Data Strucutres and Algorithms

Nithin

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What is Algorithm?

As per Donald Knuth

Algorithm

A definite, effective and finite process that receives input and produces an output

Definite : steps are clear, concise and unambigious

Effective : you can perform each operation precisely

Finite : finite number of steps

Analysis

When two programs solve the same problem, Analysis is finding answer to the question which one is better?

Better on ?

- Readability :

Better on ?

- Readability : changes with programming language

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- Number of Lines :

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Big-O

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To charactrize the alogrithm in terms of execution time independent of
any particular program or computer

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To represent algorithm in terms of operations or steps. If each of these step is a basic compute unit, then execution time of an algorithm is the total number of compute units

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Note

Deciding on basic computation unit can be complicated and depend on how algorithm is implemented