COSC 302: Analysis of Algorithms — Spring 2018
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Problem Set 8 — Greedy Algorithms and Dynamic Programming I
Due by 4:30pm Friday, April 6, 2018 as a single pdf via Moodle (either generated via LaTeX, or concatenated photos of your work). Late assignments are not accepted.

This is an *individual* assignment: collaboration (such as discussing problems and brainstorming ideas for solving them) on this assignment is highly encouraged, but the work you submit must be your own. Give information only as a tutor would: ask questions so that your classmate is able to figure out the answer for themselves. It is unacceptable to share any artifacts, such as code and/or write-ups for this assignment. If you work with someone in close collaboration, you must mention your collaborator on your assignment.

Suggested practice problems, from CLRS: 15.1-4, 15.1-5; 15.3-3; 15.3-5; 16.2-1; 16.2-4; 16.2-5

1. **(Worth 10 points)** Problem 16-1 from CLRS. Note that k is a set of coins that can be used to make change sorted in decreasing order.

```
1: function MAKE-CHANGE(n)
2:     i ← 1
3:     c_o = −∞
4:     while i ≤ k.length do
5:         c = MAKE-CHANGE(n − k[i])
6:         if c_o < c and c ≤ n then
7:             c_o = c
8:         i ← i + 1
```

2. Problem 15.1-2 from CLRS.

3. Problem 15.1-3 from CLRS.