Reading Material

ALGORITHM ANALYSIS AND DESIGN CONCEPTS

Complexities and Algorithm Analysis

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2.1 Computation Complexity

By now, you would have understood that there are multiple solutions to a problem. In other words, multiple Algorithms can be used for a problem. The question then arises as to which Algorithm is better, or is the most efficient for the given situation? For a small data set, the difference in performance of algorithms may not matter. When the data set becomes large, it is very likely that one Algorithm may maintain the same level of performance while the performance of a different Algorithm may become paralyzingly slow.

Juris Hatmanis and Richard Stearns introduced the concept of *Computational complexity* to assess the performance of algorithms and compare them on multiple factors. The most commonly used factors are Time and Space.

2.1.1 Time Complexity

The Analysis based on time taken to execute the algorithm is called as the Time Complexity of an algorithm. The Total Execution time depends on the machine, hardware and other real-time factors such as current load on the system and Network latency. Time complexity is expressed in terms of operation count or step count

‹ Asymptotic Analysis - Part 1 (/?q=MULNCourseBook/listDetailedCBLearningContents/178099/cidb/full/view/153678/431532/431528/39730)

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