

## What is an Algorithm

An algorithm is a step by step procedure or formula for solving a problem.

It is a set of instructions that a computer program follows to accomplish a specific task or solve a particular problem.

## Characteristics of a good algorithm

### 1) Well-defined →

An algorithm should be well-defined, which means that each step in the algorithm should be precisely defined and unambiguous.

### 2) Finiteness →

An algorithm should terminate after a finite number of steps. This means that it should not run indefinitely and should eventually produce an output.

### 3) Input →

An algorithm takes zero or more inputs and produces at least one output.

## Merits of an algorithm →

Algorithms are a fundamental concept in computer science and programming, and they offer several benefits or merits, such as:

### 1) Accuracy →

Algorithms provide accurate and consistent results. Since the steps are well-defined and unambiguous, there is no room for errors or inconsistencies in the output.

### 2) Efficiency →

Algorithms can solve complex problems efficiently. By breaking down a problem into smaller, more manageable steps, algorithms can solve problems in a more efficient way than a human could.

### 3) Reusability →

Algorithms can be reused in multiple programs or applications, which can save time and effort. Programmers can simply reuse an algorithm rather than rewriting it from scratch every time they need it.