CSE 565	Martin Fürer	Algorithm Design and Analysis

Assignment 7 Given: 10/10/18 Due: Wednesday 10/17/18

Exercises

Exercises are for your own practice. Don't hand them in.

1. Your input is a sequence of integers $a_1, \ldots, a_n$. Some are positive and some are negative. Determine L and R with $1 \leq L \leq R \leq n$ such that $\sum_{i=L}^{R} a_i$ is maximal. Find a linear time algorithm to solve this problem.

2. Solve Exercise 1, Chapter 6 on page 312 of the Textbook.
   (Maximum weighted independent set on a path)

3. Solve Exercise 2, Chapter 6 on page 313 of the Textbook.
   (High-stress, low-stress selection)

Problems

Problem solutions have to be handed in. A subset of them will be graded.

1. [5+10+5=20 points] (Longest path)
   Solve Problem 3, Chapter 6 on page 314 of the Textbook.

   (c) What is the best running time you can achieve in terms of the numbers m and n of edges and vertices respectively?

2. [20 points] (Partition a string into words)
   Solve Problem 5, Chapter 6 on page 316 of the Textbook.

3. [20 points] (Buy and sell)
   Solve Problem 7, Chapter 6 on page 318 of the Textbook.