Greedy

Greedy:

- algorithm that makes the locally optimal choice at each stage

- a greedy algorithm never reconsiders its choices

  - choice made by a greedy algorithm may depend on choices made so far, but not on future choices or all the solutions to the subproblem

Greedy components:

- a candidate set: from which a solution is created

- a selection function: chooses best candidate to be added to the solution

- a feasibility function: determines if a candidate can be used to contribute to a solution

- an objective function: assigns a value to a solution (or partial solution)

- a solution function: indicates when we discover a complete solution

Examples:

- Traveling Salesman

  - given a list of cities and the distances between each pair of cities, what is the shortest possible route that visits each city exactly once and returns to the origin city

- min coins to give change

  - pick biggest coin possible, next biggest possible, etc.

- minimum spanning tree

  - Kruskal's
  - Prim's

- optimum Huffman trees

Sources:

- https://en.wikipedia.org/wiki/Greedy_algorithm