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**Mini project tic tac toe**

**Introduction :**

This is the most popular game that is played between 2 players. The goal in this game to align 4 players symbols like ( X and O ) horizontal, vertical and diagonal . In this game we are using 4\*4 grids to make the game more challenging . the aim of player is to align five consecutive mark to win the game this make the game interesting .

1. **Objectives.**
2. To design a graphical tic tac toe with 4\*4 grid .
3. To allows two of the player to take their turns after placing their marks.
4. And to also implement the game rules and also to detect who win and also detect the draw.
5. We also implement the loops and condition ,functions ,and 2D array for graphical representation .
6. We use python to code this game and make sure to check the accuracy of the game

**2.Tools and technology:**

* In this game we use python as a programming language .
* To maintain the programming environment we use visual studio code .
* For 2d array to represent the game board we use data structure .
* We also use variable to store player turns and move .

**3. Game rules:**

* The game is played on 4\*4 grid.
* Two players will take place to play one player with symbol X and second with O.
* Players are only allow to place their symbols in a empty cell.
* The player who take first 4 consecutive marks in rows , column and diagonal will win the game .
* The players are not allowed to play if all cell are filled .

**4. Implementation details:**

* First we have initialize the 4 empty grid by using initialize board().
* To print the board in friendly format we use display board().
* If player have to place a symbol we use make move().
* If no one will win and the board is full we display is draw().

**5.system design:**

* Initialize the board with 4 grids .
* Display the board to the players.
* Player 1 choose a row and column to place his symbol.
* Player 2 choose a row and column to place his symbol.
* After each move check:
* If a player make 4 consecutive marks declear win .
* If board is full declear draw.
* Else continue.

**6. Testing :**

* Case 1 : players will win by completing rows.
* Case 2: players will win by completing columns.
* Case 3: players will win by completing diagonals.
* Case 4: the match will be draw if cell are full and no one wins.
* Case 5: invalid move if you place the symbol but the cell is full.