Assignment 5 – Game: Turtle in the Maze!

Title: Assignment 5 – Game: Turtle in the Maze!

This game and Assignments 4 and 5 were created by our TA Sitong Zhai! Thank you, Sitong!

Step 1 - Problem Statement:

The goal of our Assignment 4 and Assignment 5 is to complete a game in which the player (i.e., the user) moves a turtle through a maze, one cell at a time, until the turtle reaches the exit gate of the maze.

In **Assignment 4**, we set up the maze and readied our turtle to navigate through it.

In **Assignment 5**, we shall develop the "game engine", i.e., the part of the code that moves the turtle around the maze toward the exit gate.

Requirements:

- You must complete the given program **`Assignment_5.py`** on your own using the Python 3 IDLE application. You cannot use AI tools to complete **`Assignment_5.py`** nor can you use someone else's code. For more details regarding Academic Honesty (or lack of) and what is permissible and what is not, please, read **A word about Academic Honesty** under **Lecture 1** on our course web site.

What to do:

1. Download the program **`Assignment_5.py`** posted under this assignment on our course website.

   Note that the four (4) text files we used in Assignment 4

   a. `maze_1.txt`
   b. `maze_2.txt`
   c. `maze_3.txt`
   d. `maze_4.txt`

   are also used in Assignment 5.

2. Read the entire content of **`Assignment_5.py`** (comments and code) starting from the **`***Main part of the program`**, and reading each function (again, comments and code) as you encounter their call in the **`***Main part of the program`** or in other functions.

   This will take a while so plan for it. This must be done in order for you to understand what the code does and the data (variables) it utilizes.

Notice that **`Assignment_5.py`** contains the solution to our Assignment 4, i.e., the code you were asked to write for our Assignment 4 has been provided in **`Assignment_5.py`**.

3. Once you have a good understanding of the code and the data it uses, starts completing the code by following the **`Implementation Details - What you need to do:`** listed in each incomplete function.
4. If the docstring of a function states: **`***Do not modify the content of this function!***`**, then don't. This is the case for all the functions you were asked to complete in our Assignment 4. In other words, use the provided code, even for the functions you completed in Assignment 4. Otherwise, your game may not execute as expected! ☹

Testing:

- Thoroughly test your final version using each of the four data files (text files) you downloaded for our Assignment 4.

Submission:

- Submit your program **`Assignment_5.py`** on CourSys (https://coursys.sfu.ca/2024sp-cmpt-120-d3/). Click on the course activity called **Assignment 5**, then click on the option **Make Submission** on the left and finally, follow the instruction to browse for your program file.
- Note that you can submit your program as often as you wish. As long as your submissions are done before or on the due date and time, your assignment will be marked. CourSys will not stop you from submitting your program late, i.e., after the due date and time, but if your program is late, it will receive 0 marks.

How your Assignment 5 will be marked:

- When the TA marks Assignment 5, he will be looking at
    - whether your program solves the problem, i.e., your program allows the player to move the turtle from the entrance of the maze to its exit gate for all four mazes (four data files) (10 marks),
    - whether your program satisfies **all the implementation details** given in the **`Assignment_5.py`** you downloaded and any **requirements** stated in this assignment (10 marks).
- The rubric for Assignment 5 is based on the above. Make sure your program satisfies the above before submitting your Assignment 5.

Enjoy!

Finally, there are no extension granted unless for medical reason once the **Official Medical Certificate** has been completed and submitted to the instructor.