



#### Overview

Week 1

Week 2

Week 3

Week 4

Week 5

Week 6

week 6

Grades

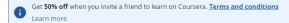
Notos

**Discussion Forums** 

Messages

Resources

Course Info



# Week 3

Algorithmic Toolbox

### Week 3

Discuss and ask questions about Week 3.

33 threads · Last post 11 hours ago

Go to forum

### **Greedy Algorithms**









In this module you will learn about seemingly naïve yet powerful class of algorithms called greedy algorithms. After you will learn the key idea behind the greedy algorithms, you may feel that they represent the algorithmic Swiss army knife that can be applied to solve nearly all programming challenges in this course. But be warned: with a few exceptions that we will cover, this intuitive idea rarely works in practice! For this reason, it is important to prove that a greedy algorithm always produces an optimal solution before using this algorithm. In the end of this module, we will test your intuition and taste for greedy algorithms by offering several programming challenges.

Les

# **Learning Objectives**

- Practice implementing greedy solutions
- · Build greedy algorithms
- Create a program for changing money optimally
- Create a program for maximizing the value of a loot
- Create a program for maximizing the number of prize places in a competition

∧ Less

# Introduction

Practice Quiz: Puzzle: Largest Number 4 questions

Resume

- ▶ Video: Largest Number 2 min
- Practice Quiz: Puzzle: Car Fueling 5 questions
- ▶ Video: Car Fueling 7 min
- ▶ Video: Car Fueling Implementation and Analysis 9 min
- ▶ Video: Main Ingredients of Greedy Algorithms 2 min
- Practice Quiz: Greedy Algorithms 3 questions

## **Grouping Children**

- **▶ Video:** Celebration Party Problem 6 min
- ▶ Video: Efficient Algorithm for Grouping Children 5 min
- ▶ Video: Analysis and Implementation of the Efficient Algorithm 5 min

# Fractional Knapsack

▶ Video: Long Hike 6 min