CPSC 1061 – Introduction to Programming in Java Lab

Spring 2021

Lab 5 – Due Monday, February 15, 10:00pm

1   Introduction and Lab Objectives

In this lab you will practice writing short Java programs with a focus on mathematical methods, characters, and strings. The objectives of this lab are to write Java programs that:

1. use mathematical methods

2. use characters and methods that can be applied to characters

3. use Strings and methods that can be applied to Strings

The lab today can be performed in groups of two. Do not just tell each other solutions but always make sure that your lab partner also understands why something does or does not work.

Have fun!

2   Main

2.1   General Instructions

At the start of each program, write your name, the name of your lab partner, the course and lab, the date, and a description of what your program does as in the previous lab. In this lab as well as in all following labs, each program needs to have comments (not just at the beginning), to be clean, and to compile. Furthermore, any input and output should be designed to have appropriate instructions and sentences.

2.2   Maximum.java

Write a program that asks the user for two numbers (integers). Return the maximum of the numbers. Use the max() method.

2.3   RandomLetter.java

You have learned in class how to print out a random number within specific limits (e.g., between 20 and 50). You have also learned how to cast a variable of type char into a variable of type int. Use this knowledge we learned in class to write a program that prints a random lowercase letter.

2.4   CharInfo.java

next . charAt (0)

Write a program that asks the user for a character and displays various information about it:

- if it is a letter or not

- for the case when it is a letter, if it is an uppercase or lowercase letter

- if it is a digit or not

- its Unicode code

For the value in Unicode, there is a much simpler solution than to reprogram the ASCII table, so use that simpler solution. Do not reprogram the ASCII table.

↳▷double backslash

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2.5   WordInfo.java

Write a program that asks the user for a word and displays various information about it:

- the length of the word

- the first letter

- the last letter

- if the word is "aardvark" or not   *equals ( )*

- if the letter 'e' is in it   *indexOf ( )*

Use the methods for String objects that we learned in class to write this program.

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2.6   Capitalize.java

Write a capitalizer, a program that asks the user for a word, and returns the word with the first letter being capitalized. Print an error message if the user types something that does not start with a letter.

2.7   Submit Files

Make sure to test your java files on the lab machines. Create a single zip-file that includes all the java files (and no other files) and submit the zip-file to Canvas.