

Name: _____ Class: VI Roll: _____ Section: _____
Subject: Computer Science Teacher: Sumaiya Shabbir Date: _____

ALGORITHM:

The word "algorithm" relates to the name of the mathematician Al-khowarizmi, which means a procedure or a technique. Software Engineer commonly uses an algorithm for planning and solving the problems. An algorithm is a sequence of steps to solve a particular problem or algorithm is an ordered set of unambiguous steps that produces a result and terminates in a finite time

Algorithm has the following characteristics

- **Input:** An algorithm may or may not require input
- **Output:** Each algorithm is expected to produce at least one result
- **Definiteness:** Each instruction must be clear and unambiguous.
- **Finiteness:** If the instructions of an algorithm are executed, the algorithm should terminate after finite number of steps

Advantages of algorithm

- It is a step-wise representation of a solution to a given problem, which makes it easy to understand.
- An algorithm uses a definite procedure.
- It is not dependent on any programming language, so it is easy to understand for anyone even without programming knowledge.
- Every step in an algorithm has its own logical sequence so it is easy to debug.


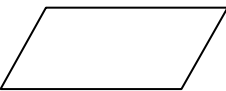
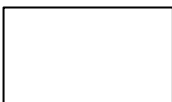
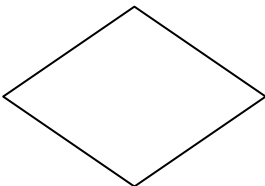
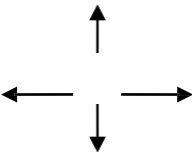

FLOWCHART:

The first design of flowchart goes back to 1945 which was designed by John Von Neumann. Unlike an algorithm, Flowchart uses different symbols to design a solution to a problem. It is another commonly used programming tool. By looking at a Flowchart one can understand the operations and sequence of operations performed in a system. Flowchart is often considered as a blueprint of a design used for solving a specific problem.

Advantages of flowchart:

- Flowchart is an excellent way of communicating the logic of a program.
- Easy and efficient to analyze problem using flowchart.
- It is easy to convert the flowchart into any programming language code.

Flowchart is diagrammatic /Graphical representation of sequence of steps to solve a problem. To draw a flowchart the following standard symbols are used:

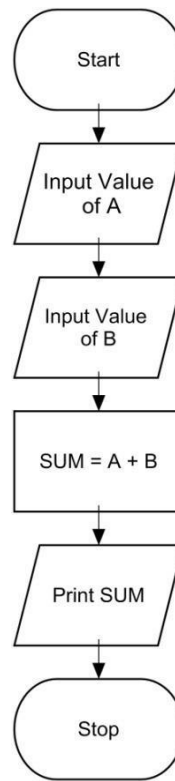
Symbol Name	Symbol	function
Oval		Used to represent start and end of flowchart
Parallelogram		Used for input and output operation
Rectangle		Processing: Used for arithmetic operations and data-manipulations
Diamond		Decision making. Used to represent the operation in which there are two/three alternatives, true and false etc
Arrows		Flow line Used to indicate the flow of logic by connecting symbols
Circle		Page Connector

..

Algorithm & Flowchart to find the sum of two numbers

Algorithm

- Step-1 Start
- Step-2 Input first numbers say A
- Step-3 Input second number say B
- Step-4 $SUM = A + B$
- Step-5 Display SUM
- Step-6 Stop



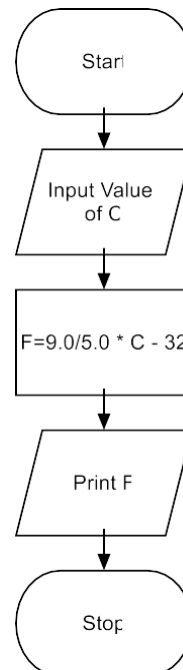
Algorithm & Flowchart to convert temperature from Celsius to Fahrenheit

C : temperature in Celsius

F : temperature Fahrenheit

Algorithm

- Step-1 Start
- Step-2 Input temperature in Celsius say C
- Step-3 $F = (9.0/5.0 \times C) + 32$
- Step-4 Display Temperature in Fahrenheit F
- Step-5 Stop



Algorithm & Flowchart to convert temperature from Fahrenheit to Celsius

C : temperature in Celsius

F : temperature Fahrenheit

Algorithm

Step-1 Start

Step-2 Input temperature in Fahrenheit say F

Step-3 $C = 5.0/9.0 (F - 32)$

Step-4 Display Temperature in Celsius C

Step-5 Stop