Assembly Game Project Documentation

# 1. Introduction

This assembly game project is designed using 8086 assembly language. The game includes a Pong-like structure where players control paddles to hit a ball, with various game mechanics like pausing, scoring, and ending.

# 2. Features

The game includes the following features:

• Right and Left paddles for both players.  
• Displaying player scores.  
• Boundary drawing for the game field.  
• Winning condition (First player to reach a score of 5 wins).  
• Pause and resume functionality.  
• Custom beep sound on winning.  
• Displaying cat face and other aesthetic messages.

# 3. Functionality

## 3.1 Drawing Paddles

The right paddle is drawn by setting the cursor at specific coordinates and displaying a filled block (0xDB). The left paddle is erased by writing spaces to its positions.

## 3.2 Displaying Player Data

Player scores are displayed using the ASCII value of the score, which is converted into a character.

## 3.3 Boundary Drawing

The boundary of the game is drawn by placing special characters at the edges. The game area is defined by these boundaries.

## 3.4 Pause and Resume Functionality

The game can be paused by pressing the 'P' key. The game will resume when the 'U' key is pressed.

## 3.5 Check Winner

The game checks if either player has scored 5 points. If a player wins, a winning message is displayed, and the game is reset.

## 3.6 Play Beep

A custom beep is played when a player wins. This is achieved by toggling the speaker bit in the system's I/O ports.

# 4. Conclusion

This assembly game project demonstrates how low-level assembly programming can be used to create a simple but engaging game. It integrates concepts like hardware interaction, input/output handling, and creating a functional game loop in assembly.