

# CSCI-101 Programming 1

## Lab 16c

### INSTRUCTIONS

Inside your **Lab16** directory add a class named **MazeGenerator** that contains the following.

- I. A **private** and **static** field named **kb** that holds a reference to a **Scanner** that is initialized to read from the keyboard.
- II. A **private** and **static** field named **maze** that holds a reference to a 2D array of **Cell** elements and is initialized to null.
- III. A method named **printMenu** that prints to the screen the following menu:

```
[1] Load
[2] New
[3] Edit
[4] Save
[5] Exit
```

Choose an option:

- IV. A method named **printMaze** that prints the contents of **maze** to the screen as follows:
  - I. The top row contains the column numbers
  - II. Each row displays the row number followed by the glyphs of each cell in the row with spaces between them

```
    0 1 2 3 4 5 6 7 8 9
0  █ █ █ █ █ █ █ █ █ █
1  █ █ █ █ █ █ █ █ █ █
2  █ █ █ █ █ █ █ █ █ █
3  █ █ █ █ █ █ █ █ █ █
4  █ █ █ █ █ █ █ █ █ █
5  █ █ █ █ █ █ █ █ █ █
6  █ █ █ █ █ █ █ █ █ █
7  █ █ █ █ █ █ █ █ █ █
8  █ █ █ █ █ █ █ █ █ █
9  █ █ █ █ █ █ █ █ █ █
```

- V. A method named **loadMaze** that does the following:
  - Asks the user to enter a file name and reads the file name from the keyboard.
  - Creates a Scanner that can read from the file.
  - Configures the Scanner to use commas and newline characters as delimiters.
  - Reads the number of rows and columns from the file.
  - Sets **maze** equal to a new 2D array of **Cell** elements having the same number of rows and columns as the values read from the file.
  - For each code value read from the file, the program sets the corresponding element in **maze** equal to a new **Cell** element whose **code** field is equal to the value read from the file.
  - After all of the elements in **maze** have been initialized, the method calls **printMaze**.

VI. A method named **main** that repeatedly does the following until the user presses **5** to exit:

- Calls **printMenu** to print the menu to the screen.
- Read user's choice from the keyboard.
- If the users enter's **1** then the program calls **loadMaze**.