PROJECT REPORT ON

“BRICK BREAKER”

GROUP MEMBERS :

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1. Introduction

This project is a recreation of the classic arcade game "Brick Breaker." The objective of the game is to control a paddle at the bottom of the screen to keep a bouncing ball in play while breaking a set of bricks. The game ends when the player either breaks all the bricks (winning) or misses the ball, allowing it to fall off the bottom of the screen (game over). The player scores points by breaking bricks, and the ball speeds up the game as it progresses.

2. Objective

The main goal of the project is to develop a simple yet functional game using basic graphics programming in C++, allowing users to:

- Control a paddle to keep the ball in play.
- Break bricks using the ball to accumulate points.
- Play until either all bricks are destroyed or the ball is missed.

3. Implementation

The project is implemented using the **C++ programming language** and the **graphics.h** library for graphical display. The key components include:

- **Paddle**: A rectangle at the bottom of the screen that the player controls using the left and right arrow keys.
- **Ball**: A square that moves across the screen and bounces off the walls, paddle, and bricks.

- **Bricks**: A grid of rectangular blocks that the ball can hit and destroy, each worth points when broken.

Key Functions:

- **initBricks()**: Initializes the grid of bricks at the start of the game.
- **drawGame()**: Renders the paddle, ball, and bricks on the screen, updating them with each frame.
- **updateBall()**: Handles the ball's movement and collision detection with the paddle, walls, and bricks.
- **controlPaddle()**: Allows the player to move the paddle left or right using keyboard input.
- **Main Game Loop**: Continuously runs the game logic, drawing the game state and updating ball and paddle positions.

4. Features

- **Paddle Control**: The player can move the paddle using the arrow keys to keep the ball in play.
- **Ball Physics**: The ball bounces off the paddle, walls, and bricks at various angles, adding challenge and unpredictability to gameplay.
- **Brick Destruction**: When the ball collides with a brick, the brick is removed, and the score increases.
- **Score System**: The player's score increases by 10 points for each brick destroyed.
- **Game Over Detection**: The game ends if the ball falls below the paddle, with a "Game Over" message displayed.

5. Challenges

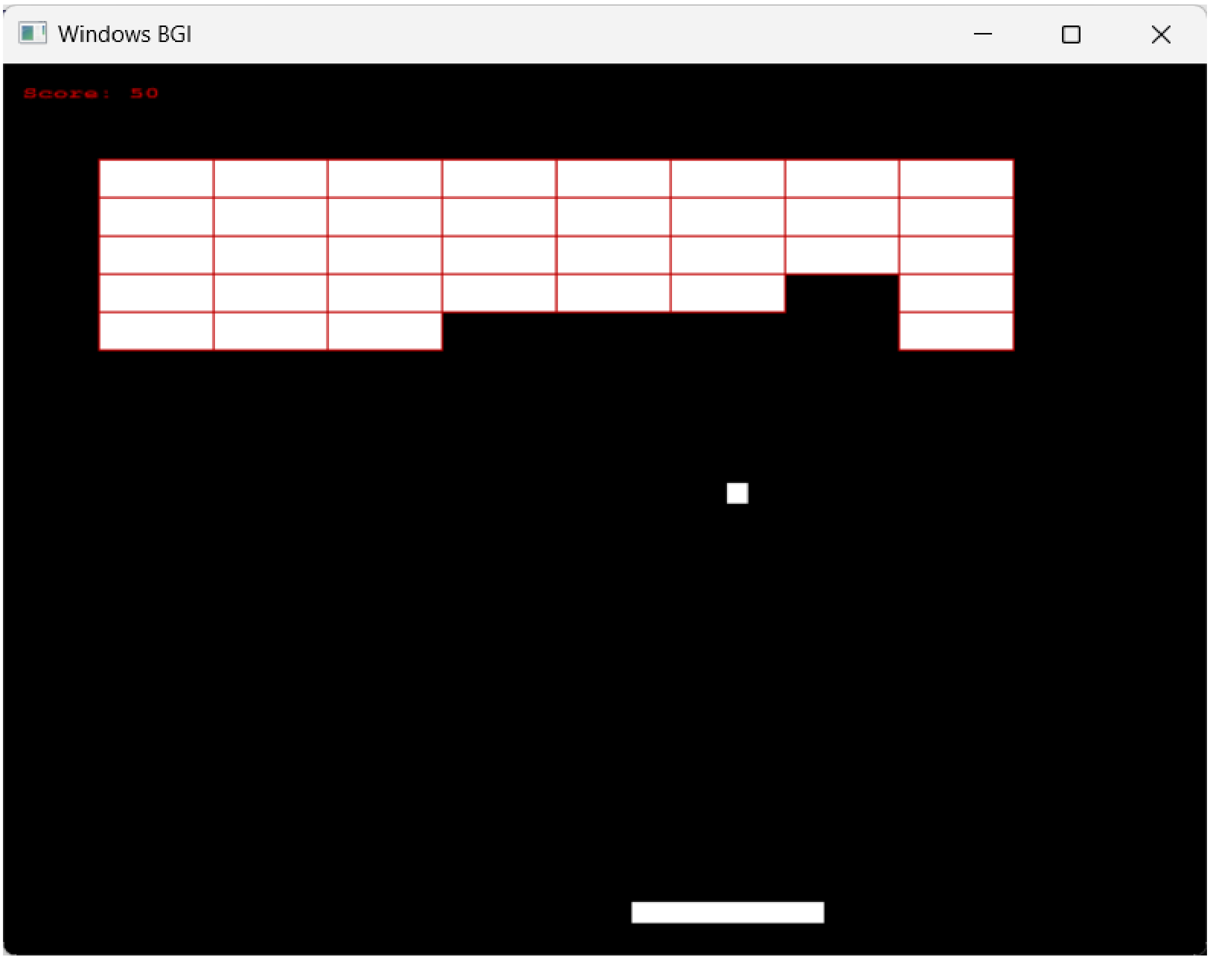
The primary challenges encountered during the development of this game included:

- Implementing accurate collision detection for the ball with various game elements, ensuring smooth and realistic bouncing.
- Keeping the game responsive to real-time keyboard inputs for paddle movement.
- Maintaining the simplicity of the code while ensuring the game logic runs efficiently.

6. Conclusion

This project successfully implements a basic version of the Brick Breaker game. It provides a fun and interactive experience where users can control a paddle, break bricks, and aim for a high score. The game offers a foundation for potential enhancements such as adding levels, varying brick types, or introducing power-ups for more complex gameplay.

7. OUTPUT


Windows BGI
Score: 50