

LABORATORY ASSIGNMENT № 1

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09/03/2019

Familiarization with Your Programming Environment

Learning Objectives

1. Using the Netbeans IDE
2. Using the *println* Method
3. Successive Concatenation of String Literals

During the laboratory exercises in this course, you will use the Netbeans Integrated Development Environment (IDE) to write and test your program. You will also archive your source code in a zip file and submit your work via a digital dropbox for grading. In today's lab, you will experiment with the use of the *println* method of the *PrintStream* class. You will also experiment with generating a String literal by successive concatenations and then outputting it. Be sure to follow all the standards given on the programming style guidelines and discussed during the lectures.

The *StaircasePrinter* Program

Start the Netbeans IDE. Create a project using the following menu options: *File | New Project*. If they are not already selected, select *Java* in the *Categories* pane and *Java Application* in the *Projects* pane. Click the *Next* button at the bottom of the frame. In the *Project Name* field, type *StaircasePrinter*, the name of the Java class containing your program. Leave the defaults for all other fields and click the *Finish* button. Netbeans will automatically generate some starter code for your program.

Listing 1: StaircasePrinter.java

```
package staircaseprinter;
/**
 * This program displays a text-based representation of a staircase <br>
 * in two ways. First, it displays the staircase by using a series of<br>
 * 'println' statements. Second, it uses one 'println' statement to<br>
 * display the staircase a second time.
 * CSC 1350 Lab # 0<br>
 * @author YOUR NAME
 * @since DATE THE PROGRAM WAS WRITTEN
 * Course: CSC 1350 Section: YOUR SECTION NUMBER
 * Instructor: Dr. Duncan
 */
```

```
public class StaircasePrinter
{
    public static void main(String[] args)
    {

    }
}
```

Modify the starter code as described below:

1. Remove all Netbeans auto-generated comments from the starter code and add Javadoc header comments as shown above. Also, remove any auto-generated comments from the body of the main method. After these modifications, your program should be as shown above. Run the program. Observe that it generates no output since the main method does not have any statements.
2. Add a series of 'println' statements in the main method so that it produces the output shown below with each line beginning with a three-character indentation. Use one 'println' statement per output line. You will need to use several +, - and | characters to display the staircase. Write the 'println' statements in such a way that the output can readily be determined prior to running the program.

Listing 2: Text-based Rendition of a Staircase

```

      +---+
      |   |
    +---+---+
      |   |   |
    +---+---+---+
      |   |   |   |
    +---+---+---+---+
      |   |   |   |   |
    +---+---+---+---+

```

If you did things correctly, your main method will consist of nine println statements. Recall, a string literal is displayed exactly as enclosed in the double quotes. Run the program and verify that it displays a staircase as shown in Listing 2.

3. Add a tenth println statement to your program that displays a blank line followed by the staircase shown in the diagram. Recall that the `\n` escape sequence when enclosed in a string literal, advances the cursor to the next line when the string is displayed. In order to do this, you will need to use a series of successive concatenations of String literals. Each of the String literals that you concatenate should represent one line of output. Write the 'println' statement across multiple lines so that the string literals are aligned in such a way that its output can be readily determined prior running the program.

```

      +---+
      |   |
      +---+---+
      |   |   |
      +---+---+---+
      |   |   |   |
      +---+---+---+---+
      |   |   |   |   |
      +---+---+---+---+
      |   |   |   |   |
      +---+---+---+---+

      +---+
      |   |
      +---+---+
      |   |   |
      +---+---+---+
      |   |   |   |
      +---+---+---+---+
      |   |   |   |   |
      +---+---+---+---+
      |   |   |   |   |
      +---+---+---+---+

```

Compiling and Running The Program

To run your Java application in Netbeans, select *Run | Run Main Project* from the Netbeans menu or, alternatively, click the green ▶ button in the menu bar. Whenever your program runs, Netbeans automatically saves it and displays the output in the output frame at the bottom of the Netbeans window.

Archiving and Submitting the Program

Using windows explorer, navigate your way to the "My Document" folder. Navigate your way through the following path: *NetBeansProjects | StaircasePrinter | src | StaircasePrinter*. You will see a file called *StaircasePrinter.java*, your source code. Right-click the source file and choose *Send to | Compressed (zipped) folder* from the pop-up menu. Rename the zip file *PAWSID_lab00.zip*, where *PAWSID* is the prefix of your LSU/Tiger email address - the characters left of the @ sign. Double-click the zip file to view its contents. Verify that it contains a copy of the *StaircasePrinter.java* file. Drag the zip file to your desktop. Upload the zip file to the drop box set up on Moodle for the submission of the lab.