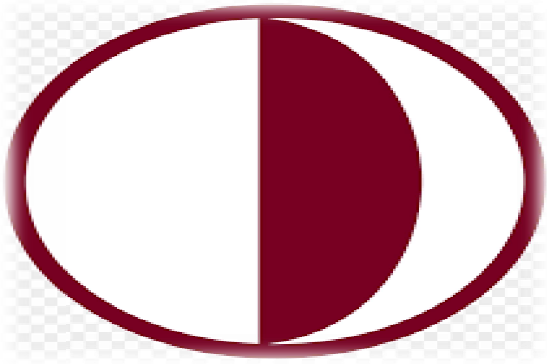
NEAR EAST UNIVERSITY
YAKIN DOĞU ÜNIVERSITESI
OBJECT ORIENTED PROGRAMMING
ECC108

PING PONG GAME PROJECT (REPORT)



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- ## INTRODUCTION:

The Ping Pong game is a classic arcade game implemented using Python and the Pygame library. The game simulates a table tennis match where players control paddles to hit a ball back and forth. The objective is to score points by making the opponent miss hitting the ball.

- ## FUNCTIONS USED:

1. Ball_movement(BALL):

- **Purpose**: Manages the movement of the ball within the game window, including collision detection with walls.
- **Parameters**: 'BALL': Rectangular object representing the ball's position and dimensions.
- **Functionality**:
  - **a.** Updates the ball's position based on its current velocity.
  - **b.** Detects collisions with horizontal and vertical walls and adjusts the ball's direction accordingly.

2. Main():

- **Purpose**: Serves as the main game loop controlling all aspects of gameplay, including player input, collision detection, scoring, and rendering.
- **Functions**:
- **Shapes and Locations:** Initializes rectangles representing game elements such as paddles, ball, and walls.
- **Event Handling:** Captures player inputs (key presses) to control paddle movement.
- **Ball Collisions:** Detects collisions between the ball and paddles, updates velocity, and tracks scores.

- **Rendering**: Draws game elements on the screen, including paddles, ball, walls, and scores.

- **Game Over Condition:** Terminates the game loop when a player reaches a specified score threshold.

Additional Information:

- The game window dimensions, frame rate, paddle size, ball radius, and colors are defined as parameters at the beginning of the script.

- Players control their paddles using keyboard inputs: Player 1 with "W" and "S" keys, and Player 2 with the up and down arrow keys.

- Ball velocity increases upon collision with paddles, adding a dynamic element to gameplay.

- Scores are displayed at the top center of the screen, with the game ending when one player reaches a score of 10.

- The game loop continues until the user closes the window or the game ends.

• CONCLUSION

The Ping Pong game, made with Python and Pygame, brings back the fun of old-school arcade games. With functions like Ball_movement and main, the code neatly handles player moves, ball bounces, scoring, and graphics.

This game is easy to play, with basic controls and clear feedback on scores. It's simple yet exciting, making it a timeless choice for gaming.

By showing how Python can create games, Ping Pong highlights the enduring appeal of classic gaming in today's tech world.