AI Project

PEAS, ODESA

Sec:1

## What are PEAS:

Performance Measure: Score (how many times the ball passes the opponent)

Environment: Virtual game environment with a ball, two players, and a scoring mechanism.

Actuators: Methods for moving the players and the ball.

Sensors: Methods for detecting keypress events and collisions.

# What is ODESA:

Observation: Positions of the ball, players, and collisions.

Design: Setup of game window, initialization of game objects, game loop, and event listeners.

Expectation: Anticipating the movement of the ball and player reactions.

Sensation: Detecting user input (keypress events) and collision detection.

Action: Moving players, updating ball position, handling collisions, and updating game state.

## What is the problem formulation:

Objective: The primary objective of the game is to score points by hitting the ball past the opponent's paddle.

Initial State: The initial state consists of the game environment, including the positions of the ball, players, and the score (which is initially set to zero for both players).

Actions: The actions available to the players are to move their paddles up or down to hit the ball.

Transition Model: The transition model describes how the game state changes in response to player actions and the movement of the ball. This includes updating the positions of the ball and players, handling collisions, and updating the score.

Goal Test: The goal test checks whether the game has reached a terminal state, where one player has scored a certain number of points, or a predefined number of rounds have been played.

Path Cost: The path cost could be measured in terms of the number of moves or actions taken by the players to reach a terminal state.

Constraints: There may be constraints such as boundaries limiting the movement of the players and the ball, as well as rules governing how the game is played (e.g., scoring rules, player movement limitations).