



BIRZEIT UNIVERSITY

Department of Computer Science

Data Structures (Spring 2016/2017)

Assignment# 2 Due Date: Saturday (15 April 2017)

A file contains a set (unspecified number) of equations, each two equations (separated by the symbol =) are located in one line. Build an application that reads all lines in this file and check if each equation is valid or not (see examples below), if both equations in the line are valid, then convert them to the postfix format, evaluate them, and check if they have the same value.

Valid equation:

$2*(2-5)+4-[9*3*(7-2)]$

$2*(2-5)+4-[9*3*(7-2)$ // invalid because of [without close

$2*(2-5)4-[9*3*(7-2)]$ // invalid because of (2-5)4 there is no operator

$3*(6-3) = 4 + 6-1$... both equations are valid and the result is True

To Do:

1. Print the valid equations in the format:
[Postfix (eq1) = result(eq1)] =? [Postfix (eq2) = result(eq2)] -> False
[Postfix (eq3) = result(eq3)] =? [Postfix (eq4) = result(eq4)] -> True
[Postfix (eq7) = result(eq7)] =? [Postfix (eq8) = result(eq8)] -> False
....
2. If a line contains one or two invalid equations, print both equations in the following format:
Eq5 -> Invalid
Eq6 -> valid -> result (Eq6)
Eq9 -> Invalid
Eq10 -> Invalid
3. Print all input equations to a file, for each one state whether it is valid or not, and if it is valid, print out the postfix format the result.

Your program should show an appropriate menu to the user that shows the program's available functions. The user then should select an option accordingly.

The deadline to submit this assignment through Ritaj is on Saturday 15 April 2017. Late submissions will not be accepted for any reason. Please make sure that your application is running properly on your laptop before the lecture. Project discussions will take place in the lecture room on Tuesday, 18 April 2017.

Good luck!