

MINI GAME COLLECTION

Presented By S3SW

GAMES

Hangman

Tic-Tac-Toe

Number Guessing Game

quiz game

Word Scramble



project overview

Our team created five Python mini-games, each with unique mechanics and themes, highlighting key programming concepts and coding techniques. We focused on clean, modular code for easy maintenance and collaborated closely to ensure smooth development. The result is a collection of engaging, user-friendly games that reflect our technical skills and creativity.

Our main menu

```
welcome to our game the playgroud  
1) play  
2) leaderBord  
3) Exit  
please enter 1,2,3
```

Games menu

what do you want to play

1)tic-tac-toe

2)quizGame

3)wordScramble

4)gussingGame

5)hangManGame

6)Exit

please enter 1,2,3,4,5,6

Leaderboard menu

choose one :

1)tic-tac-toe

2)wordScramble

3)quizGame

4)gussingGame

5)hangManGame

6)Exit

please enter 1,2,3,4,5,6

Hangman

Asmaa Aboushady

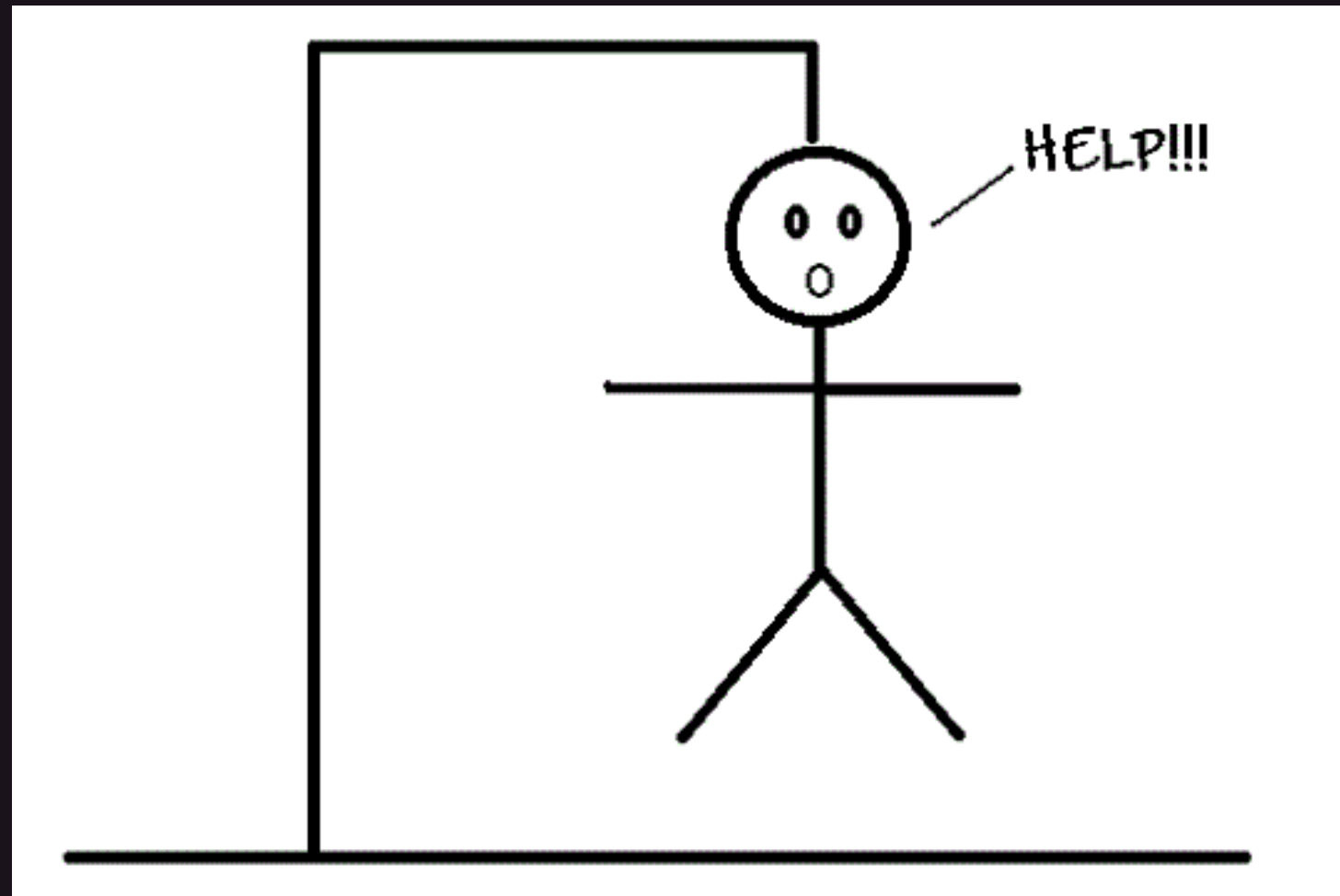
REQUIREMENTS

Visual representation of the hanging stick figure using ASCII art.

Player guesses letters with 3 incorrect guesses allowed.

Scores accumulated across retries until the player loses.

Retry option after the game ends.



Overview of the Game

What is Hangman?

- A word-guessing game where the player tries to guess a secret word one letter at a time.
- Incorrect guesses bring the player closer to losing by adding parts to a hangman figure.

How our Hangman Game works?

- Players guess letters until they either figure out the word or make too many wrong guesses.
- The game tracks both correct and incorrect guesses.
- The leaderboard records player names and scores based on their performance.

Core Functions

- **getRandomWord(wordList):**

Selects a random word from the list of available words.

- **displayBoard(missedLetters, correctLetters, secretWord):**

Displays the current state of the hangman figure.

Shows missed letters and blanks for unguessed letters in the secret word.

- **getGuess(alreadyGuessed):**

Prompts the player for a letter.

Ensures the input is a valid, single alphabetic character that hasn't been guessed before.

Game Flow

- Main Game Loop:

Continuously shows the game board and asks the player for guesses.

- Winning Condition:

If all letters of the secret word are guessed, the player wins and their score is calculated:

$\text{Score} = 10 * \text{correct guesses} - 5 * \text{missed guesses}$

- Losing Condition:

If the player runs out of guesses (maximum allowed wrong attempts), they lose and the correct word is revealed.

Leaderboard & Replay Option

- Leaderboard Functionality (`updateLeaderboard(name, score)`):

Updates the leaderboard by reading the file, adding the new score, sorting, and saving it back.

Leaderboard is sorted in descending order based on the player scores.

- Replay Option:

After the game, players are asked if they want to play again (`playAgain()` function).

If "yes," the game resets; if "no," the game ends with a thank-you message.

HANGMAN

Please guess a letter.

0

Missed letters: n

cam_1

Please guess a letter.

e

You guessed it!

The secret word is "camel"! You win!

Your score is: 45

Enter your name for the leaderboard:

Missed letters:

Please guess a letter.

Enter your name for the leaderboard: Asmaa
Would you like to play again? (y)es or (n)o
n
Thank you for playing! Hope to see you again soon!
PS C:\Users\somaa> █

Asmaa: 60
Asmaa: 45
Ahmed: 35
Asmaa: 25
Noor : 5
Esraa: 5
Esraa: 5
asmaa: -5
Noor: -5
esraa: -5
Ahmed : -5
asmaa: -15
Esraa: -15
█

Quiz game

perihane hossam

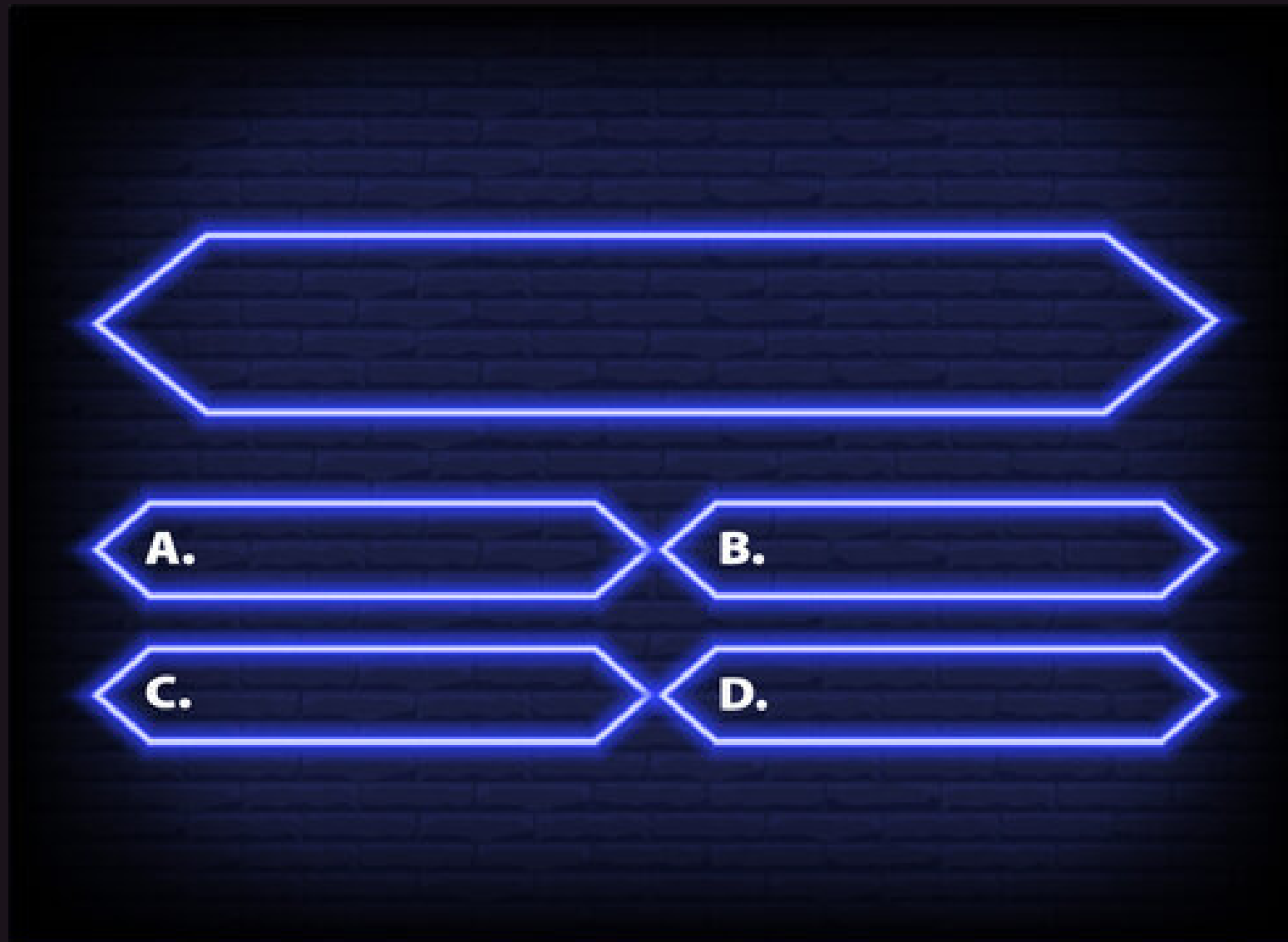
REQUIREMENTS

Load multiple-choice questions from a file (e.g., questions.txt or questions.json).

Players have 3 lives.
Incorrect answers deduct one life.

Random question selection and retry option after the game ends.

Scores are saved when the player loses all lives.



Overview of the Game

Quiz Game

Description

- A dynamic quiz game where players answer multiple-choice questions.
- Players have three lives to answer questions and can retry if needed.
- The game keeps track of high scores in a leaderboard.

Overview of the Game

Quiz Game

How It Works

- **Game Start:** Player enters their name.
- **Questions:** Questions are loaded from a JSON file and shuffled.
- **Gameplay:**
 - Players answer questions with multiple choices.
 - Incorrect answers reduce lives.
 - Players can retry if they lose all lives.
- **End of Game:** Displays final score and updates the leaderboard.
- **Options:** Players can play again, exit, or view the leaderboard.

Overview of the Game

Quiz game

Code Breakdown

- Loading Questions:

 - Reads questions from a JSON file using `load_questions()`.

- Leaderboard Management:

 - Loading: Reads leaderboard data with `load_leaderboard()`.

 - Updating: Adds new scores, filters, and sorts the leaderboard with `update_leaderboard()`.

 - Saving: Writes the updated leaderboard to a JSON file with `save_leaderboard()`.

- Game Logic:

 - Quiz Randomization: Shuffles questions and manages scoring with `quiz_Random()`.

 - Retry Mechanism: Allows players to retry or finish the quiz.

- Display Leaderboard: Shows top scores using `display_leaderboard()`.

Overview of the Game

Quiz Game

Results & Wrap-Up

- **Score Display:** Shows player's final score and the total number of questions.
- **Leaderboard:** Updates and displays the top scores.
- **Options:** Allows players to play again, exit, or check the leaderboard.
- **Conclusion:** Thanks players and invites feedback for improvements.

Enter your name: perihane
who is the winner of the champions league 2009?
A) Barchelona
B) Milan
C) Real Madrid
D) Manchester United
Your answer (A, B, C, D): a
Correct!

What is the largest planet in our solar system?
A) Earth
B) Mars
C) Jupiter
D) Saturn
Your answer (A, B, C, D): a
Wrong! You have 2 live/s left. Try again.
Your answer (A, B, C, D): d
Wrong! You have 1 live/s left. Try again.
Your answer (A, B, C, D): c
Correct!

What is the capital of France?
A) Berlin
B) Madrid
C) Paris
D) Rome
Your answer (A, B, C, D): r
You have no lives left. Game over.
Do you need to Retry?(yes/no):no
Quiz finished! perihane Your score is 2 out of 5.
Do you want to (1) play again (2) Exit or (3) See the leaderboard? Enter 1, 2, or 3: 2
Thank you for playing! Goodbye.
PS E:\vortex peri>

Wrong! You have 1 live/s left. Try again.
Your answer (A, B, C, D): s
You have no lives left. Game over.
Do you need to Retry?(yes/no):yes
who is the winner of the champions league 2009?
A) Barchelona
B) Milan
C) Real Madrid
D) Manchester United
Your answer (A, B, C, D): a
Correct!

What is the capital of France?
A) Berlin
B) Madrid
C) Paris
D) Rome
Your answer (A, B, C, D): t
Wrong! You have 2 live/s left. Try again.
Your answer (A, B, C, D): t
Wrong! You have 1 live/s left. Try again.
Your answer (A, B, C, D): t
You have no lives left. Game over.
Do you need to Retry?(yes/no):no
Quiz finished! periiii Your score is 1 out of 5.
Do you want to (1) play again (2) Exit or (3) See the leaderboard? Enter 1, 2, or 3: 3
Leaderboard:
perihane: 5
salma: 5
dina: 5
peri4: 5
ahmed: 5
ahmad: 5
body: 4
bobo: 4
youssef: 3

Do you want to (1) play again (2) Exit or (3) See the leaderboard? Enter 1, 2, or 3: 1

Enter your name: PERI

:What is the smallest prime number?

A) 0

B) 1

C) 2

D) 3

Your answer (A, B, C, D):

Number Guessing Game

youssef mahmoud

REQUIREMENTS

Player has 3 tries to guess the computer's randomly selected number.

Provide higher/lower hints after incorrect guesses.

Retry option after the game ends.

Scores accumulated across retries until the player loses.

Guess a number



Overview of the Game

Number Guessing Game

Description

- A simple and engaging game where players guess a randomly generated number between 1 and 10.
- Players have up to three attempts per round to guess the number correctly.
- The goal is to win three rounds to win the game overall.

Overview of the Game

Number Guessing Game

How It Works

- **Start:** Players are greeted and informed about the number range and the rules.
- **Gameplay:**
 - Players guess a number between 1 and 10.
 - Feedback is given if the guess is too high or too low.
 - Players have three tries per round to guess correctly.
- **Winning & Restarting:**
 - Guessing correctly within three tries earns a point.
 - Winning three rounds means the player wins the game.
 - Players are given an option to play again or exit.

Overview of the Game

Number Guessing Game

Code Breakdown

- **Score Tracking:**
 - `addpoint(score)`: Increments the player's score.
- **Game Loop:**
 - Generates a random number between 1 and 10.
 - Players guess and receive feedback.
 - Keeps track of tries and wins.
 - Resets for a new round or ends the game based on player performance.
- **Play Again Option:**
 - Prompts players to play another round or exit.
 - Saves the total games won to a file.

Overview of the Game

Number Guessing Game

Results & Wrap-Up

- **Score Display:** Shows the number of games won.
- **Leaderboard:** Saves the player's results in a file for tracking performance.
- **Exit:** Thanks the player and ends the game session.
- **Final Message:** Encourages feedback or suggestions for improvements.

```
Hello, what's your name?: youusef
okay! youusef I am guessing a number between 1 and 10: (guess the number three times to win!)
5
Your guess is too high
2
Your guess is too low
4
Your guess is too high
game over! you could not guess the number in 3 tries
do you want to play again? (yes/no):
```

Word Scramble

Kenzy Mohamed

REQUIREMENTS

Player guesses the correct word from a scrambled version within 3 attempts.

Retry option after the game ends.

Scores accumulated across retries until the player loses.



Overview of the Game

Word Scramble Game

Description

- A fun and interactive word guessing game where players need to unscramble a given word within a limited number of tries.
- Players get to guess the scrambled word up to three times.

Overview of the Game

Word Scramble Game

How It Works

- Step 1: A word is randomly selected from a predefined list.
- Step 2: The chosen word is scrambled using a random shuffle method.
- Step 3: The scrambled word is presented to the player.
- Step 4: The player guesses the unscrambled word. They have up to three attempts to guess correctly.
- Step 5: The game keeps track of correct guesses and offers the option to play again.

Overview of the Game

Word Scramble Game

Code Breakdown

- **Scramble Function:** Uses `random.shuffle` to scramble the letters of the word.
- **Game Loop:**
 - Selects a word.
 - Scrambles it.
 - Prompts the player to guess with a maximum of three attempts.
 - if guessed correctly, it increases the win count; otherwise, it reveals the correct word.
- **Replay Option:** Asks the player if they want to play again and keeps track of the number of games won.
- **File Logging:** Saves the player's name and number of wins to a file after the game ends.

Overview of the Game

Word Scramble Game

Results & Wrap-Up

- **Game Outcome:** Shows whether the player won or lost and the correct word.
- **Play Again:** Allows the player to decide if they want to play another round.
- **Score Tracking:** Player's wins are recorded in a file for future reference.
- **Conclusion:** Encourages feedback and suggestions for improvements.

enter your namekenzy

okay kenzy Welcome to the Word Scramble Game try to guess in 3 try's

Scrambled word: omragmpnrgi

Guess the word: prog

Wrong guess! You have 2 attempts left.

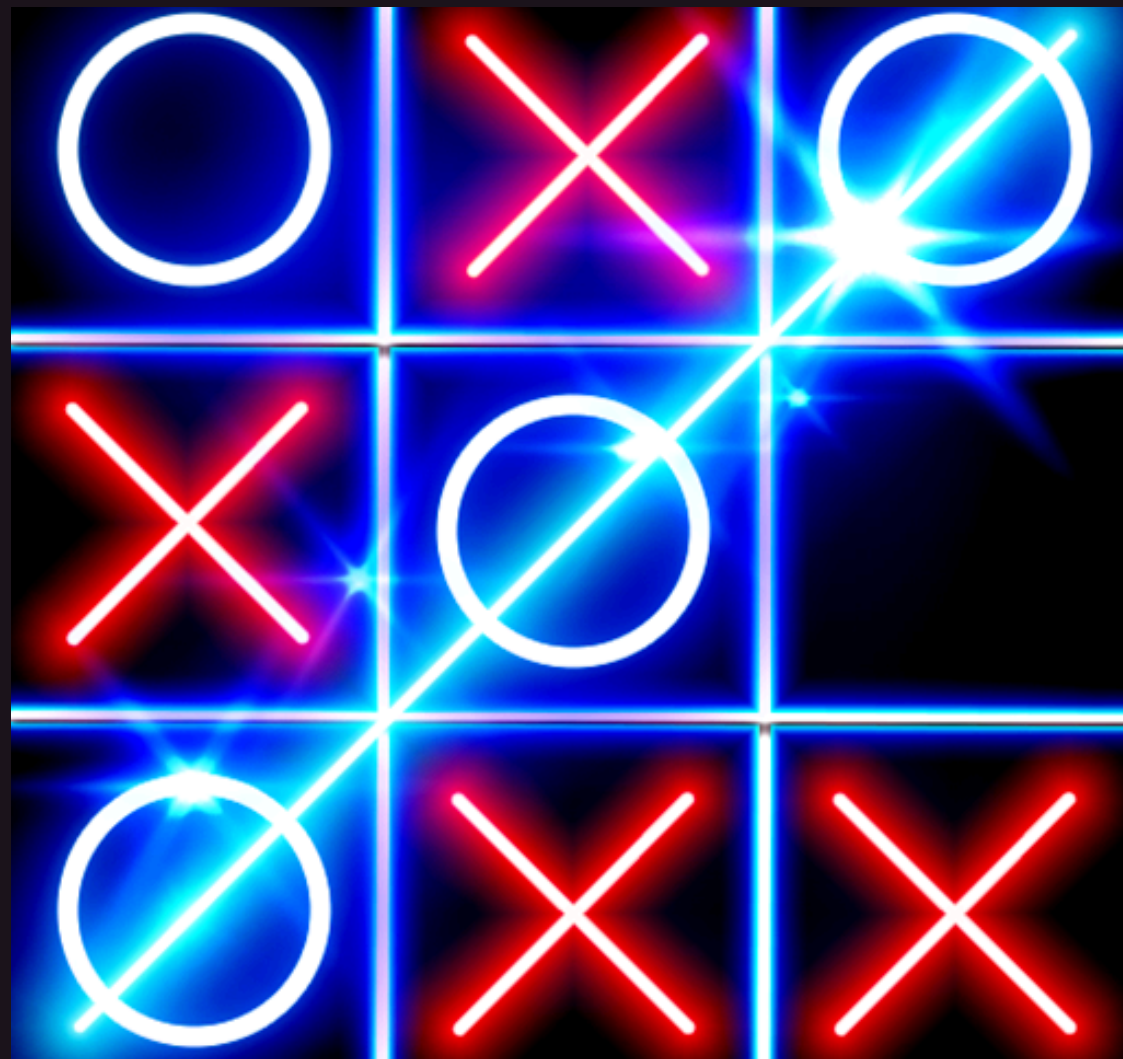
Guess the word: programming

Congratulations! You guessed the word correctly.

do you want to play again? (yes/no):

Tic-Tac-Toe (with AI)

Mazen el deeb



REQUIREMENTS

Two-player game with options for human vs. human or human vs. AI (random moves).

Detect win conditions and ties.

Retry option after the game ends.

Scores accumulated across retries until the player loses.

Overview of the Game

What is Hangman?

- A two-player game where players alternate placing 'X' or 'O' on a 3x3 grid.
- The objective is to get three of your marks in a row (horizontally, vertically, or diagonally) before your opponent.

Game Modes:

- Human vs Human
- Human vs AI (Random moves)
- Human vs AI (Smart AI using Minimax)

Overview of the Game

How it Works

- Player chooses a mode (Human vs Human, Random AI, Smart AI).
- Players take turns marking the grid.
- The game checks for a win or tie after each move.
- The game continues until there's a winner or the grid is full (tie).

AI Choices:

- Random AI picks any available spot randomly.
- Smart AI uses the Minimax Algorithm to find the best possible move by evaluating all outcomes.

Code Breakdown

- Board Display:

the `print_board(board)` function visually updates the 3x3 grid.

- Player Moves:

`player_move()` prompts the player to choose a spot (1-9) and places their mark if it's valid.

- AI Logic:

Random AI: Chooses a move randomly from available spots.

Smart AI (Minimax Algorithm): Recursively checks possible outcomes of moves, evaluates scores, and selects the optimal move for the AI.

- Game Conditions:

`check_winner(board, player)` checks if a player has 3 marks in a row.

`check_tie(board)` checks if the board is full without a winner.

Overview of the Game

Game Results and Scoring

- Scoring System:

Each player's score is tracked and displayed at the end of each game.

Results are saved in a text file (game5.txt), recording the player's name and score.

- Game End:

If a player wins, the game announces the winner.

In case of a tie, the game declares it and prompts the players to play again or quit.

- Saving Results:

After the game ends, the player's name and score are written to a file, so the results can be reviewed later.

Welcome to Tic-Tac-Toe!

enter your name

Choose mode: '1' for Human vs Human, '2' for Human vs AI (random), '3' for Human vs AI (smart): 3

```
  |  |  
--  
  |  |  
--  
  |  |  
--
```

Player X, enter your move (1-9): █

```
| 0 |
```

```
-----
```

```
|  |
```

```
-----
```

Player X, enter your move (1-9): 9

```
|  | x
```

```
-----
```

```
| 0 |
```

```
-----
```

```
|  | x
```

```
-----
```

AI chooses spot 6

```
|  | x
```

```
-----
```

```
| 0 | 0
```

```
-----
```

```
|  | x
```

```
-----
```

Player X, enter your move (1-9): █


```
-----  
  |  | x  
-----
```

Player X, enter your move (1-9): 8

```
x | o | x  
-----
```

```
  | o | o  
-----
```

```
  | x | x  
-----
```

AI chooses spot 4

```
x | o | x  
-----
```

```
o | o | o  
-----
```

```
  | x | x  
-----
```

Player O wins!

Play again? (y/n):



THANK YOU