Programming fundamentals with Python

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Algorithms

Algorithms describe the sequence of steps to solve a problem

Algorithms

Problem: How does one assemble IKEA furniture?

Algorithms

Algorithms

Problem: How do you search a word in The Dictionary?

Sorting Algorithms

Sorting algorithms study the most performant way of sorting all elements in a sequence

Sorting Algorithms

Search Algorigthms

Search algorithms try to find whatever you're looking for in the most performant manner

Search Algorigthms

Can you apply the algorithm you thought of for searching in a dictionary to search in something bigger like... All posts in Facebook?

Ranking Algorithms

Ranking algorithms try to measure the importance of different nodes in a graph

Ranking Algorithms

Pagerank. How did google ranked their webpages? (circa 1998)

Ranking Algorithms

H-Index. How does scientific community measure the importance of a researcher?

Shortest path

Shortest path algorithms try to find the... well, the shortest path between two nodes in a graph

Shortest path

Six degree problem

Shortest path

Erdos number

Bacon number

Erdos - Bacon number

Shortest path

Algorithm complexity

There are two units which we measure when checking the complexity of an algorithm: Time and Space

Algorithm complexity