CS-224 Object Oriented Programming and Design Methodologies

Fall 2023

Homework 2

1 Submission Policy

You need to submit this homework on 17th September at 11:59pm, on LMS. Your work will not be accepted once the submission is closed on LMS.

2 Guidelines

Some important guidelines about the homework are as follows:

- You need to do this homework alone.
- You need to follow the best programming practices as given in the accompanying document and it is also present on LMS. Failure in doing so will have your marks deducted.
- Submit assignment on time; late submissions will not be accepted.
- Some assignments will require you to submit multiple files. Always Zip and send them.
- It is better to submit incomplete assignment than none at all.
- It is better to submit the work that you have done yourself than what you have plagiarized.
- It is strongly advised that you start working on the assignment the day you get it. Assignments WILL take time.
- Every assignment you submit should be a single zipped file containing all the other files. Suppose your name is John Doe and your id is 0022 so the name of the submitted file should be JohnDoe0022.zip

- DO NOT send your assignment to your instructor, if you do I will just mark your assignment as ZERO for not following clear instructions.
- You can be called in for Viva for any assignment that you submit

3 Ghost Busters

The Ghost Busters is a simple game to find position of a ghost, hidden somewhere in the grid. Initially all the blocks in grid are locked, and then the player clicks any of the block to get some information about the ghost location. Here are the rules of various objects being displayed upon click:

- A turtle is drawn if the clicked block is 0-1 blocks away from the ghost.
- A bunny is drawn if the clicked block is 2-3 blocks away from the ghost.
- A snake is drawn if the clicked block is 4-5 blocks away from the ghost.
- If the clicked block is more than 5 blocks away, a snake, turtle or a bunny is drawn randomly.

After exploring certain blocks of the game, the player finally busts the ghost with a right-click. If the ghost location was correct, then a ghost is drawn on that block else the game is failed.

4 Task

Clone the GitHub Repository for this assignment. A bare-bone implementation is given in `GhostBusters` folder which. You are only required to make changes to `GhostBusters.cpp`. Please follow the comments inside the code to write your solution. **Do not make any changes to any of the other files.** Your solution should be dynamic and should work for **any number** of rows and columns.

Note: A `Solution.exe` file of the ideal solution has been provided in your project that serves as reference for you. The solution of this game is provided along with this homework, please play this game many times to correctly understand the working. Moreover, if any rule is not clearly mentioned above or not apparent in the solution, you can implement it at your own discretion.

5 Rubric

Warnings/Errors	The code had no warnings/errors	1
Comments	The code was properly commented	1
Coding	The code followed best practices guideline	4
Game Logic	Game logic is fully implemented	4
Total		10

Table 1: Grading Rubric

6 How to compile

Open the given `GhostBusters` folder in vscode (by choosing `File` ⇒ `Open Folder`) or your chosen IDE. How to compile your assignment and run the executable are covered in the `README.md` of the assignment's GitHub repository.

7 Acknowledgement

This assignment is adapted from UCBerkeley CS188 Probabilistic Inference.