CS180 Fall 19 Homework 6

assigned 11/20, due 11/27

All algorithms/proofs should be in bullet form: step by step or psuedo code.

1. Exercise 19 on page 329

2. Exercise 22 on page 330

3. Exercise 24 on page 331

4. Exercise 7 on page 417

5. Exercise 9 on page 419

6. Given a sequence of numbers find a sub-sequence of alternating order, where the sub-sequence is as long as possible. (that is, find a longest sub-sequence with alternate low and high elements). As always, prove the correctness of your algorithm and analyze its time complexity.

   Example Input: $8, 9, 6, 4, 5, 7, 3, 2, 4$
   Output: $8, 9, 6, 7, 3, 4$ (of length 6) because- $8 < 9 > 6 < 7 > 3 < 4$