Lab 15

File IO

Objectives of this Lab:

- Learn the basics of file input/output (I/O)
- Learn how to read a file using Scanner
- Learn how to write a file using PrintWriter

Introduction

Make a new project and class in Eclipse called R16, with a main method. Download the data file from [here](). Set up the Run Configuration so that R16 has the program arguments:

```
input.txt output.txt
```

This is the same as reading command line arguments from the terminal. Create two methods with the following signatures:

```
public void readFile( String inputFile ){ }

public void writeFile( String outputFile ){ }
```

Within the main method, call the readFile method with the first command line argument (args[0]), then call the writeFile method with the second command line argument (args[1]).

Lab Assignment

Implement the readFile method to open the input file, print the type of the next token (string separated by white space or punctuation) and the token itself, as shown below. Your code should read tokens until the end of the file is reached, and it should close the file when finished. Handle the data types integer, double, and string. Exceptions should be handled as shown in class and in the recitation. Make sure your program

successfully reads the input values and prints them. Remember that some types can be upgraded from a lower type to higher type. The output from the provided file (input.txt) should exactly match the following:

```
String: And
String: you
String: feel
String: that
String: you
String: have
String: exerted
String: your
String: very
String: best
String: efforts
String: in
String: the
String: matter,
String: do
String: you?
String: That
String: you
String: have
String: exercised
String: all
String: of
String: your
String: considerable
String: ingenuity?
String: Albus
String: Dumbledore
String: to
String: Harry
String: Potter
Integer: 1
Double: 0.1
String: @
Integer: 12
Double: 0.123
String: $
Integer: 123
Double: 0.1234
String: %
Integer: 1234
Double: 0.12345
String: ^
Integer: 12345
String: &
String: FALSE
String: TRUE
String: Computer
String: Science
Integer: 13579
```

```
String: ~
Double: 999.98
String: Whatever
String: A
String: B
String: C
```

Testing

Implement the writeFile method to open the output file, prompt the user with "Enter text:", then read input from the user via the keyboard, print the input to the file, and close the output file. When the user types stop (uppercase or lowercase) by itself on its own line, the method should terminate.

Given this input from the console:

Enter text:

Hello! Here are some words.

stop can be written here, but it still makes it in.

so will this stop.

stop!

stop

The output file should exactly match the following:

Hello! Here are some words.

stop can be written here, but it still makes it in.

so will this stop.

stop!

Turn In

Show your work to your TA before submitting to GitHub. Submit all of your files with correct headers to GitHub here: