

# CREATE A GAME IN SCRATCH PROGRAMMING

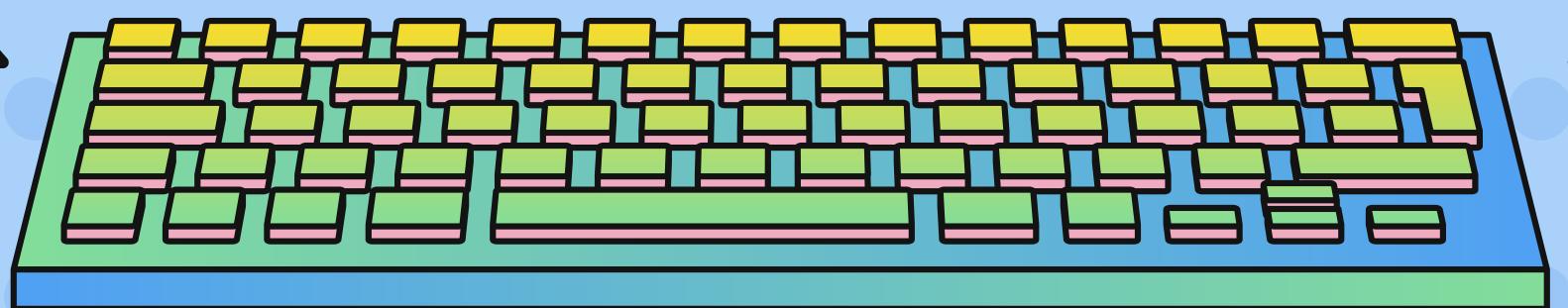
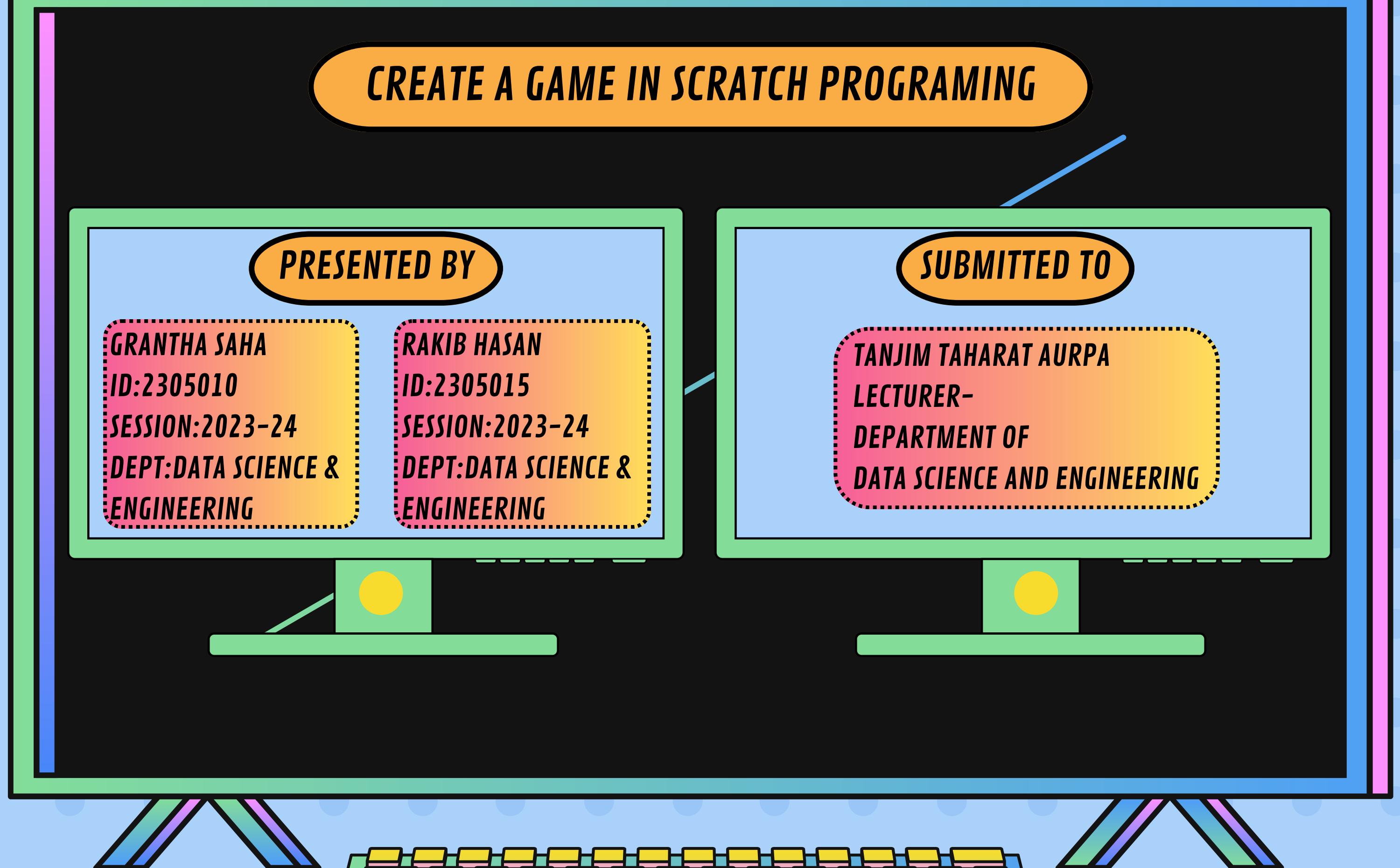
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# INTRODUCTION

## CONTENT:

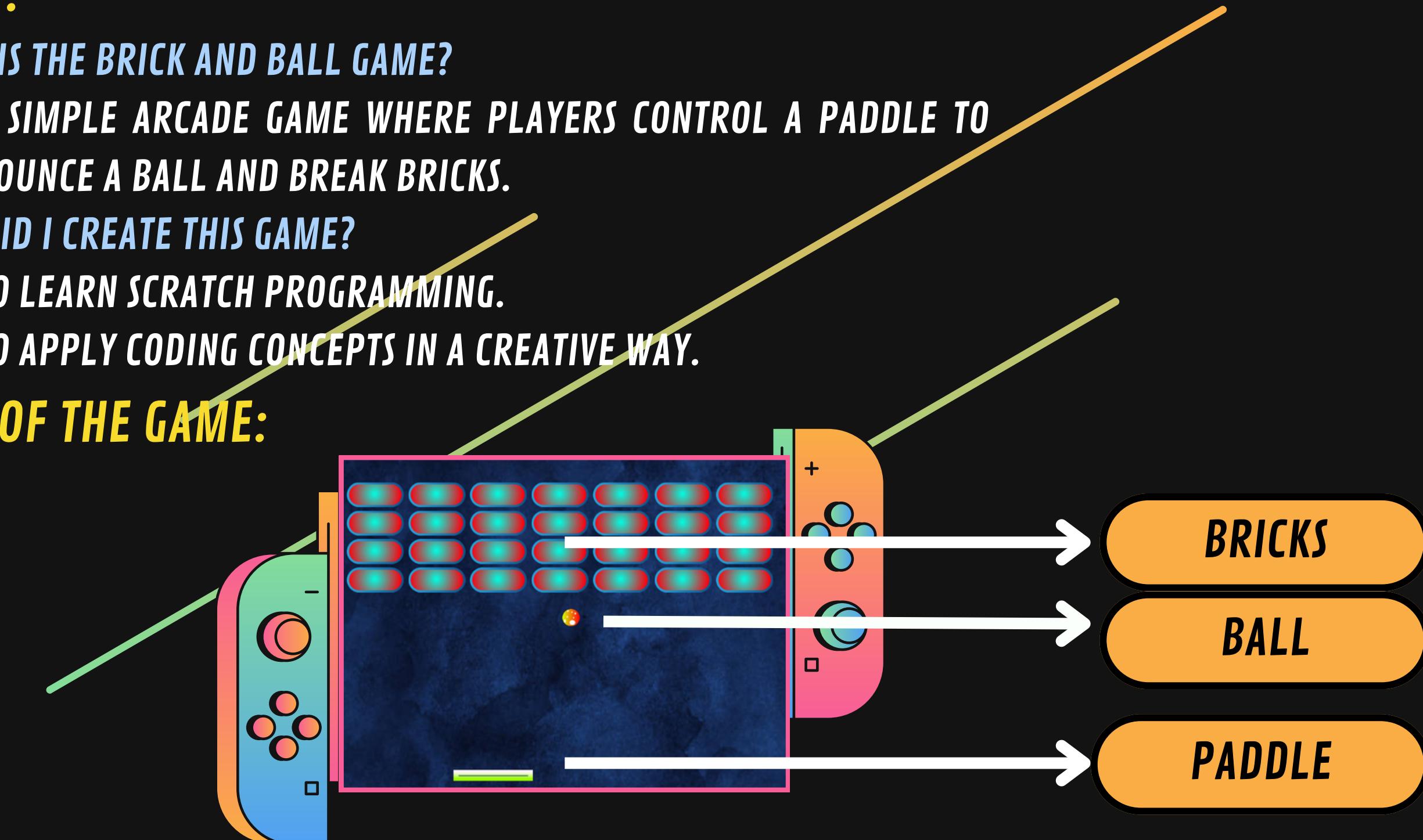
### 1. WHAT IS THE BRICK AND BALL GAME?

- A SIMPLE ARCADE GAME WHERE PLAYERS CONTROL A PADDLE TO BOUNCE A BALL AND BREAK BRICKS.

### 2. WHY DID I CREATE THIS GAME?

- TO LEARN SCRATCH PROGRAMMING.
- TO APPLY CODING CONCEPTS IN A CREATIVE WAY.

## VISUALS OF THE GAME:

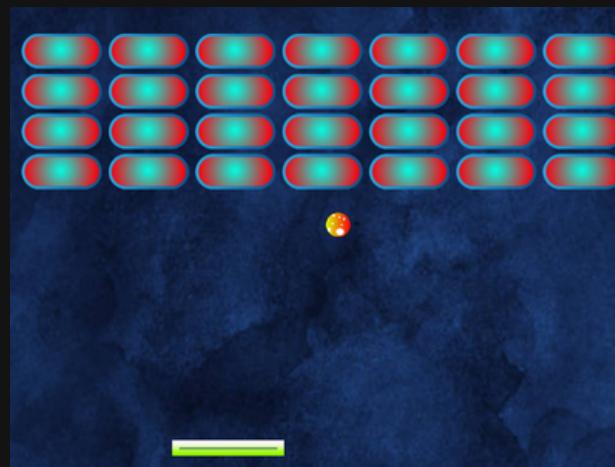


# FEATURES OF THE GAME

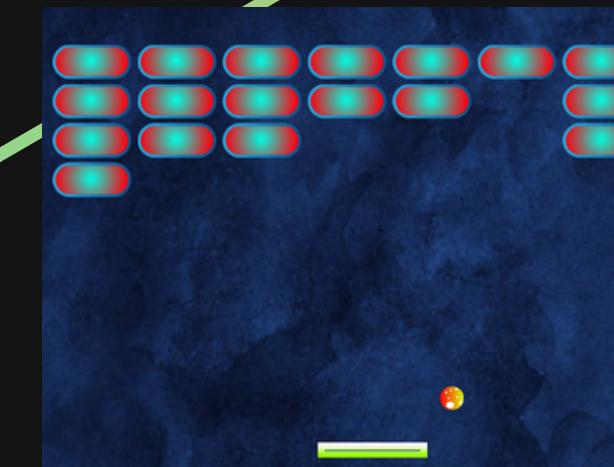
## CONTENT:

- **USER INTERACTION:** THE PADDLE IS CONTROLLED USING MOUSE.
- **GAMEPLAY MECHANICS:**
  - THE BALL BOUNCES OFF WALLS, BRICKS, AND THE PADDLE.
  - BRICKS BREAK UPON COLLISION WITH THE BALL.
  - PLAYERS SCORE POINTS AS BRICKS BREAK.
- **GAME OVER SCENARIOS:**
  - BALL FALLS BELOW THE PADDLE OR ALL BRICKS ARE DESTROYED.

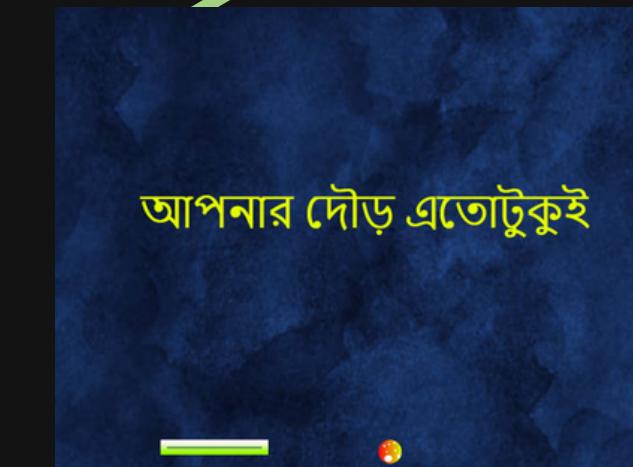
## VISUALS OF EACH POSITION:



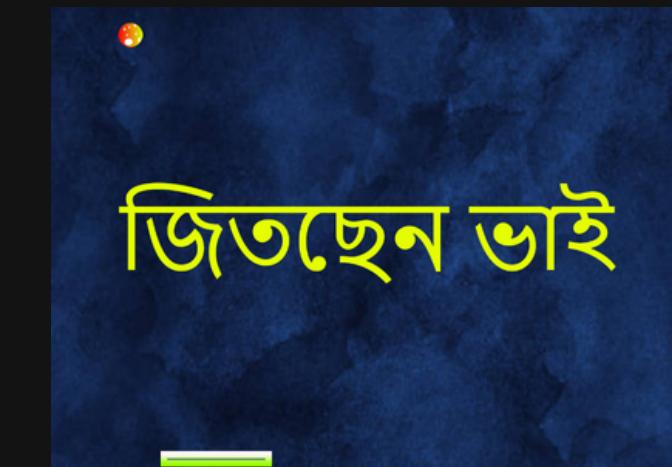
STARTING



BRICKS ARE BREAKING BY BALL



BALL FALLS BELOW THE PADDLE

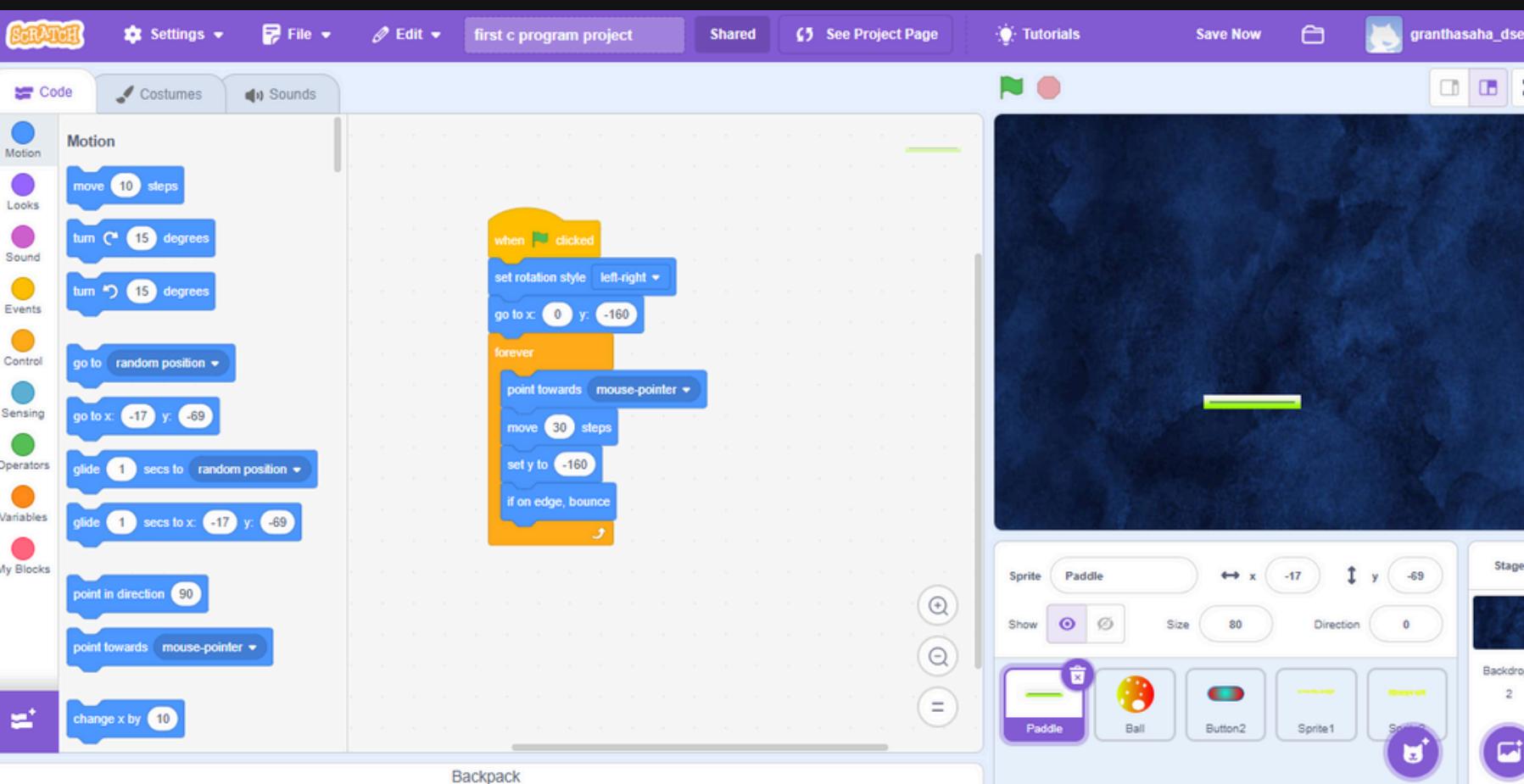


BRICKS ARE DESTROYED

# SCRATCH PROGRAMMING CONCEPTS USED

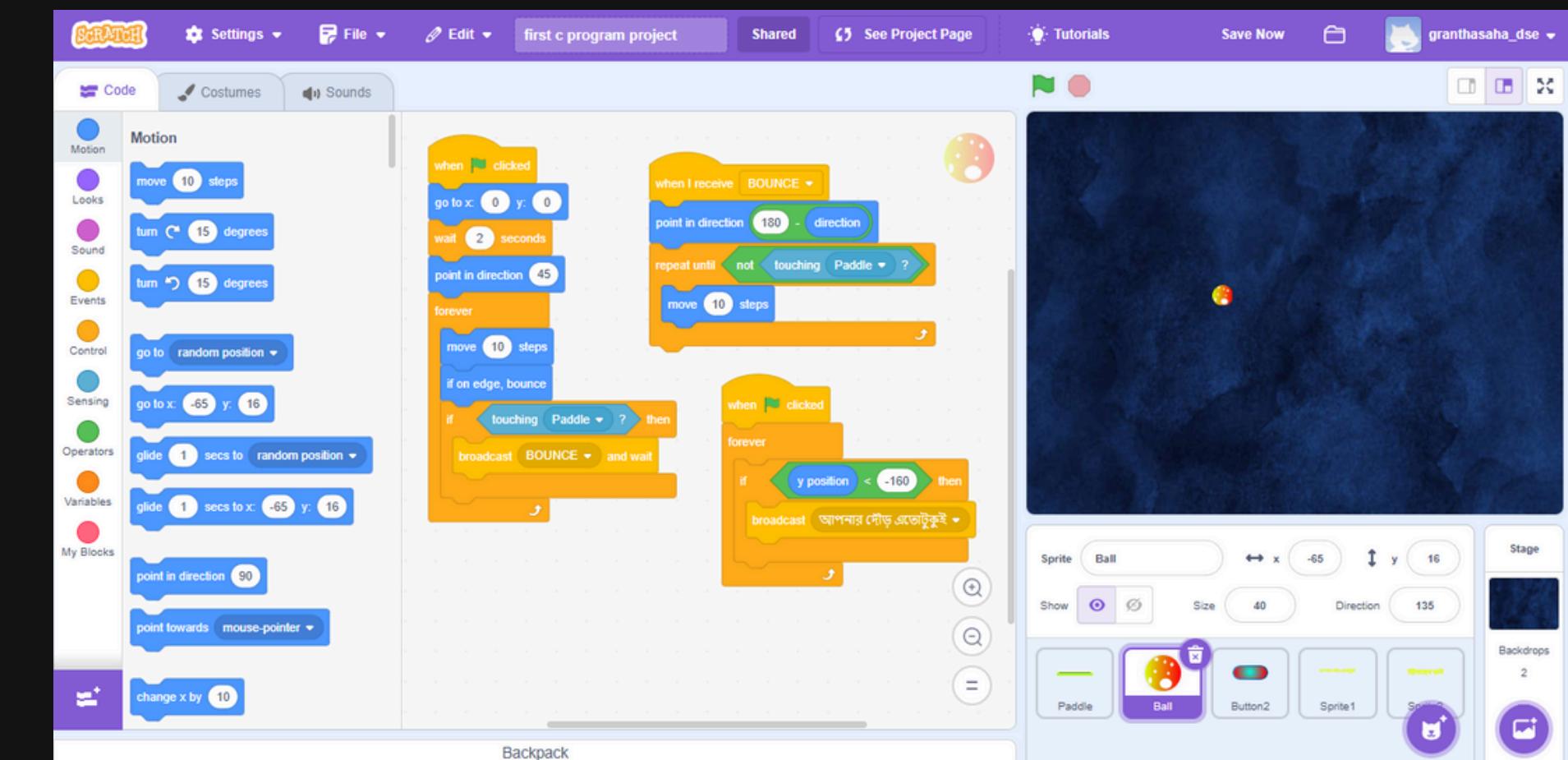
## CONTENT:

- **KEY BLOCKS IN SCRATCH:**
  - **MOTION BLOCKS:** FOR BALL AND PADDLE MOVEMENTS.
  - **CONTROL BLOCKS:** FOR LOOPS, IF-ELSE CONDITIONS, AND END-GAME LOGIC.
  - **EVENT BLOCKS:** TO DETECT WHEN THE BALL TOUCHES THE PADDLE OR BRICKS.
  - **LOOKS AND SOUNDS BLOCKS:** TO CREATE ANIMATIONS AND SOUND EFFECTS.
- **VARIABLES:** USED FOR SCOREKEEPING.



The Scratch interface shows the script for the Paddle sprite. It includes a green flag event that initializes the paddle's position at (0, -160) and sets its rotation style to "left-light". A forever loop moves the paddle towards the mouse pointer at 30 steps per second, turns it 15 degrees, and checks if it's off the edge, in which case it bounces back. The stage background is a dark blue space scene with stars.

PADDLE CONCEPT



The Scratch interface shows the script for the Ball sprite. It starts with a green flag event that moves the ball to (-65, 16), points it towards the mouse, and sets its direction to 135. A broadcast "BOUNCE" message triggers a forever loop that moves the ball 10 steps. If it touches the paddle, it bounces back. If it goes off the bottom edge, it broadcasts "GOAL" and ends the game. The stage background is a dark blue space scene with stars.

BALL CONCEPT

This Scratch project shows a stage with a dark blue background and a grid of red and green bricks. Two sprites are present: a yellow ball and a purple paddle. The script for the ball includes a 'when green flag clicked' hat with a 'set score to 0' block, followed by a 'forever' loop containing a 'if touching Ball then' block. Inside the loop, there's a 'repeat (4)' loop that creates clones of itself, moves them, changes their x position, and deletes them. The script for the paddle includes a 'when green flag clicked' hat with a 'hide' block, followed by a 'forever' loop containing a 'if touching Ball then' block. Inside the loop, the paddle moves to the ball's position.

## BRICKS CONCEPT

This Scratch project shows a stage with a dark blue background and a grid of red and green bricks. Two sprites are present: a yellow ball and a purple paddle. The script for the ball includes a 'when green flag clicked' hat with a 'hide' block, followed by a 'forever' loop containing a 'when I receive [Brick Breaker message]' block. Inside the loop, the ball moves to the center of the stage and then stops. The script for the paddle includes a 'when green flag clicked' hat with a 'go to x: 0 y: 0' block, followed by a 'forever' loop containing a 'glide 1 secs to random position' block.

## GAME OVER CONCEPT IF BALL FALLS BELOW THE PADDLE

This Scratch project shows a stage with a dark blue background and a grid of red and green bricks. Two sprites are present: a yellow ball and a purple paddle. The script for the ball includes a 'when green flag clicked' hat with a 'go to x: 0 y: 0' block, followed by a 'wait until [score = 28]' block. Inside the loop, the ball starts moving again. The script for the paddle includes a 'when green flag clicked' hat with a 'go to x: 0 y: 0' block, followed by a 'forever' loop containing a 'glide 1 secs to random position' block.

## GAME OVER CONCEPT IF ALL BRICKS ARE DESTROYED

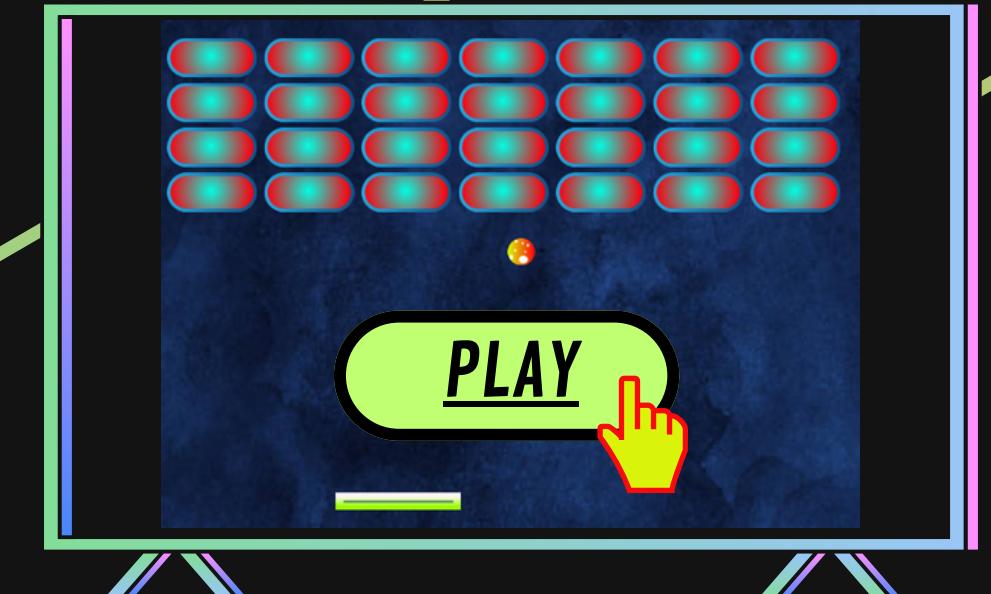
## GAMEPLAY DEMONSTRATION

### CONTENT:

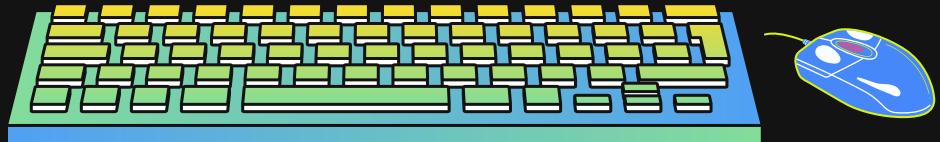
- EXPLAIN HOW THE GAME WORKS STEP-BY-STEP:
  - MOVE THE PADDLE TO BOUNCE THE BALL.
  - BREAK THE BRICKS TO SCORE POINTS.
  - AVOID LETTING THE BALL FALL BELOW THE PADDLE.

### VISUALS:

- LIVE GAMEPLAY:



**BRICKS 'N' BALL**



# CHALLENGES AND LEARNING

## CHALLENGES:

- MAKING THE BALL BOUNCE AT CORRECT ANGLES.
- ENSURING THE GAME IS NEITHER TOO EASY NOR TOO DIFFICULT.
- DEBUGGING ISSUES LIKE THE BALL GETTING STUCK OR PADDLE NOT RESPONDING.

## WHAT I LEARNED:

- LOGICAL PROBLEM-SOLVING AND DEBUGGING.
- USING SCRATCH FEATURES EFFECTIVELY.
- THE IMPORTANCE OF USER-FRIENDLY GAME DESIGN.

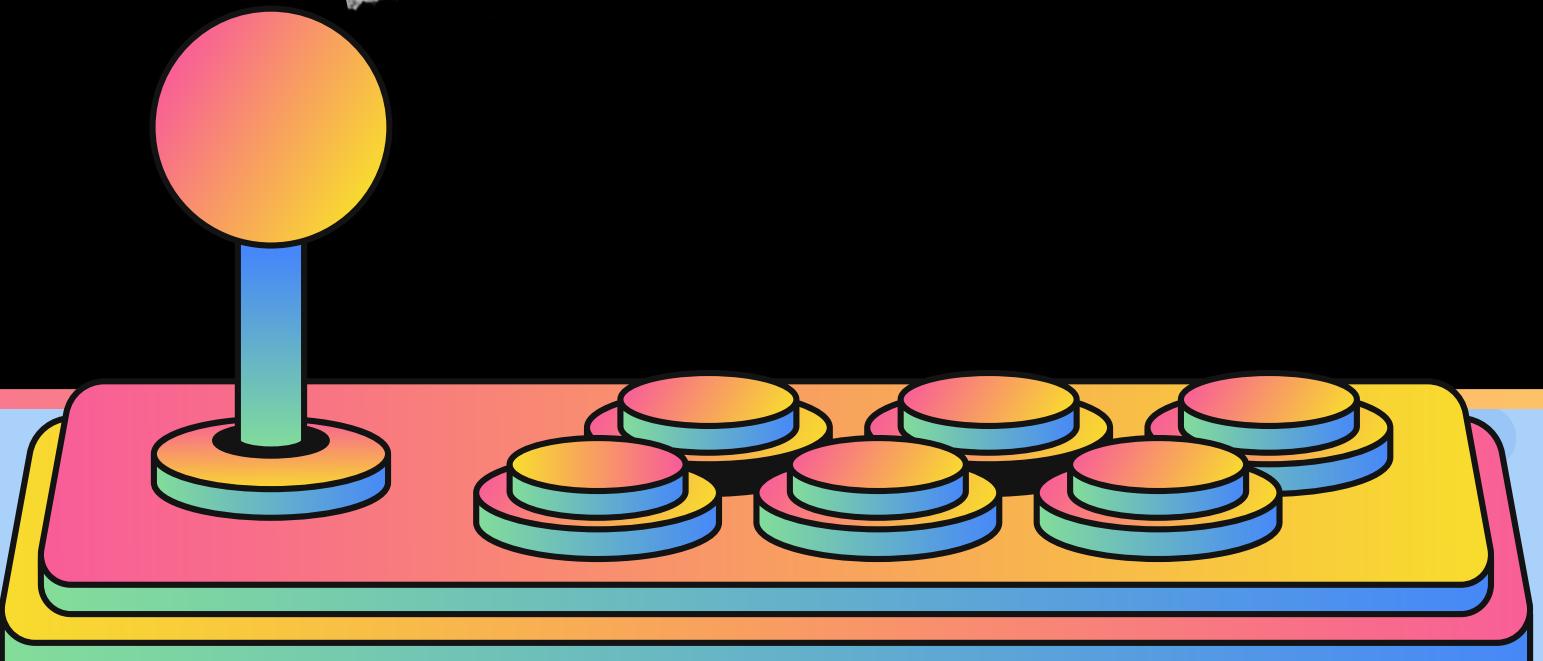
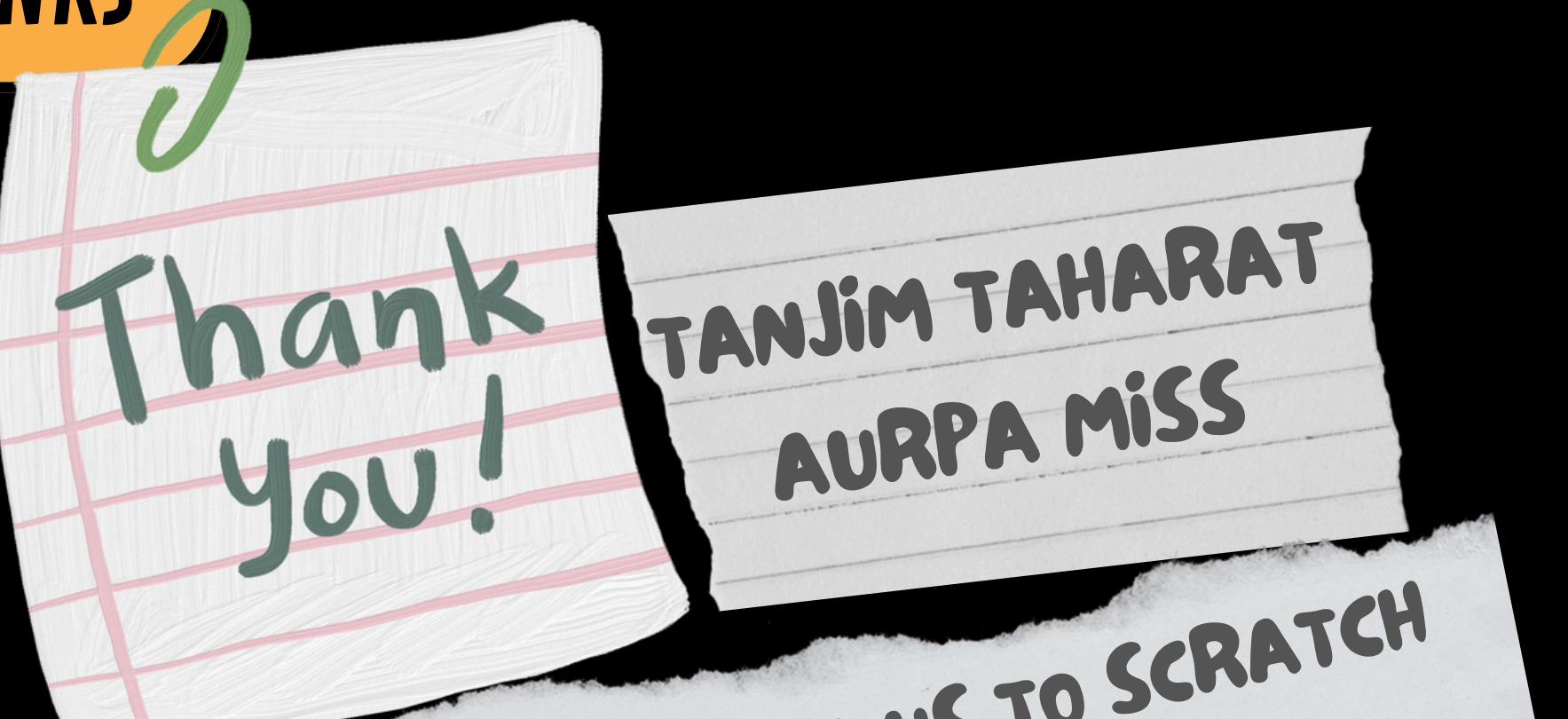
## FUTURE IMPROVEMENTS:

- IDEAS FOR ENHANCEMENTS:
  - ADD MORE LEVELS WITH INCREASING DIFFICULTY.
  - INTRODUCE SPECIAL POWER-UPS (E.G., MULTI-BALL OR PADDLE SIZE INCREASE).
  - CREATE A HIGH-SCORE LEADERBOARD.
- MENTION THAT THE GAME IS A FOUNDATION FOR MORE ADVANCED PROJECTS.





## SPECIAL THANKS



**ADVANCE THANKS  
FOR PLAYING!**

**END**

