THE PLAY GROUND
S3SW

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Coding Techniques Applied:

- **Modular structure**: Functions are used to organize code.

- **File handling**: Especially in the quiz game, reading and writing from external files.

- **Randomization**: For AI decisions, quiz questions, word scramble, and number guessing.

- **Basic AI**: Implemented in the Tic-Tac-Toe game for simple move decision-making.

- **Loops and conditionals**: Fundamental to the mechanics of each game for control flow.

Code Structure:

- Number Gussing game :
    gussing_game(): the main method of the game
    addpoint(): to keep track of the player score
- Word Scramble game :

    scrambleGame(): main method of the game

    scramble_word(): function to scramble the word

- Hang man game:
    hang_man_game(): main method of the game
    getRandomWord(): choose a word randomly
    displayBoard(): DISPLAY BOARD
    getGuess(): ENSURE THAT (SINGLE,NOT GUESSED
    BEFORE,IN ALPHAPET)
    playAgain(): ask if he want to play again
    updateLeaderboard(): update leaderBoard
- Quiz game:
    quiz_game():main method of the game
    load_questions():read questions from file
    load_leaderboard():read leaderboard from file
    save_leaderboard(): save leaderboard
    update_leaderboard():update leaderboard
    quiz_Random(): give random question
    display_leaderboard(): displays leaderboard
- Tic-tac-toe:
    tic_tac_toe(): main method of the game
    print_board(): to print the game board
    check_winner(): to check if a player has won
    check_tie():to check if there is a tie

player_move():for the player's move
minimax(): Minimax algorithm for AI move
ai_move():for AI move using Minimax

Walk throw of the game

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

This is the min menu of the game first the player need to choose what he want to do then if he choose play This menu show up :

```
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
```

Then the Player need to choose what to play
Then if he choose EXIT he returns back to the main menu and if he choose to see the leaderboard this will show up and he can choose the game he wants:

```
choose one :
1)tic-tac-toe
2)wordScramble
3)quizGame
4)gussingGame
5)hangManGame
6)Exit
please enter 1,2,3,4,5,6
```

Task Division

- Youssef Mahmoud :
  Gussing game and the main menu

- Asmaa Aboushady :
  Hang man game

- Kenzy Mohamed
  Scramble game

- Mazen Eldeeb
  Tic-tac-toe

- Perihane Hossam
  Quiz game

Challenges Encountered

1. Leader board implementation
2. To make every game in different folder and then Make them work in the same file
3. How to share the code to the squad and gethub in genral
4. How to draw the hang man game ASCII art

Lessons Learned

This project combines fun, creativity, and key Python programming concepts in a well-rounded, collaborative development environment. It's an excellent to showcase our beginner-to-intermediate coding skills, focusing on user engagement through simple, replayable mini-games.

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