OBJECT ORIENTED PROGRAMMING PROJECT

TIC TAC TOE GAME IN PYTHON

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REASON FOR CHOOSING THIS PROJECT

- Tic Tac Toe is a universally known game, making it an excellent choice for demonstrating programming skills.
- Apply and showcase Object-Oriented Programming (OOP) principles.
- Gain hands-on experience with GUI design and event-driven programming.
- Fun and interactive, encouraging user participation during demonstrations.

APPLICABILITY OF THE PROJECT

1.Game Development Foundations:

1. Provides a foundation for understanding game loops, user interaction, and state management.

2.Interactive Learning Tools:

1. Can be extended for use in workshops or coding competitions.

3.Personal Entertainment:

1. A simple game that people of all ages can enjoy.

TOOLS, LIBRARIES, AND PLATFORM USED

- •Programming Language: Python
- •Libraries:
 - •Tkinter: For building the graphical user interface (GUI).
 - •Winsound: For integrating audio feedback during gameplay.
 - •Time: For managing timers and delays.
- •Development Environment:
 - •Platform: Windows (for winsound compatibility).
 - •IDE/Editor: VSCode

BLOCK DIAGRAM OF THE GAME

- Start Game UI (Enter Player Names) --> Initialize Game Components
- •
- v
- Display Game Board & Scoreboard --> Wait for Player Interaction
- •
- v
- Player Clicks Button --> Update Board State & Check Winner
- •
- v
- Winner Found? --> Yes --> Announce Winner & Reset Board
- •
- No
- |
- 7
- Switch Turn --> Repeat Interaction Until Winner or Draw

BLOCK DIAGRAM DETAILS

Component Interactions

- •Player Input:
 - •Button clicks indicate player moves.
 - •Input updates the game board.
- •Game Logic:
 - ·GameManager checks win/draw conditions after each move.
 - •Determines next steps based on game state.
- •User Interface:
 - ·GameRenderer dynamically updates UI elements (board, scores, timer).
 - •Highlights winning moves with animations.
- •Feedback Loop:
 - •Timer and audio feedback enhance interactivity.

GITHUB LINK

• https://github.com/Eman-Rana/Tic-Tac-Toe-game/tree/main

DEMO VIDEO

```
File Edit Selection View Go Run ...
                                                   oppgulipy 🛪 📱 = include viostream > // stance of horary | www.line |
     W MO FOLDER OPENED
                                                    C > Users > hp > Desktop > ocogui > @ oppgui.py > ...
                                                             import tkinter as tk
      You have not yet opened a folder.
                                                             from tkinter import messagebox
                   Opten Folder
                                                              import winsound # For beep sounds
     Opening a folder will close all currently open actions. To keep them open, add a folder instead.
                                                              class PlayarTurn:
                                                                  PLAYER1 = "Player 1"
PLAYER2 = "Player 2"
                                                                  def _init_(self, root, player1_name="Player 1", player2_name="Player 2"):
                                                                       self.root - root
                                                                       wolf-board = [[ ' for _ in range(3)] for _ in range(3)] # Game board
                                                                      self-nound = [1] for in range()] to

self-player_name = player2 name

self-player_town = Player0 name

self-player1.score = 0

self-player2.score = 0

self-start time = fine.time()
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