CSC 402-01 Assignment #1

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Original Due: 3:00 PM, Monday, February 14
    Extended: 3:00 PM, Monday, February 21
```

You must complete this assignment by yourself. You cannot work with anyone else in the class or with someone outside of the class. You are not allowed to copy solutions from the world wide web. The code you write must be your own.

Provided File:

- A1.java – a shell file.
- w2.txt – the required output for SIZE 2 (Mac/Linux users should use m2.txt)
- w3.txt – the required output for SIZE 3 (Mac/Linux users should use m3.txt)
- w4.txt – the required output for SIZE 4 (Mac/Linux users should use m4.txt)
- w5.txt – the required output for SIZE 5 (Mac/Linux users should use m5.txt)
- w6.txt – the required output for SIZE 6 (Mac/Linux users should use m6.txt)
- w7.txt – the required output for SIZE 7 (Mac/Linux users should use m7.txt)

Description: Create a program that produces an ASCII art representation below. The output will vary based on a constant in the program. By simply changing the constant the output will change (somewhat) dramatically. Your program must match the outputs shown for the given value of the SIZE constant exactly.

Here is the program output with the constant named SIZE set to 2.

```
..........###..........
.........:::.........
.........:::.........
..........###..........
........~~~~~~~........
........|-@-@-|........
........~~~~~~~........
........|-@-@-|........
........~~~~~~~........
/"#"#"#"#"#"#"#"#"#"#"\
/"#"#"#"#"#"#"#"#"#"#"\
```

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When the SIZE constant is changed to 3, the following output is produced:

```
.............#####.............
.............:::::.............
.............:::::.............
.............:::::.............
.............:::::.............
.............#####.............
............~~~~~~~~~...........
............|-@-@-@-|...........
............~~~~~~~~~...........
............|-@-@-@-|...........
............~~~~~~~~~...........
............|-@-@-@-|...........
............~~~~~~~~~...........
............|-@-@-@-|...........
............~~~~~~~~~...........
............|-@-@-@-|...........
............~~~~~~~~~...........
............|-@-@-@-|...........
............~~~~~~~~~...........
/"#"#"#"#"#"#"#"#"#"#"#"#"#"#"#"\
/"#"#"#"#"#"#"#"#"#"#"#"#"#"#"#"\
/"#"#"#"#"#"#"#"#"#"#"#"#"#"#"#"\
```

- You will need to create (nested) *for*-loops with *print* and *println* statements that use the *class* constant and local variables.

- You are not allowed to use anything <u>besides</u> *println*/*print* statements, *static* methods, method calls, loops, nested loops, local variables, and *class* constants.

- **You are NOT allowed to use method parameters, methods that return values, or conditional statements (i.e., if, if/else statements).**

- You must use *static* methods to structure your solution.

- You must avoid significant code redundancy and provide structure to your program in such a way that the methods match the structure of the output itself.

- You are required to properly indent your source code and will lose points if your indenting is not readable and consistent.

- You should localize variables whenever possible. Do not alter any part of the following line except the actual literal *int* you use such as 2, 3, 4, 5, and so forth. The SIZE constant will always be greater than or equal to 2.

```
public final int SIZE = 3;
```

- On any given execution your program will produce just one version of this figure, but it should be possible to change the value of the *class* constant to have your program produce a figure of a different size. Attached are files with the correct output for size 2, size 3, size 4, size 5, size 6, and size 7. Your output must match these "exactly" for a given size or you will lose points for correctness. Use a diff tool to ensure your program produces the correct output.

- Note that the last line of the drawing is printed out with a *println* statement.

- You must use the shell file for this assignment. The shell file contains placeholders (below) that indicate where you have to fill in your code.

```
//----------------------------------------
// Fill in your code here



//
//----------------------------------------
```

Submission: your **A1.java** file

General Programming Assignment Requirements:
- Classes must be in the default (no package statement) unless otherwise specified. You will lose 20 points (all points) if you put a package statement in your program.
- If your program does not compile or does not run, you will lose all points.
- If you submit the wrong file, you will lose all points.
- You must fill in the header for every file you submit or you may lose points.

Checklist: Did you remember to:
- work on the programming assignment individually?
- fill in the header in your file **A1.java**?
- ensure your program does not suffer a compile error or runtime error?
- ensure your program creates the correct output and that it matches the expected output exactly?
- properly indent your source code so that your indenting is readable and consistent?
- use good names for variables to make your program easy to understand?
- ensure your program has a *class* constant that when changed produces the appropriately sized figure?
- ensure your program does not use any programming constructs besides println/print statements, static methods, method calls, loops, nested loops, local variables, and class constants?
- create a logical, structured solution that is easy to understand and reduces code redundancy?
- turn in your Java source code in a file named **A1.java** through D2L?