

Optical Character Recognition is more prone to errors

OCR can be used by utility companies to read meters/to make entered text editable

Keyboard is used to input data manually/typing

Keyboard can be more accurate than OCR/less accurate than OMR

Keyboard and OCR can input text more easily than OMR

Pre printed stationery is required for OMR

Specialised equipment is required for OCR/OMR

16 A company uses robots to manufacture cars.

(a) Tick four advantages to the company of using robots rather than humans to manufacture cars.

Robots are cheap to buy	
Running costs are lower as humans have to be paid wages	✓
Robots never need maintenance	
Humans cannot work continuously	✓
Robots can work in hazardous conditions	✓
There is lower productivity with robots	
Robots produce the same standard of finished product every time	✓
Humans have greater accuracy than robots	

(b) Describe three tasks that humans will have to do when robots are used to manufacture cars.

Programming robots

Changing robot arm tools/end effectors

Maintaining robots

Supervising operations

Quality control/inspecting finished cars

17 Describe what is meant by pharming.

Pharming" is the term for when criminal hackers redirect Internet traffic from one Web site to a different, identical-looking site in order to trick you into entering your user name and password into the database on their fake site.