3 Working of a Computer

CHAPTER CONNECT

Match the following inputs to their outputs.

Input	Output
1 🍎	a 📘
2 📄	b 🪑
3	c 🥤
4 🪵	d 👗

Topics Covered

- IPO Cycle
- Use of Computers in Different Fields
- Computers and Our Health

Introduction

In the previous chapter, we have learnt about different types of computer devices. For a computer to function, it has to follow the IPO cycle. Various computer parts work together to complete this process. IPO cycle is a three way process. Let us have a look at it.

Input $\longrightarrow$ Process $\longrightarrow$ Output

Input refers to providing a set of detailed instructions.

Process refers to working on the given instructions and analyse the solutions.

Output refers to giving out the desired solutions.

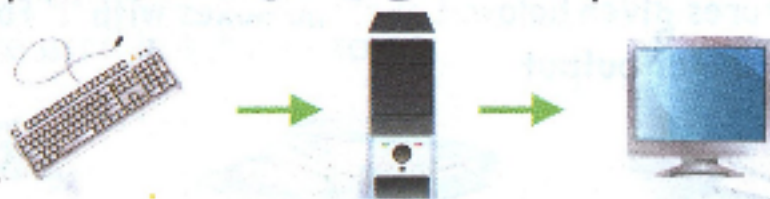Before learning IPO cycle, we should know about data and information.

Data - It is a collection of raw facts and figures, but sometimes it does not give a proper meaning like :

Priya Name - Kumari

Whereas **information** is an arranged form of data which gives a sensible meaning like Name - Priya Kumari.

Let us now understand the working of a computer with the help of IPO cycle.

We use a keyboard or a mouse to give input to a computer. The CPU processes the input. The monitor shows the output.
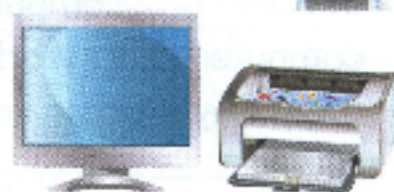
Input –We provide input to the computer by typing alphabets or numbers and by recording sounds or images. This is done with the help of devices such as keyboard, mouse, microphone, etc commonly known as input devices.

Process – Once input is given, the working of CPU begins. Each device has to be connected to the CPU in order to send or receive information. The CPU works on the data and does all the thinking and calculations.

Output – After the data has been processed, output may be printouts from the printer, sounds on the speakers or images on the monitor, etc. And finally we can store the output obtained in various storage devices. The three way process of Input – Process – Output makes a computer function well and gives us desired results.

Let us understand the working of a computer with an example:

The data and instructions together are the input. Here 2 and 5 are the data and '+' is the instruction.	Now, the CPU will work on the data according to the instructions, i.e, it will add the numbers 2 and 5.	7 is the correct result or output of the sum: $2 + 5 = 7$.
INPUT 2, 5, +	**PROCESS** 2 + 5	**OUTPUT** 7

Fun Time

Look at the pictures given below. Label the boxes with 'I' for input, 'P' for processing and 'O' for output.

(a)

Collect material for sandwich

Cut all the things for sandwich & arrange them

A sandwich is ready

I

P

O

(b)

Garland is ready	Put beads in thread	Collect beads and thread
O	P	I

(c)

Juicer	Fruits	Juice
P	I	O

USE OF COMPUTERS IN DIFFERENT FIELDS

Modern age is the age of computers. Nowadays, computers are used in almost every field of our lives.

Let us find out the application of computers at various places.

In Schools

Computers are used in schools to :

- maintain records of students.
- generate students' report cards.
- teach students by making them watch informative videos.
- type important notices and circulars.

In Hospitals

Computers are used in hospitals to :

- keep the records of patients.
- monitor the health conditions of seriously ill patients.
- perform surgeries and operations

In Offices

Computers are used in offices to :

- keep records of clients.
- type letters and other important documents.
- sending messages through E-mail (Electronic mail).

In Banks

Computers are used in banks to :

- keep the records of the money people withdraw or deposit in their accounts.
- withdraw money from ATMs.

At Railway Stations and Airports

Computers are used at railway stations and airports to :

- book tickets.
- give information about the arrival and departure time of the trains and aeroplanes.

At Homes

Computers are used at homes to :

- watch movies and listen songs.
- search information on any topic on internet.
- play games.
- do homework.

In Space Research

Computers are used in space research to :

- find information on space.
- launch and control satellites and rockets.
- receive and analyse data sent from satellites.

In Designing

Computers are used to design almost everything :

- to design clothes, cars, machines, buildings, etc.
- to design and print books, newspapers, magazines, etc.
- to make cartoons and animated movies.

Cyber Tid Bits

Nowadays, with the help of computers, we can purchase items online. This is known as online shopping. Without going to the markets, we can order items at our homes.
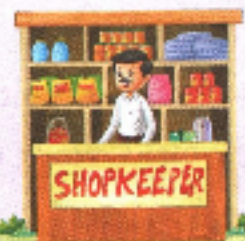
Fun Time

Given below are pictures of some professionals. Put a tick (✓) in the box if the professional needs a computer or else put the cross (✗).

(i) Shopkeeper ✓

(ii) Farmer ✗

(iii) Milkman ✗

(iv) Doctor ✓ (v) Students ✓ (vi) Cobbler ✗

COMPUTERS AND OUR HEALTH

Now, we know that how computers are helpful to us. But it is not safe to use a computer continuously for long hours. We should use the computer only for a short period of time in a day.

> **Recap**

- A computer works on the IPO cycle.

  Input ⟶ Process ⟶ Output

- Computers are used in schools to make report cards, type important notices and circulars, etc.

- Computers are used in hospitals to keep records of patients, monitor their health, perform operations, etc.

- Computers are used in offices to send e-mails, type letters and documents.

- Computers are also used in banks and at other places. They make work easy and save time.

EVALUATE

A. Tick (✓) the correct answer.

1. Which cycle do all the machines follow?

   (a) P-I-O ☐   (b) I-P-O ☐   (c) O-I-P ✓   ☐

2. Which of the following shows the output?

   (a) Monitor ✓   (b) Mouse ☐   (c) Keyboard ☐

3. _____ are used in hospitals to keep records.

   (a) Calculators ☐   (b) Computers ☐   (c) Mobiles ✓   ☐

B. Fill in the blanks using the given words.

> railway stations, banks, hospitals, offices, schools

1. Computers are used in __Bank__ to keep a record of money deposited or withdrew.
2. Computers are used in __Schools__ to make report cards.
3. Computers are used at __Railway Station__ to book tickets.
4. Computers are used in __Hospitals__ to monitor the health of patients.
5. Computers are used in __offices__ to send e-mails.

C. Write 'T' for true and 'F' for false statements.

1. Data typed in a computer is called output. __F__
2. We get input from the computer. __F__
3. The CPU does all the thinking and calculations. __T__
4. Computers are used in offices for calculation. __F__
5. We cannot use a computer to design books. __F__

D. Answer the following questions.

1. What is data? __Data is a smallest unit and it is collection of raw, fact and figures.__

2. What does input refer to?

   Input refers to set of detailed instructions.

3. What do you mean by process?

   Process means working on given input instructions.

4. Write two uses of computers in schools.

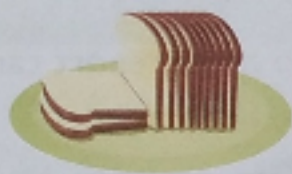   _maintain students record and generate report card_

5. How are computers helpful at railway stations?

   computer is used for ticket booking and giving information about train scheduled.

ACTIVITY

A Write the correct word (Input, Output or Processing) in the boxes.

1.

Input   Processing   output

2.

Processing   Input   output

3

7   5,2 +   5 + 2
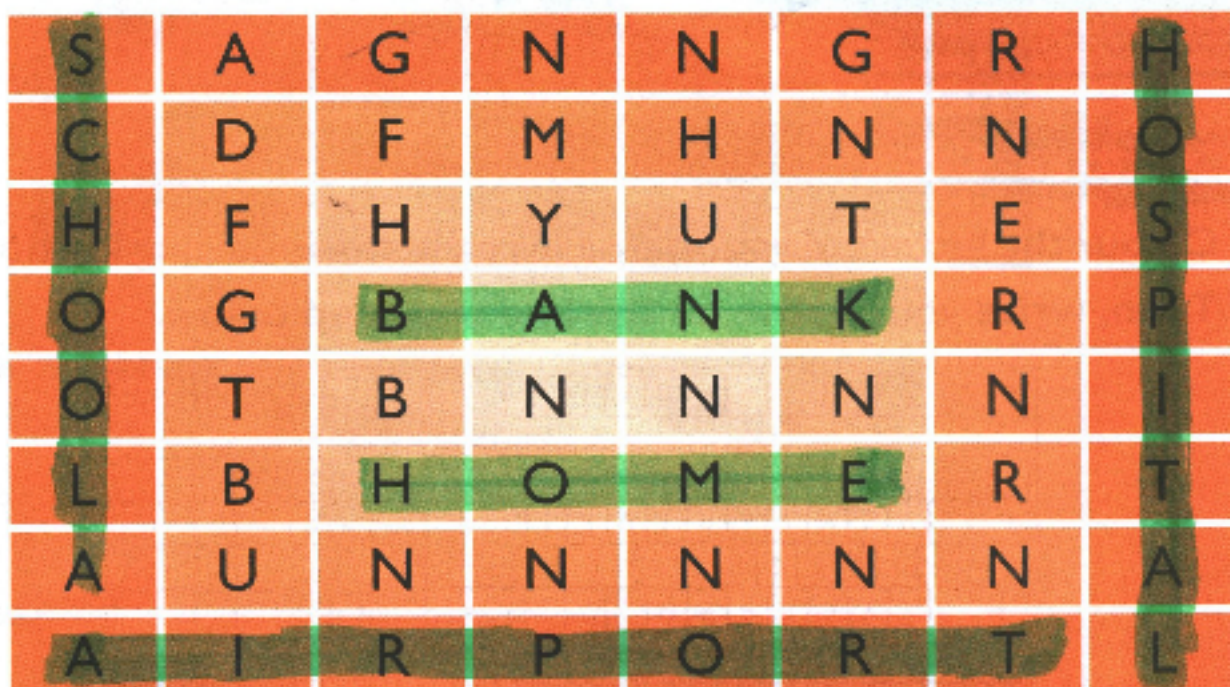
output   Input   Processing

B The names of some places where we use computers are given in the box. Circle them in the wordsearch.

HOSPITAL   AIRPORT   SCHOOL   HOME   BANK

S	A	G	N	N	G	R	H
C	D	F	M	H	N	N	O
H	F	H	Y	U	T	E	S
O	G	B	A	N	K	R	P
O	T	B	N	N	N	N	I
L	B	H	O	M	E	R	T
A	U	N	N	N	N	N	A
A	I	R	P	O	R	T	L

IN THE COMPUTER LAB

Try to solve the given sums first yourself and then by using a computer. Open the calculator program by clicking on the **Start** > **All apps/programs** > **Calculator**.

1. $25 + 32$ = 57
2. $28 + 15$ = 43
3. $40 - 11$ = 29
4. $36 - 18$ = 18
5. $15 \div 3$ = 5
6. $72 \div 9$ = 8
7. $144 \div 16$ = 9
8. 12×5 = 60