Tic Tac Toe Game

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Abstract

- This project is a simple **Tic Tac Toe game** made using the **C programming language**.
- It allows two players to play on a **3x3 grid** by placing **‘X’ and ‘O’ alternately**.
- The program checks after each move to see if a player has won or if the game ends in a draw.
- The code uses basic concepts like **arrays, loops, and conditions**, making it easy to understand for beginners.
- This project shows how a small game can be built using simple programming logic.

Objective

- To design and implement a console-based two-player game
  To practice array manipulation and input validation
  To apply modular programming (functions for board, input, and checking results)
  To strengthen problem-solving and logical thinking skills

Discussion

- To play the game, players take turns marking their chosen cell on a **3x3 grid**.
- Player 1 uses **X** and Player 2 uses **O**.
- The players continue until one of them successfully places **three of the same symbols in a row**—horizontally, vertically, or diagonally.
- The first player to complete such a row is declared the **winner**.
- If all cells are filled and no row is completed, the game ends in a **tie**.
- This simple mechanism makes the game both **interactive** and **fun**, while demonstrating the use of **arrays, loops, and conditions** in programming.

Discussion

Here is a picture of how the screen will look after running the game. Player will fill the boxes with ‘x’ and ‘o’ through number ‘1-9’.

```
PS C:\Users\USER\Desktop\kallu> gcc toe.c
PS C:\Users\USER\Desktop\kallu> .\a.exe
Enter Player 1 name: antor
Enter Player 2 name: mahim

 1 | 2 | 3
---+---+---
 4 | 5 | 6
---+---+---
 7 | 8 | 9

antor's turn (X). Enter position (1-9): 5

 1 | 2 | 3
---+---+---
 4 | X | 6
---+---+---
 7 | 8 | 9

mahim's turn (O). Enter position (1-9): 4

 1 | 2 | 3
---+---+---
 O | X | 6
---+---+---
 7 | 8 | 9

antor's turn (X). Enter position (1-9): 3
```

Discussion

Here is a picture of how of the screen will look after a player has won. There also shown a question that if anyone can play than he type yes or no.

```
mahim's turn (O). Enter position (1-9): 6

 1 | 2 | X
---+---+---
 O | X | O
---+---+---
 7 | 8 | 9

antor's turn (X). Enter position (1-9): 7

 1 | 2 | X
---+---+---
 O | X | O
---+---+---
 X | 8 | 9

Congratulations antor! You won this round.

Scoreboard:
antor: 1
mahim: 0
Draws: 0

Do you want to play again? (y/n):
```

Discussion

```
ronaldo's turn (O). Enter position (1-9): 6

 X | O | X
---+---+---
 X | O | O
---+---+---
 O | 8 | X

antor 's turn (X). Enter position (1-9): 8

 X | O | X
---+---+---
 X | O | O
---+---+---
 O | X | X

It's a draw!

Scoreboard:
antor : 1
ronaldo: 0
Draws: 1

Do you want to play again? (y/n):
```

If the screen shows that after running the game it means that the match is **tie** and if we like to play again we have to click the **‘y’** button.

Conclusion

- I have successfully designed an object oriented program, which is TicTacToe game with the help of my respected team members. Based on the results generated by the tests conducted on the program, the TicTacToe game ran smoothly. Fortunately, no errors occurred while I tested it.