

2D Dodge Game Development



Report/Assignment No. 1

CSI422: Computer Graphics Lab

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1 | Game Description

The game is a 2D game developed using C++ and the OpenGL Utility Toolkit (GLUT). The game features two types of entities: enemies and agents. There are two enemies and two agents in the game. The enemies move in a specific pattern within a defined border. The objective of the game is to avoid the enemies for as long as possible. The longer we can keep our agents safe, the higher our score will be. The game ends when an agent comes into contact with an enemy.

2 | Game Playing Guideline

2.1 | Objective

Our primary objective in the 2D Dodge Game is to control both Agent A and Agent B effectively to avoid collisions with the enemy objects that move continuously within the game's boundaries.

2.2 | Controls

- Agent A, represented by a green circle, can be moved using the arrow keys.
 - Left Arrow: Move Agent A to the left.
 - Right Arrow: Move Agent A to the right.
 - Up Arrow: Move Agent A upwards.
 - Down Arrow: Move Agent A downwards.
- Agent B, also represented by a green circle, can be controlled using the 'l', 'r', 'u', and 'd' keys.
 - 'l': Move Agent B to the left.
 - 'r': Move Agent B to the right.
 - 'u': Move Agent B upwards.
 - 'd': Move Agent B downwards.

2.3 | Gameplay

- The game features a boundary represented by a rectangle. We should stay within this boundary.
- Two enemy objects, Enemy 1 and Enemy 2, move continuously within the game boundary in predefined patterns.
- Agent A and Agent B should avoid collisions with the enemies. Colliding with an enemy will result in the destruction of the agent, and the game will end.
- The game keeps track of score, which increases over time.

2.4 | Scoring

- Score increases as time passes while we successfully avoid collisions.
- The longer we survive without collisions, the higher our score.

2.5 | Game Over

- The game will conclude if either Agent A or Agent B collides with one of the enemy objects.
- When the game ends, your final score will be displayed on the console.
- At this point, We can choose to restart the game and attempt to achieve a higher score.

2.6 | Game Window

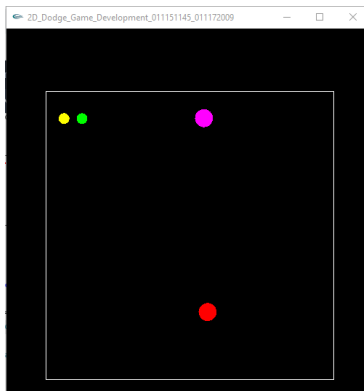
- The game window displays a graphical representation of the game boundary and the agents and moving enemies.
- The game area is enclosed by a rectangular border.

2.7 | Game Features

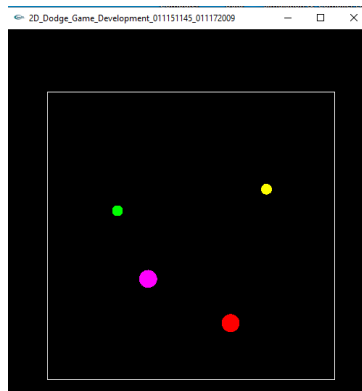
- The 2D Dodge Game offers a seamless and immersive gaming experience.
- The game features smooth animations, enhancing the visual appeal and user experience.
- The simplicity of the game mechanics ensures that players can quickly grasp the gameplay and start enjoying the challenges it presents.

3 | Game Screenshots:

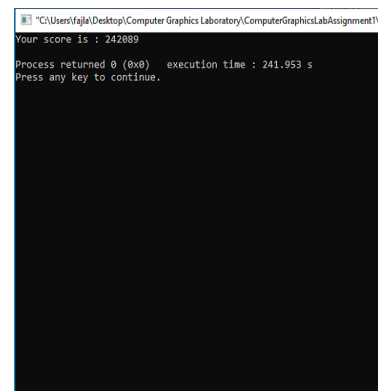
Screenshots from the game to illustrate its appearance and gameplay.
GitHub Repository [1]



(a) Agent A Green and Agent B Yellow



(b) Enemy 1 Red and Enemy 2 Magenta



(c) Score

Figure 3.1: 2D Dodge Game images



4 | References

- [1] Fajla Rabby Khan. <https://github.com/fajlarabbykhan/Computer-Graphics-Laboratory-Assignment-1/tree/main>.