CS577 Assignment 6

Due on Monday 7/16

1. Given two text strings A = $a_1a_2...a_m$ of length m and B = $b_1b_2...b_n$ of length n, you want to convert A into B with a minimum number of total operations of the following types:
   - delete a character from A,
   - insert a character into A, or
   - change some character in A into a new character.

   Examples:
   (1) A = "geek", B = "gesek". Optimal result: 1 - by inserting a 's'.
   (2) A = "Sunday", B = "Saturday". Optimal result: 3. Last three and first characters are same. So we just need to convert “un” into “atur”: replace ‘n’ with ‘r’, insert ‘a’ and ‘t’.

   Design a dynamic programming algorithm. Note that you should first derive the recurrence formula, then write the iterative algorithm to find the minimal number of total operations for conversions, and write the algorithm to display the detailed operations (i.e. delete, insert, or replace).

2. Chapter 6, Q 14 in the textbook (pp. 324-325)

3. Chapter 6, Q 25 in the textbook (pp. 332-333)