

## **Introduction to Algorithm-**

### **What is algorithm?**

A set of step by step, well-defined and meaningful instructions written in simple English to solve or carry out specified problem.

Example-

### **Write an algorithm to add two numbers.**

Step 1 : Take two numbers from user into variable a and b.

Step 2 : Add a and b and store into variable S.

Step 3 : Print the value of S

Step 4 : End of program

### **Characteristics of Algorithm :**

**Input :** An algorithm should take one or more input.

**Output :** An algorithm should take zero or more output.

**Definiteness:** The steps should be unambiguous, i.e. it should have one and only one meaning.

**Finiteness:** The steps should be finite, i.e. after some finite no. of steps the algorithm should terminate.

**Effectiveness:** The steps should be simple that anyone can solve it through pen and paper.

### **Relationship between Algorithm and Data Structure-**

Data Structure is the mapping between an algorithm and a program, i.e. data structure helps to convert a textual algorithm to the runnable or executable program. Every programming language provides data structure. For example- Integer, Char, Float are the basic data structure. Array is also provided by different programming language.

Hence in the study of data structure course the functions we learn on different data structure is represented through algorithm and some of them we implement through C language.

In the progress of our study we will learn to write algorithm gradually. I will give you some examples and you will do some other as exercise.