Homework 7
CMPU102 – Spring 2017
Due: Thursday, April 27th

Exercise on Matching Openers and Closers

For this homework, you will implement a program that determines whether (, [, {, and < *(openers)* are nested properly and whether they match),], }, and > *(closers)* properly on each input line. Your file should read lines from a text file, line by line, and test if pushing all the openers on a stack and matching the closers by popping the openers from the stack balances the openers and closers on each line.

Download the zipped folder Matcher and unzip to find starter file Matcher.java. The downloaded folder should also contain CharStack.java, acm.jar, and text file braces.txt. The Matcher.java file extends the DialogProgram class of the acm.program package (note the import statements at the top of the file). This means that the main method must create an object of its own type and then call start() on that object. This creates a callback to the run method.

When you download this folder, the programs should compile and, if you type braces.txt in when asked for a filename, it should read each line and report that each line is balanced (which is obviously not true for some of the input lines).

There are 2 tasks given in the starter file. After you are done implementing both methods, your program should accurately report which lines in the text file have balanced openers and closers.

The output from running the starter file in the interactions window should look like this:

Clean String is (()()(){})
Clean String is (2 + ((3*4) - 4))
Clean String is ()
Clean String is ()<>{}[]
Clean String is)))))))))
Clean String is (((((((((
Clean String is public static void main(String[] args)
Clean String is ([])
Clean String is ()
Clean String is <<<{{}}>>>

Note that your program should produce "clean strings" composed solely of openers and closers as shown below:

Clean String is (()()(){})
Clean String is ((()))
Clean String is ()
Clean String is ()<>{}[]
Clean String is)))))))))
Clean String is (((((((((
Clean String is ([])
Clean String is ([])
Clean String is ()
Clean String is <<<{{}}>>>

Submit your zipped folder on our Moodle page when you are finished.