# Logic development tools

WHAT IS LOGIC??????

***Logic is a tool to develop reasonable conclusions based on a given set of data.*** ***OR***

**"Way of thinking about something"**

FLOW CHART

ALGORITHM

**LOGIC DEVELOPMENT TOOLS OR TECHNIEQUS**

**Detail :-**

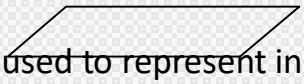
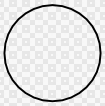
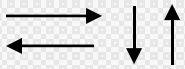
- **Logically developed means that the ideas in your paper, the way you support these ideas and the connections you make between ideas make logical sense.**
- **Logic is a tool to develop reasonable conclusions based on a given set of data.**
- **In other words, Logic is a "way of thinking about something".**

## Flow Chart:-

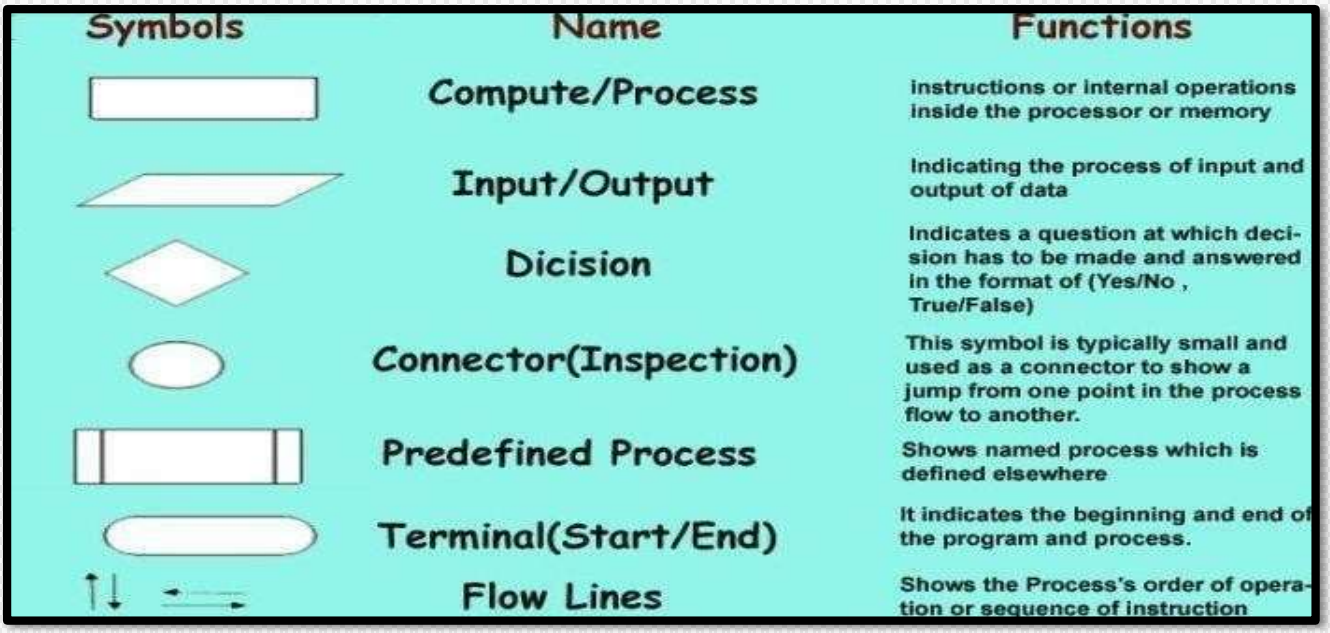
- **Flow chart is graphical representation of our data.**
- **It also gives idea about sequence of flow.**
- **Flow chart can represent logic flow and process of data.**

### Flowchart Symbols:

- **Flow chart support following symbols to represent the logic.**

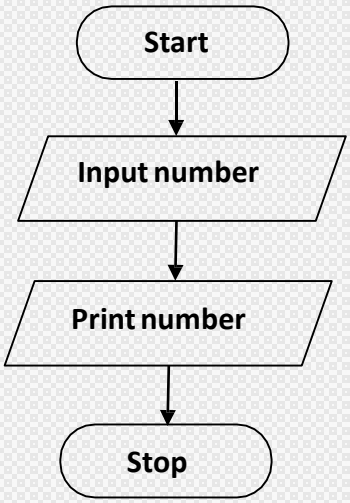
1. **Terminator:** 
   - This symbol represents beginning and ending point in the program.
2. **Input/Output :** 
   - It is used to represent input and output of the data.
3. **Process :** 
   - This symbol is used to represent different process of operations.
4. **Decision Symbol:** 
   - This symbol is used to give condition and take decision.
5. **Connector Symbol:** 
   - It is used to represent logic flow of out data.
6. **Data Flow Symbol / Flow Direction:** 
   - It is used to represent direction flow of our data.

**By Diagram :**



**Example:**

A flowchart to print the number.




## 1 Word Question – Answer

| SR.NO. | QUESTION | ANSWER |
|---|---|---|
| 1 | List out logic development tools or techniques | Flowchart ,Algorithm |
| 2 | _____is graphical representation of the code. | Flow Chart |
| 3 | Which Symbol is used to represent process in Flow chart. | |

# ALGORITHM :-

**By Diagram :**

**ALGORITHM :-**

**" DETAIL SEQUENCE OF SIMPLE STEPS" OR "IT CONSIST SET OF FINITE STEPS"**

**Detail :- (For Exam Content)**

- Algorithm is one of the **best logic development techniques.**
- It is detail **sequence of solving the problem.**
- In algorithm we can manage input and output as well as any condition.
- Algorithm is a **step-by-step procedure**, which defines a set of instructions to be executed in a certain order to get the desired output.
- Algorithms are generally created independent of underlying languages, i.e. an algorithm can be implemented in more than one programming language.

➢ **Features of Algorithm :-**

**(1) Input :-** There must be at least one input.

**(2) Output :-** There must be at least one output.

**(3) Effectiveness :-** Each step of algorithm must be effective.

**Example: An algorithm for multiplication of two values.**

Step 1: Start
Step 2: Input value -1
Step 3: Input value -2
Step 4:Calculate ans = value -1 * value -2
Step5:Print ans
Step 6:Stop

## 1 Word Question – Answer

| | | |
|---|---|---|
| 1 | What is Algorithm? | "sequence of simple steps" |
| 2 | Algorithm must————after finite steps. | terminate |

- **Dry Run**

**Detail :-**

- Dry run is nothing but **manual compilation of code.**
- You can test your program without using a computer by ***dry running*** **it on paper.**
- You act as the computer – following the instructions of the program, recording the valves of the variables at each stage.
- You can do this with **a *table.***
- The table with have column headed with the names of the *variables* in the program.
- Each row in the table will be labeled with a line number form the program.
- In this table you can record all relevant changes to the variables as the program progresses, **thereby test the logic of the program / algorithm.**
- **Do a dry run before you code your program on computer** this way any logic errors will come to light during the dry run.

**Example:-**

* L1 Declare two variables , first num second num
* L2 Initialize both variables to 0
* L3 first num = 0 second num = 0
* L4 Ask user to enter first number
* L5 Assign user input to first num variable
* L6 Ask user to enter second number
* L7 Assign user input to second num variable
* L8 Add first num to second num
* L9 Print result

## 1 Word Question – Answer

| SR.NO. | QUESTION | ANSWER |
|---|---|---|
| 1 | What is Dry run? | "Manual Compilation of Code." |
| 2 | In Dry run , you can test your program by performing steps on paper.(Yes/No) | Yes |