جامعة الأخوين

ⵜⴰⵙⴷⴰⵡⵉⵜ ⵏ ⵓⵅⴰⵡⵉⵏ

AL AKHAWAYN UNIVERSITY

Assignment 3: Bust The Ghost

Mohammed Khalil Ghali: 76368
Noureddine Amraoui : 81051

Dr. Tajjeeddine Rachidi

Link to my GitHub Repository:
https://github.com/khalil-ghali/Bust-The-ghost

Link to YouTube Video:
https://www.youtube.com/watch?v=Ygh5nJ8l3_o

In this project, we play a game in which we click a cell on the grid and a color appears (red may indicate the position of the ghost, orange one or two cells away, yellow three or four cells away, green five or more cells away) that will take us to the ghost's location and bust it to win the game.
In this game we will use 5 C# scripts: Game.cs which will contain all the functions necessary tu run the program, Tile.cs containing the grid variables, WinLose.cs which contains the rules to win or lose a game, ProbabilityText.cs as a text displaying function and Gameoverscreen.cs to generate the game over image.
The script Game.cs contains a function to place the ghost at a random location, a function to to take a color and a distance as inputs and returns a probability, a function that places all the colors in accordance with the joint probability function, a function that checks the last clicked cell and changes all probabilities using the provided Bayesian equation P(ghost) = (JointProbability(color, distance)*P(ghost|click))/P(color) with P(color) = Numberofcoloredcells/160 and P(ghost) defined from the joint probability table. With 160 as the multiplication of our x:20 and y:8 so when we are close the probabilities gets higher as we can see in the following screenshots.

The win or lose is determined by getting the last checked position and comparing it to the ghost position.

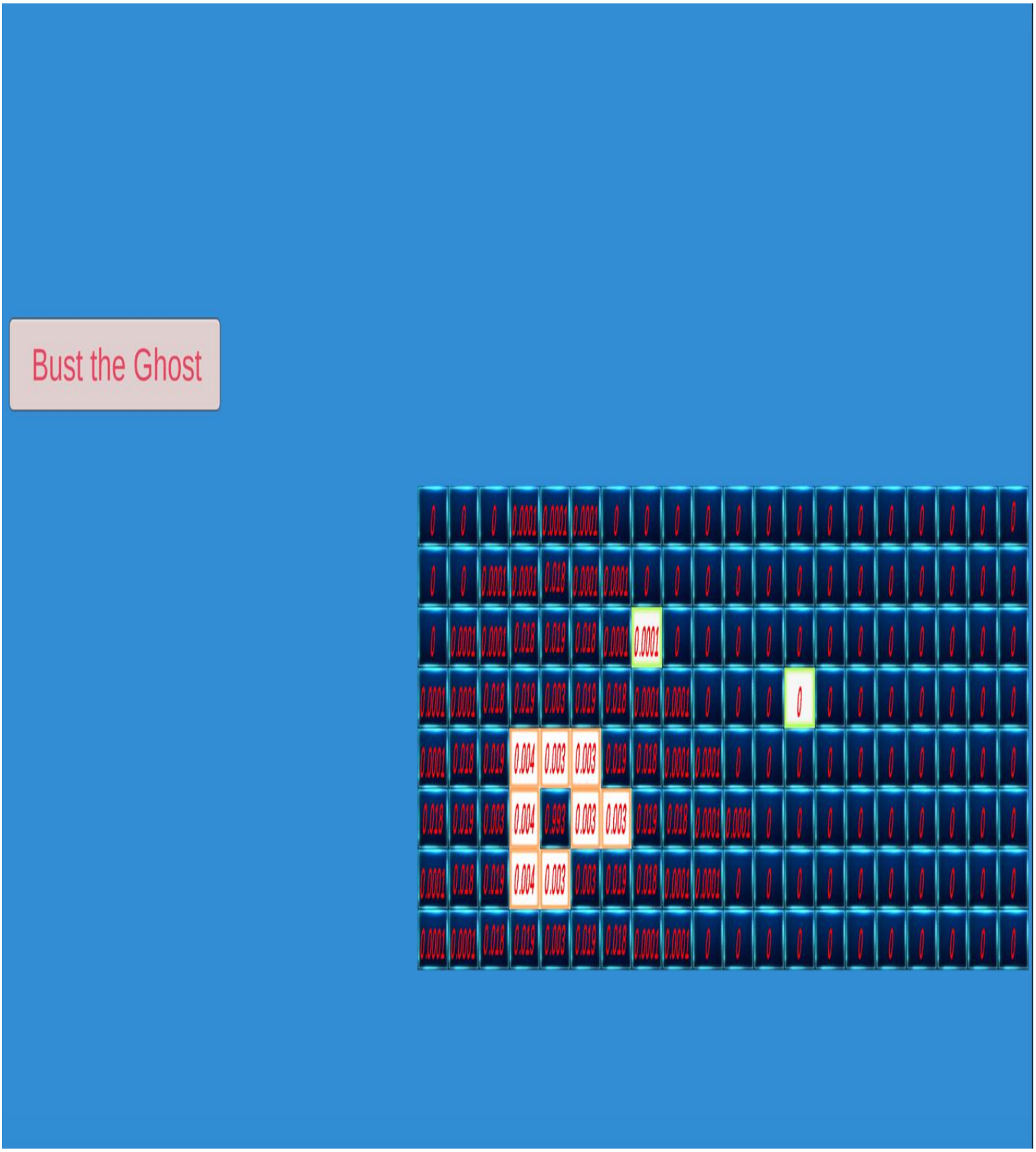

Figure1: distribution of probabilities across the grid.

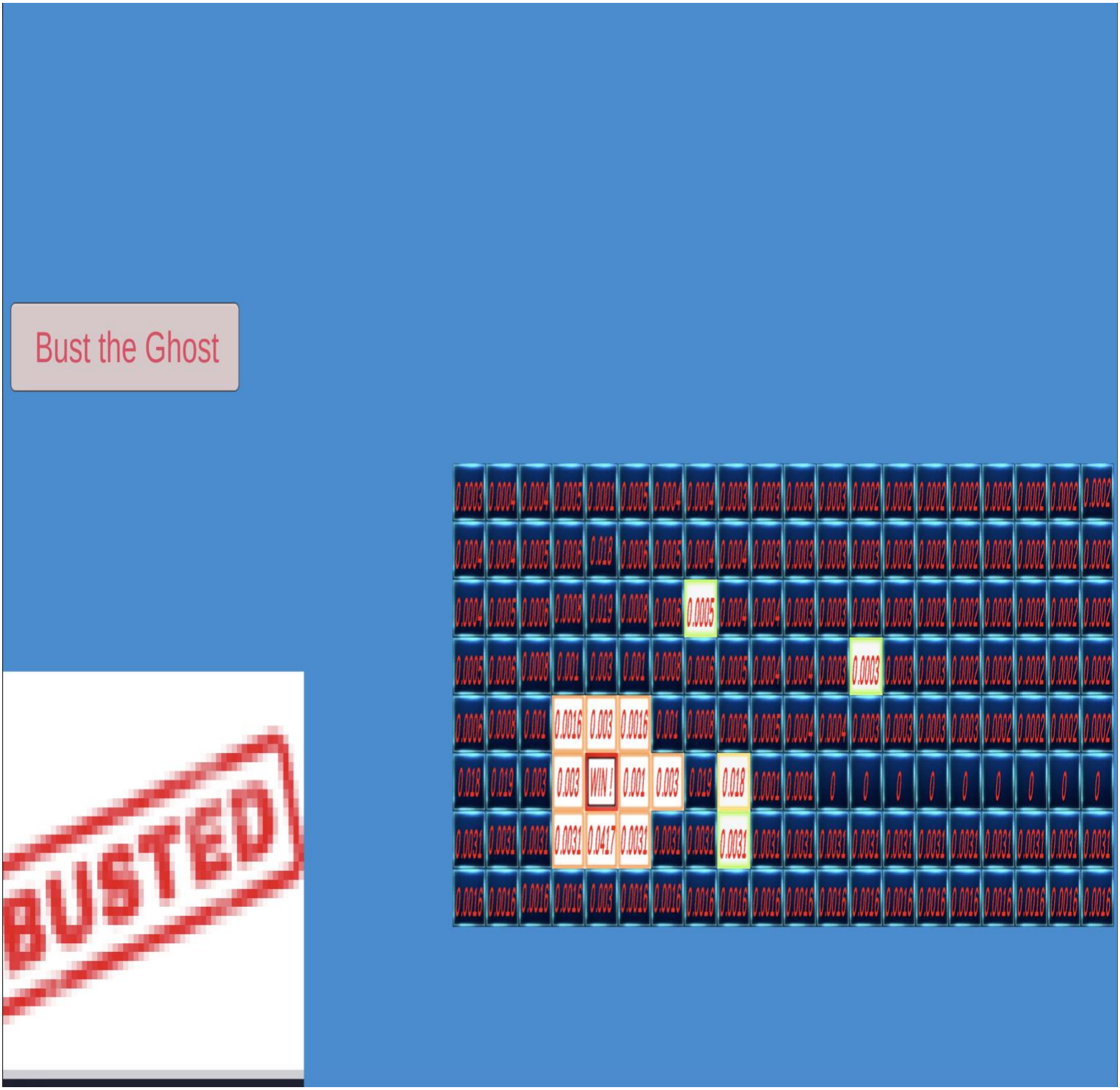

Figure 2: Busting the ghost when we see the highest probability

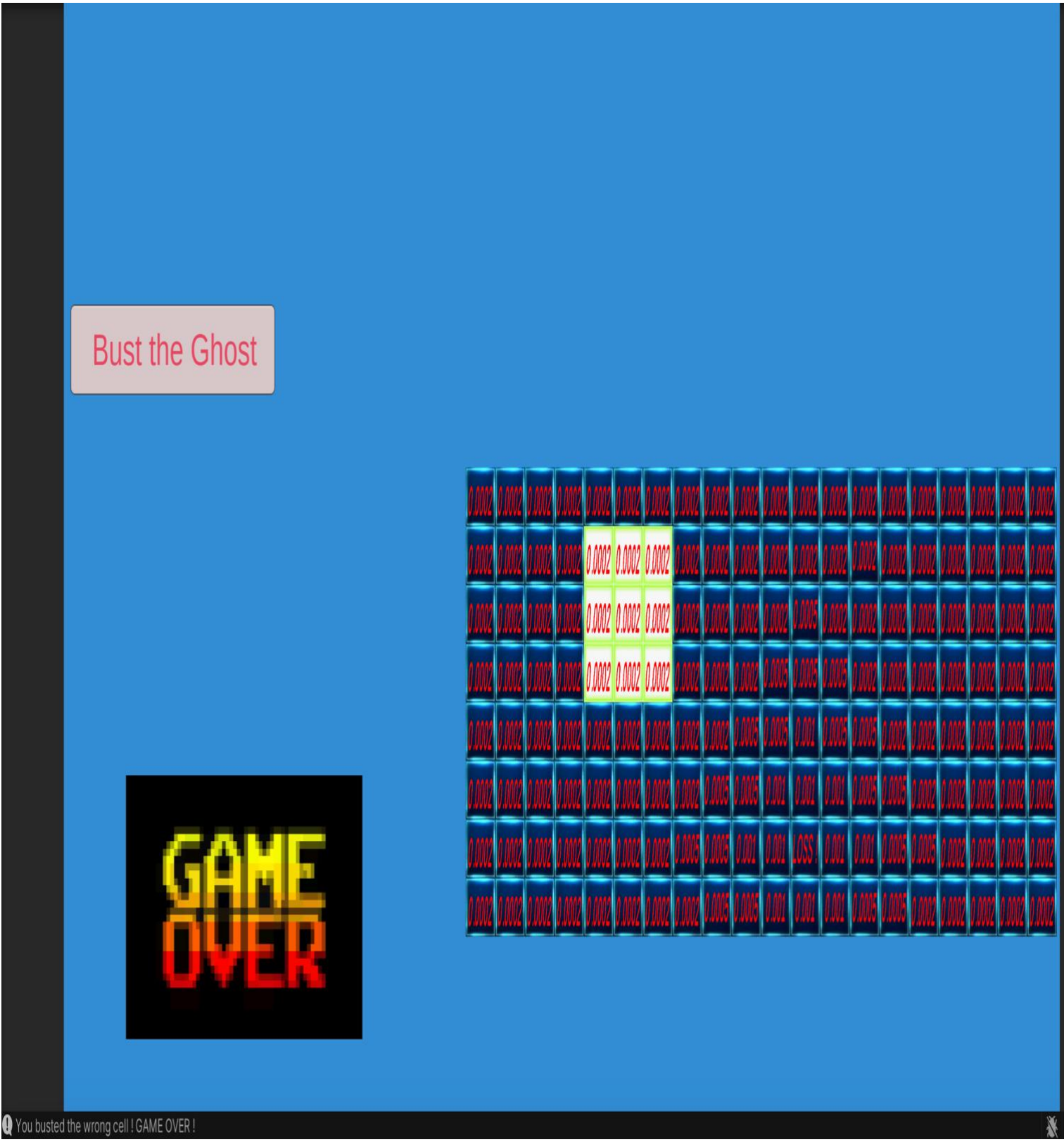

Figure 3: game over when busting the wrong cell.