***Algorithm***

An algorithm is a well-defined procedure that allows a computer to solve a problem. Another way to describe an algorithm is a sequence of unambiguous instructions.

***0 notation***

It is an Big-0 Notation, it is used to measure the time taken to by the program to execute number of inputs.

***NP Hard and NP Complete problem***

A problem is NP-hard if any problem in NP can be reduced to it in polynomial time.

A problem is NP-complete if any problem in NP can be reduced to it in polynomial time AND it is also in NP(and thus solutions can be verified in polynomial time).

***Popular scenarios where time complexity is the key for choosing an algorithm***

Binary search is used to perform a very efficient search on sorted dataset(In Best Case). The time complexity is 0(log2N)

**Ex**:DFS(Depth First Search) and BFS(Breath First Search)

* + Used by search engines
  + Finding shortest path between two cities in a map and many other such applications.

***Time complexity of a program***

Time complexity of a program can be calculated by number of iterations or number of times the loop has been executed.