Intro. to Artificial Intelligence

Assignment 3

Bust the Ghost

Supervised by: Dr. Tajeddine RACHIDI

Prepared By: Kenza Rchi and Asma Dalil

Table of content :

I. Introduction:

For our third project , my teammate Asmae Dalil and I implemented/reproduced "Bust the Ghost" game.

We explore the 8x 20 grid according to prior distribution of Ghost over location P(Ghost) While exploring the grid in order to find the ghost and to bust it , the Sensor readings tell how close a square is to the ghost

- On the ghost: red
- 1 or 2 away: orange
- 3 or 4 away: yellow
- 5+ away: green

II. Language and used tools:

- To achieve the purpose of the game, we used C # in order to implement the game as well as all the inference rules .
- C# (C-Sharp) is a programming language developed by Microsoft that runs on the .NET Framework. C# is used to develop web apps, desktop apps, mobile apps, games and much more.

- **Unity:**

We used Unity to create the 8x 20 grid.

Unity is a cross-platform game engine developed by Unity Technologies. The engine has been continuously expanded to accommodate a wide range of platforms, including PC, mobile, console, and virtual reality. It's especially popular for iOS and Android game development, with titles like Pokémon Go, Monument Valley, Call of Duty: Mobile, Beat Saber, and xCuphead utilizing it. It is popular for independent game creation and is considered simple to use for new developers.

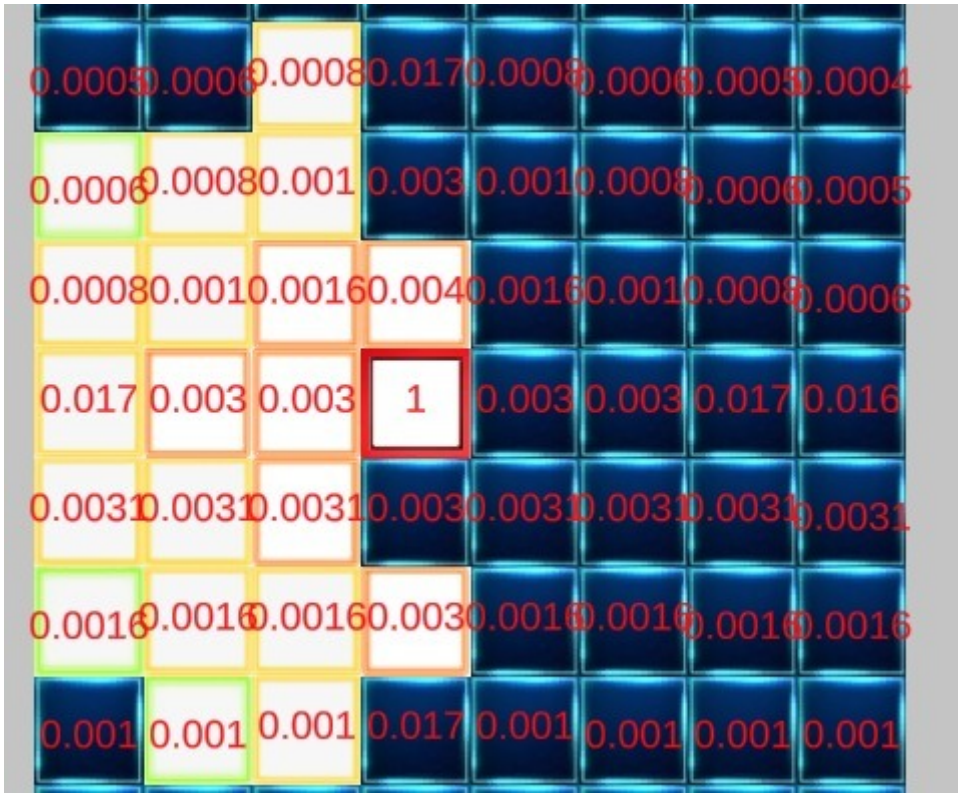
III. Development Approach:

While exploring the grid , we use the function JointTableProbability

- **Conditional probability distribution :** Probability definition :

We use probability P(Color/Distance from Ghost),

The following table is an example of the calculation we implemented , If the ghost is 3 cells away :



P(red | 3)	P(orange | 3)	P(yellow | 3)	P(green | 3)
1	0.003	0.001	0.001

Project constraints and difficulties:

- **Unity**

While working and running the code, Unity has heavy implementations that prevented us to save more time while working on the project.

- **Future implementations :**

We tried to implement the important parts of the project .However, if we had more time, we would have conduct it to work on the UI/UX, we already tried to implement a function that shows a certain image after any success or failure attempt, yet for some reason they are not working appropriately, we still need to debug our c# code and upload an update of our implementation.

- **The pictures in question:**

Demo:

https://www.youtube.com/watch?v=ynYMnrMsdkc