Expt. No.....

F.Y.B.Tech Academic Year 2021-22

Subject : Programming and Problem Solving
Trimester: 1

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Division: 1
Batch : A 3

Assignment - 1

Aim:

a) Write an algorithm and draw a flowchart to log in to GMAIL Account

b) Write an algorithm and draw a flow chart to calculate the vol and area of a sphere using $V = 4 * Pi * v^3 / 3$ and $A = 4 * pi * V^2$ where v is radius of sphere

Objective:

1. To understand importance of flowchart for any programming model

2. To learn simple flowchart symbols and arrow to define relationships

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3. To understand and develop visual representation of the flow of data

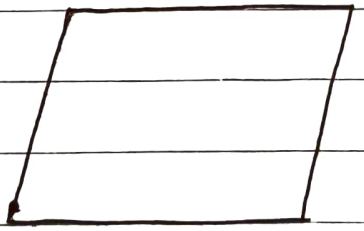
Theory :

1) Terminal

It indicates the starting or ending of the program process or interupts the program

2) Input / Output

Used for any input output (I/O) operation, it indicates that the computer is to obtain data or output result



3) Decision

Used to ask a question that can be answered in binary format (Y/N) (T/F)

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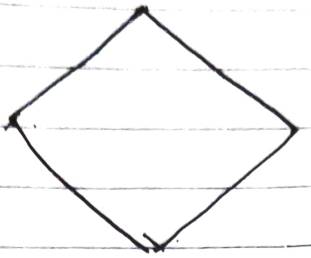
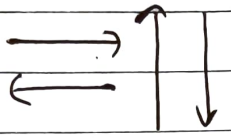


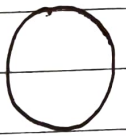
4) Flow lines

They indicate the direction or Flow of control



5) Connectors

Allows flowchart to be drawn without intersecting lines or without a reverse flow



Observations :-

A) Input:

Write an algorithm and draw a Flow chart to log in into gmail account.

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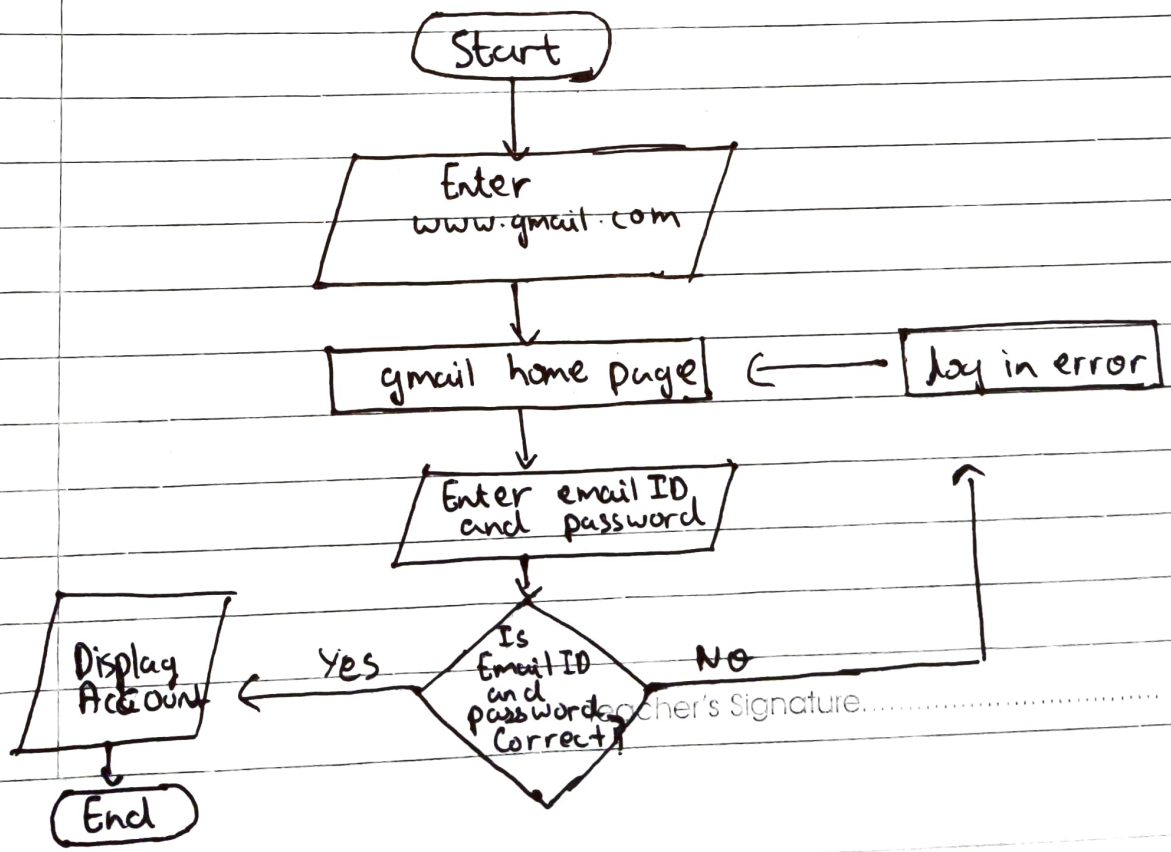
Output:

Algorithm

Step 1: Start
Step 2: Enter www.gmail.com in your browser (I/O)
Step 3: gmail home page loads (Process)
Step 4: Enter your email ID and password (I/O)
Step 5: Is email ID and password valid (Decision)
Step 6: If no then
Step 7: log in error (Process)
Step 8: Go to step 4
Step 9: else display gmail account (I/O)
Step 10: Stop.

Flowchart



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B) Input:

Write an algorithm and draw a flow chart to calculate vol and temperature of a mass of air that are related. Calculate vol and area of sphere using the formula $V = 4 * Pi * r^3 / 3$ and $A = 4 * Pi * r^2$

Output:

Algorithm

Step 1: Start
Step 2: Accept r (I/O)
Step 3: Calculate volume $V = 4 * \pi * r3 / 3$ (Process)
Step 4: Calculate area $A = 4 * \pi * r^2$ (Process).
Step 5: Print V and A (I/O)
Step 6: Stop.

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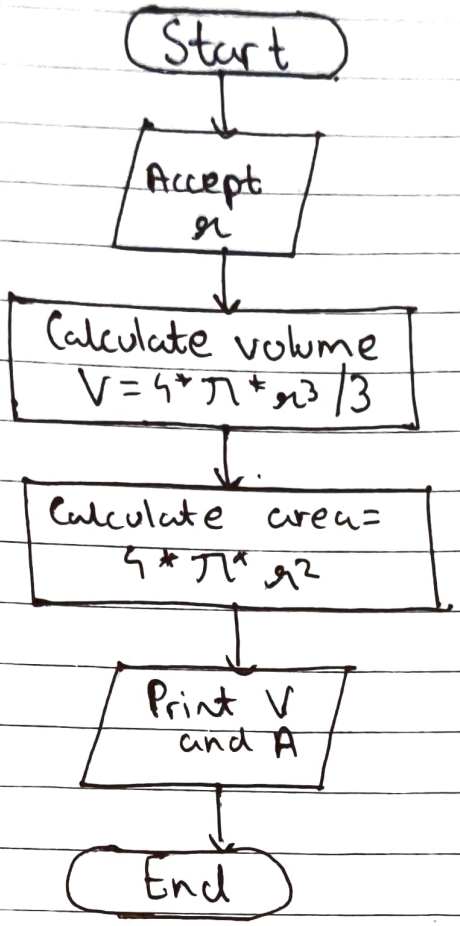
Flowchart:



Conclusion:

Thus learnt formalized graphic representation of a given logical sequence.

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FAQ

1. Enlist various rules to draw flowchart

→ The flowchart should be neat, clear and easy to understand

The usual flow of Flow chart is from top to bottom or left to right.

Only one flow line should come out from process symbol

Only one flow line should enter a decision symbol but two or three can exit it.

Only one flow line for terminal symbol.

2. How to indicate timeframe of a flowchart

→ Timeframe can be indicated down the left side of flowchart.

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3. How to show responsibilities on a flowchart?

→ Responsibilities are represented by the columns on a flowchart. The symbols are placed within the column of the person or group responsible to complete that item.