

# **Project Report Submission - Brick Breaker Game**

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**Task Title:** Brick Breaker Game

## **Task Description:**

The task involved creating a Brick Breaker Game project using Java in the VS Code IDE. The game features a paddle and ball, with the objective of breaking bricks. Players control the paddle to bounce the ball and break bricks.

## **Steps Taken:**

1. Setup: Created a new Java project in the VS Code IDE.
2. Graphics: Utilized the Swing library to design the game window, paddle, ball, and bricks.
3. Game Elements: Implemented classes for the paddle, ball, and bricks, including their movement and interactions.
4. Collision Detection: Developed algorithms to detect collisions between the ball and bricks, as well as between the ball and the paddle.
5. Game Loop: Created a game loop to continuously update the game state and handle player input.
6. Scoring: Implemented tracking of the player's score as they break bricks.
7. Game Over: Implemented conditions for ending the game, such as when all bricks are destroyed or the player loses all their lives.

## **Challenges Faced:**

1. Understanding collision detection algorithms and ensuring accurate implementation.

2. Managing game state and player input within the game loop efficiently.
3. Designing a user-friendly interface for the game elements.

### **Solutions Implemented:**

1. Researched various collision detection techniques and selected the most suitable one for the game's requirements.
2. Utilized event-driven programming to handle player input effectively within the game loop.
3. Iteratively tested and refined the user interface to ensure smooth gameplay experience.

### **Learnings:**

1. Improved understanding of game development principles, including collision detection, game loops, and user interface design.
2. Enhanced proficiency in Java programming, particularly in implementing graphical user interfaces (GUI) using Swing.

### **Project Update:**

The Brick Breaker Game project has been successfully completed in the VS Code IDE. The game features a functioning paddle and ball, allowing players to break bricks and earn points. The game provides an engaging and enjoyable gaming experience, suitable for users of all ages.

**Project Git Hub Report:** <https://github.com/rahulkumar524/Brick-Breaker-Game>