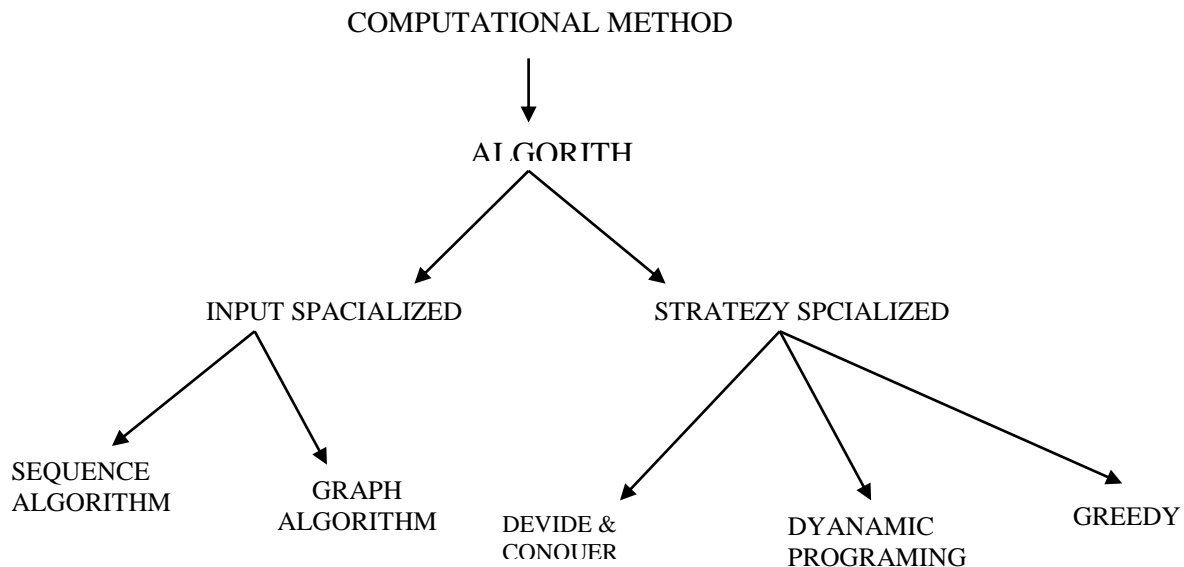


## ALGORITHM

**Concept of Algorithm:** Algorithm is the one of the most basic tools which is used to develop problem solving logic. We can define an Algorithm as a finite sequence of steps or instructions that when provided with a set of inputs produces an output and then terminates



In a proper algorithm, steps must be unambiguous and after a finite number of steps, the solution of the problem should be achieved. However in an algorithm steps can also repeat (iterate) or require decisions (condition checking) until a task is completed. Different type of algorithms may be used to do the same task where each of them may take different time, space or effect. For example if we take the step involved in “preparing tea”, then we may have one can do “Add Sugar” whiling “Boiling the Water”. On the other hand another can do “After Boiling Water”. In both the cases the result is same.

After an algorithm has been designed, we can represent it as a flow chart, pseudo code or decision table etc, which are further expressed in programming language to develop computer programs.

### ALGORITHM: To find the Largest of 3 numbers

- Step 1: Start
- Step 2: Read three numbers A, B, C
- Step 3: Find the larger number between A&B and store it in MAX.
- Step 4: Find the larger number between MAX & C then store it in MAX
- Step 5: Display MAX.
- Step 6: Stop

### Properties of Algorithm:

Algorithms are not computer programs, as because they can not be executed by a computer.

- No ambiguity should present in any instructions.
- There should not be any uncertainty about which instruction is being executed next.
- The description of the algorithm must be finite.
- It must terminate after a finite number of steps.
- It must be simple enough understand easily.

Concept of algorithm (Refinement of computational method):

A computational method is a method for solving a specific type of problem by means of a finite set of operations on inputs, which are quantities given to it before execution of the steps begins or during execution and producing one or more outputs.

Algorithm is a step by step procedure to perform an operation having a termination point. Algorithms have a definite beginning and a definite end, and a finite number of steps.

An Algorithm produces the same output information as give in the input. Several short algorithms can be combined to perform complex tasks such as writing a computer program.

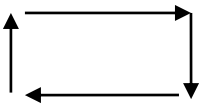
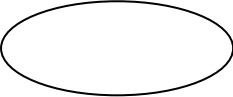


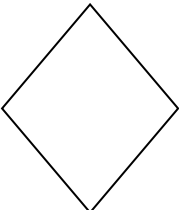
Eg: A problem solving routine.

However algorithms are unsuitable for problems where value judgments are required.

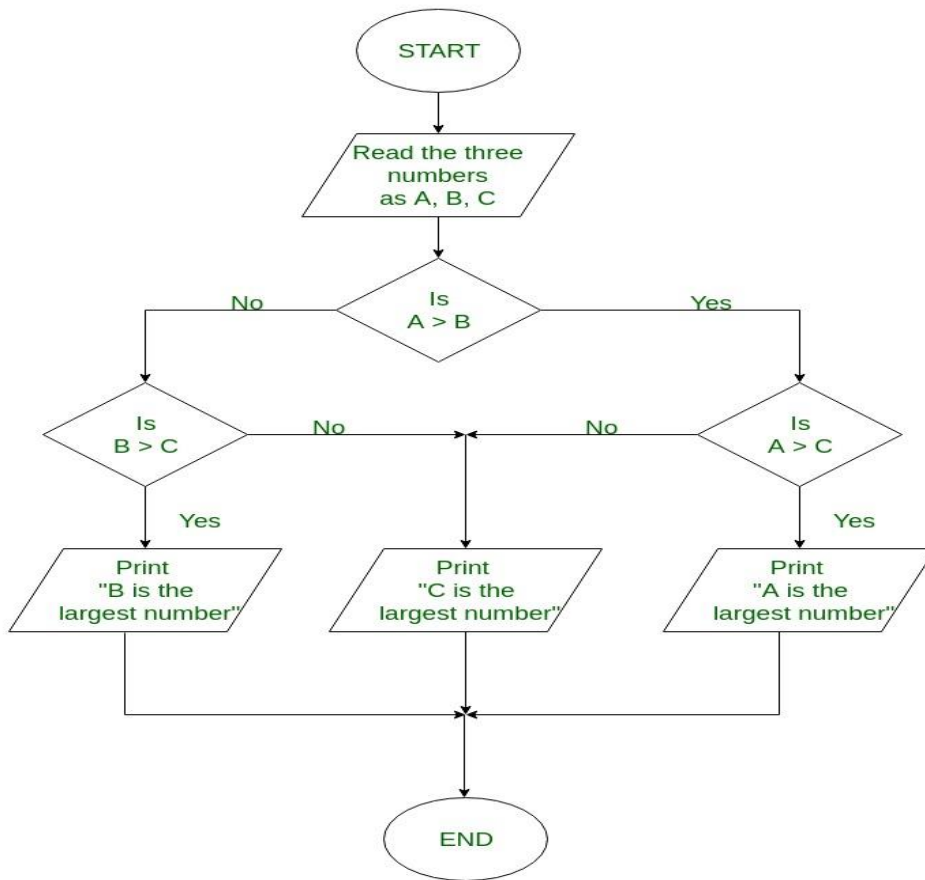
**Flow Chart:**

A flowchart is a diagram that represents a process or algorithm. The steps are represented by a series of boxes or other specialized symbols, and then connected with arrows. It is a pictorial representation of an algorithm in which the steps are drawn in form of different shapes. The primary purpose of flowchart is to help the programmer in understanding the logic of the program.

Symbols used in flowchart:

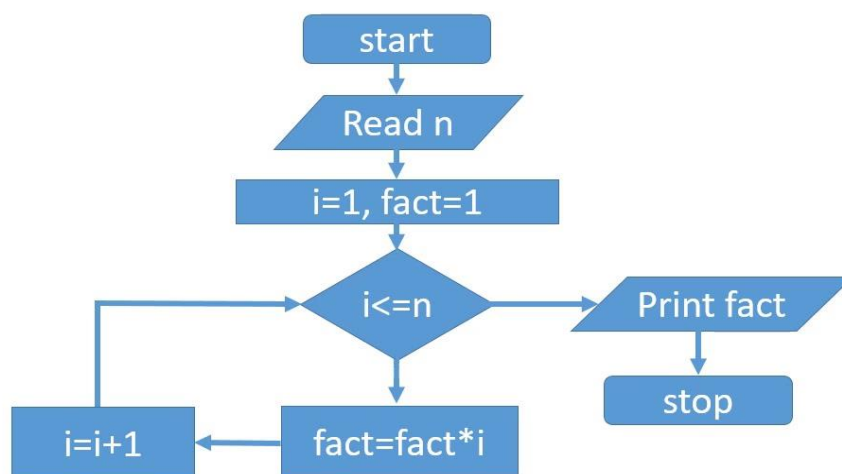
Symbols	Description
	<b>Flow lines:</b> They are used to connect different symbols
	<b>Start / Stop:</b> Used to indicate Beginning and End of the flow chart
	<b>Processing:</b> Used to represent processing of instructions
	<b>Input/ Output:</b> Information entering of leaving the system
	<b>Decision:</b> Logical decision

1. Flow chart to find the largest of three numbers.



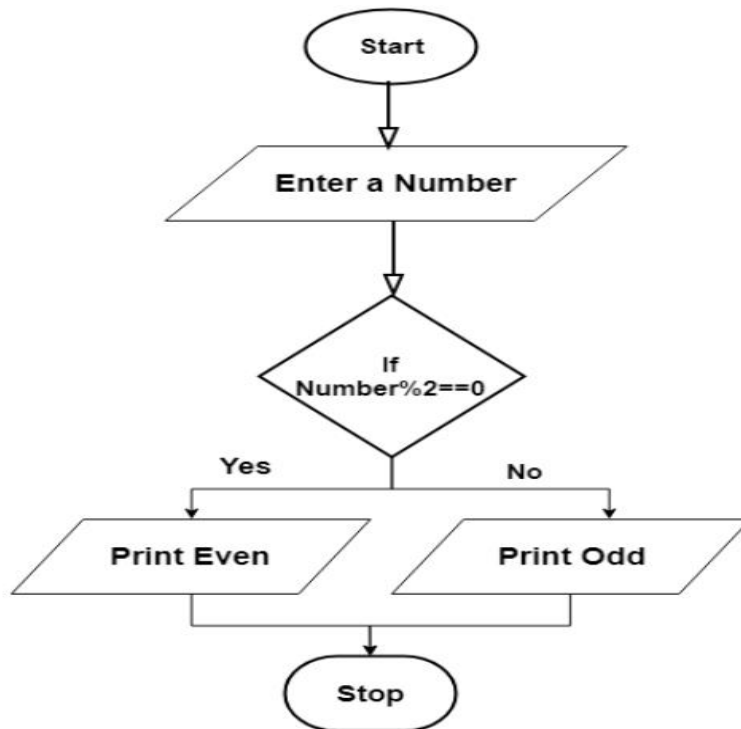
2. Flow chart to find Factorial of a number.

**FLOWCHART FOR FACTORIAL OF A NUMBER**



Music by: [www.bensound.com](http://www.bensound.com)

3. Flow chart to find ODD or EVEN number



4. Flow chart to find Prime Number.

