Book: Introduction to Algorithms

Chapter: The Role of Algorithms in Computing

Abstract:

An algorithm is a series of steps required to accomplish a particular task. Algorithms are ubiquitous. We may have an algorithm for getting home from work or even for making a cheese sandwich. The algorithm is the ‘Science’ in ‘Computer Science’. How does Google Maps retrieve directions or how does NASA decide the location of future satellites? Almost everything, including the Facebook news feed, uses algorithms. This text gives us an introduction to algorithms and the reasons why to use them. The later section of the chapter focusses on how the use of good algorithm reduces computing time and memory requirement in computers. The efficiency of different solutions to solve the same problem can vary based on the algorithm used. Finally, this writing concludes that although computers are now available with many advanced technologies like superscalar architecture and intuitive GUI, the efficiency of an application heavily relies on the algorithm.