Assignment 1

EE 368 Data Structure   **Spring 2018**

Assigned Date: 1/11/2018
Due Date:1/18/2018

Q1. A **lower triangular** array a is an n-by-n array in which
a[i][j]= = 0, if i < j. What is the maximum number of nonzero
elements in such an array? How can these elements be stored
sequentially in memory? Develop an algorithm for accessing
a[i][j], here i > = j. Define an **upper triangular** array in an
analogous manner and do the same for such an array as for the
lower triangular array.

Q2. Transform each of the following expressions to prefix and
postfix.
(a) (A + B) * (C $ (D - E) + F) - G
(b) A + (((B - C) * (D - E) + F) l G) $ (H - J)

Q3. Transform each of the following prefix expressions to infix.
(a) + + A - * $ B C D / + E F * G H I
(b) + - $ A B C * D * * E F G

Q4. Transform each of the following postfix expressions to infix.
(a) A B - C + D E F - + $
(b) A B C D E - + $ * E F * -

Q5. Apply the stack-based expression evaluation algorithm to
evaluate the following postfix expressions.
Assume A= 1, B=2, C=3.
(a) A B + C - B A + C $ -
(b) A B C + * C B A - + *

Q6. Problem 4.9 on page 144 of text