Intro. to Artificial Intelligence

Assignement 3

"Bust the Ghost" game.

Supervised by: Dr. Tajjeeddine RACHIDI

PREPARED By: Asma Dalil

Kenza Rchi

Table of content :

I. Introduction :

For our third project , My teammate Kenza Rchi and I developed an intelligent agent to find solution for different states of the « Bust the Gost » game . We explore the 8x 20 grid according to prior distribution of Ghost over location P(Ghost) While exploring the grid in rder 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 tool used

To acheive the purpose of the game, we used C # in order to implement the game as well as all the inference rules .

- C #

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.

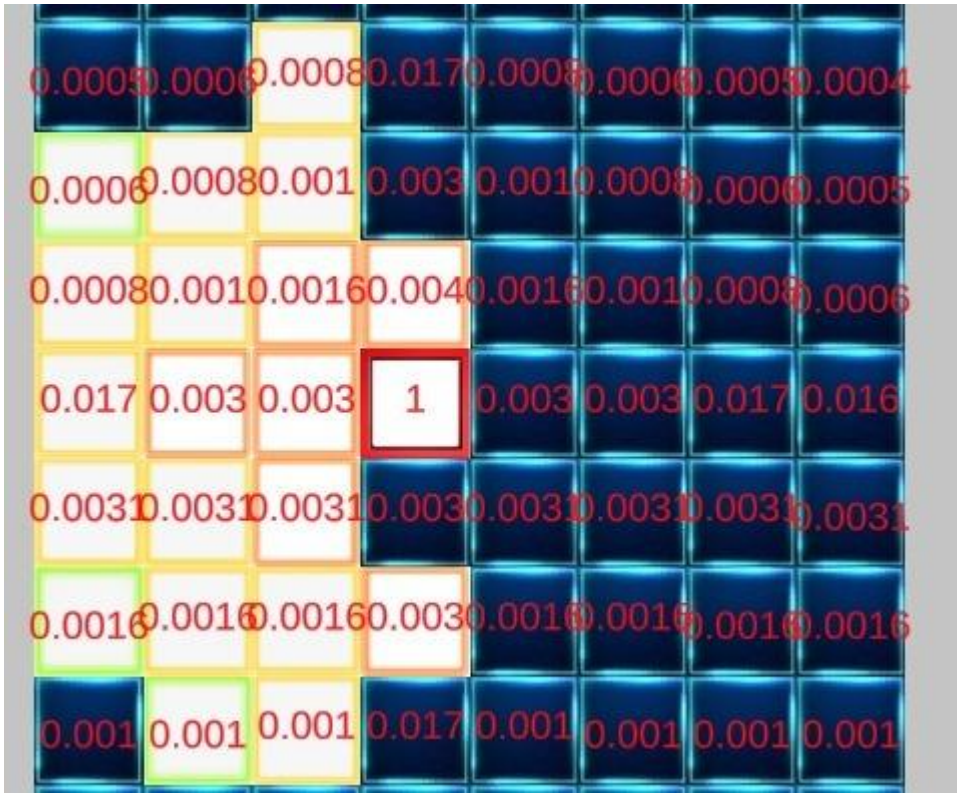
III. Project procedures :

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 and 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 whish preventred as to save more time while working on the project.

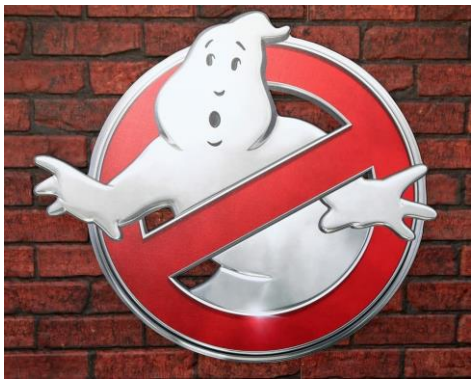
- **Probability :**

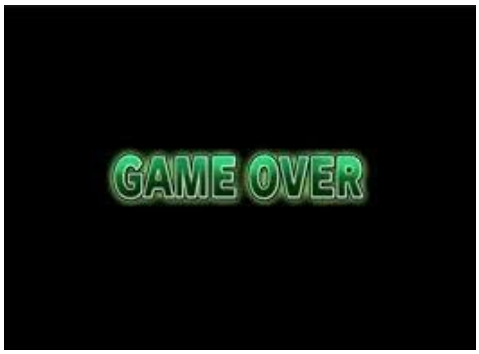
Since both of us, Kenza and I , did not take the pobability course we found a problmem to adapt to the logic of teh baye s theorem and to apply the rule in the probibility function in this project.

Future implementations :

We tried to implement the important phases of the project .However, If we have more time, we will conduct it to work on the mêmes (pictures) that shows after any success or failure attempt. Indeed, we added them in the Unity , yet for some reason , they do not show as they expected.

The pictures :





Game trial :

Video link :

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

Asma Dalil **"Bust the Ghost" game.**