

# Greedy Algorithms

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## Abstract

The purpose of this paper is to explain what a Greedy Algorithm is, examine what they do, and dissect some of the reasons why they might not be used.

## 1 What is a Greedy Algorithm?

A greedy algorithm is an algorithm that attempts to complete its task as optimally as possible, "optimal" being any path that leads to the largest progression towards the goal. This often manifests in the algorithm making multiple short term optimal decisions in the hopes that the final result will be optimal.

## 2 Applications

A greedy algorithm can be used to reduce the number of resources used for typically more arduous tasks.

For instance, a greedy algorithm can be used to make a cash register that produces the least amount of coins needed to return change. A greedy algorithm could also be used to create core processors that only use as much power as is necessary.