Properties of Algorithm

> Tags: Algorithm,

Algorithm

A sequence of discrete actions that when followed will result in achieving some goal or solving a problem

An **Algorithm** must have 5 properties:

1. input specified
2. output specified
3. definiteness
4. effectiveness
5. finiteness

Input Specified

The data to be transformed during the computation to produce the output

input precision requires that you know **what kind of data**, **how much** and **what form the data** should be
There can be an algorithm be an algorithm without input data

Output Specified

The data resulting from the computation (your intended result)

output precision also requires you to know what kind of data how much and what form the output should be (or if there would be any output at all)

Definiteness

Algorithms must **specify** every step and the order of the steps must be taken in the process

There shouldn't be any doubt what should be in the next step

Effectiveness

For an algorithm to be effective it means that all those steps that are required to get output must be **doable**

All of the operations to be performed in the algorithm must **sufficiently basic**(not complicated)

Finiteness

the algorithm must stop, eventually

- stopping may mean that you get the expected output OR you get a response that no solution is possible
- an algorithm must always **terminate** after a finite number of steps.

Other Algorithmic Characteristics

- algorithms should be general and be applicable to several cases
- algorithm should use resources efficiently: fast speed and min RAM
- algorithms should be understandable
- algorithms should be **clear** and **precise**