

COMPUTER **ORGANIZATION AND** **ASSEMBLY LANGUAGE**



TIC TAC TOE

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INTRODUCTION:

Idea Generation:

Tic-tac-toe is a game in which two players take turns in drawing either an 'O' or an 'X' in one square of a grid consisting of nine squares. The winner is the first player to get three of the same symbols in a row. What the Project is about?

Play systems have incorporated alphabet panels and tic-tac-toe panels to help children improve their concentration. These tic-tac-toe panels improve hand-eye coordination and encourage better social interaction by better collaborative play. And children shouldn't just play with other children.

The reason behind developing this game was that we in C language developed this game but after studying COAL we became curious to develop the same game in Assembly language.

Rules Of Tic Tac Toe:

The game is played on a grid that's 3 squares by 3 squares.

You are X, your friend (or the computer in this case) is O.

The first player to get 3 of her marks in a row (up, down, across, or diagonally) is the winner.

When all 9 squares are full, the game is over.



Fig. 1

History of Tic-Tac-Toe:

An early variation of the game was played in the Roman Empire, around the 1st century B.C. It was called "terni lapilli," which means "three pebbles at a time." The game's grid markings have been found chalked all over Roman ruins. Evidence of the game was also found in ancient Egyptian ruins.

The first print reference to "noughts and crosses," the British name for the game, appeared in 1864. The first print reference to a game called "tick-tack-toe" occurred in 1884 but referred to a children's game played on a slate.

SYSTEM MODEL:

One of the player chooses 'O' and the other 'X' to mark their respective cells. The game starts with one of the players and the game ends when one of the players has one whole row/ column/ diagonal filled with his/her respective character ('O' or 'X'). If no one wins, then the game is said to be draw.

Initially the game asks for the player names and the choice for 'X' or 'O'. Then the game starts and 3x3 tic tac toe appears.

Main Screen:

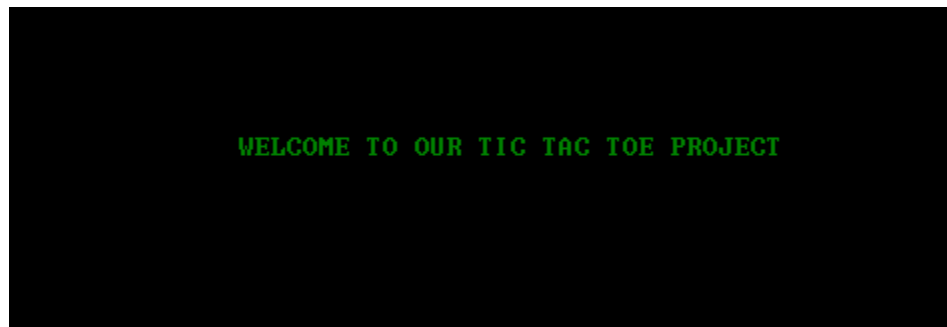


Fig. 2a

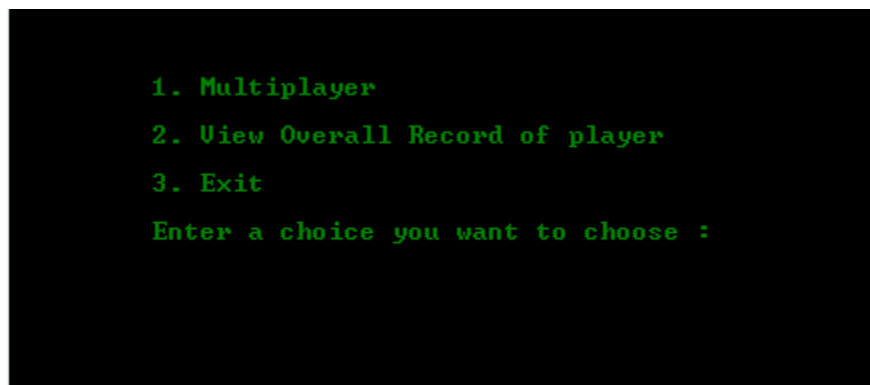


Fig. 2b

Players Name:

The Program will ask the users to input their names and choice to select 'X' or 'O'.

```
Enter player 1 name : talal
Current record
New file created
Enter player 2 name : uzair
Current record
New file created
Enter which option player 1 want to choose(X/O) :
```

Fig. 3b

The Grid View:

```
talal(X) VS uzair(O)

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

talal ! Its your turn. Choose your option :
```

Fig. 3

Player Winning:



Fig. 4a

Round Results:

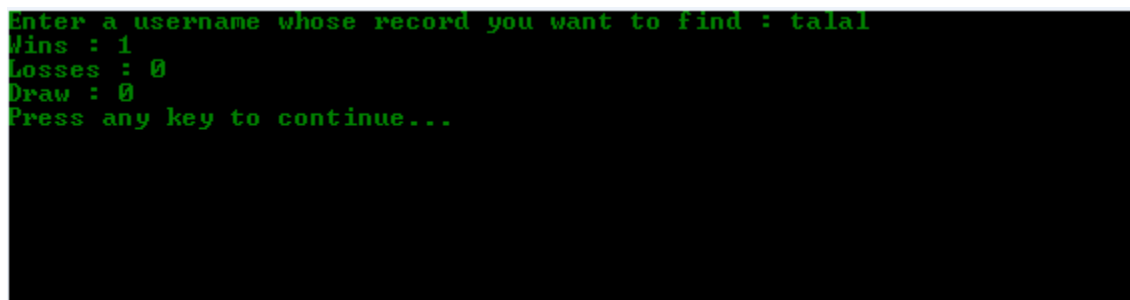


Fig. 5a

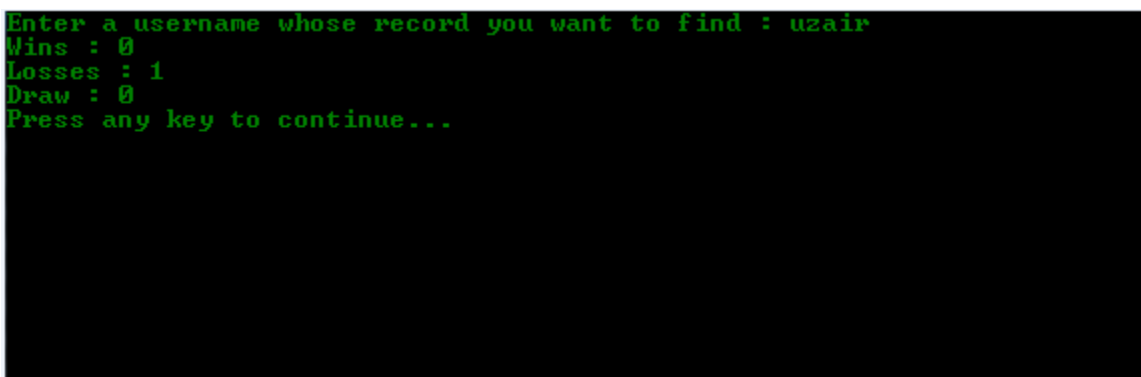
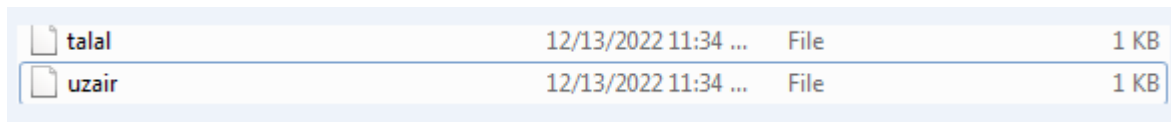


Fig. 5b

Players Name Storage using Filing:

As a vital part of our project, we have immersed File Handling Concept into it. We have used File Read and Write Techniques. Whoever plays the game a file of their name is made and the score is stored in the file. If the Player wins his score is inserted in the file, if loses 0 is append in the file and if the game is draw 1 is written in both player files.





| | | | |
|---|----------------------|------|------|
|  talal | 12/13/2022 11:34 ... | File | 1 KB |
|  uzair | 12/13/2022 11:34 ... | File | 1 KB |

Fig. 6a

FUTURE WORK:

In the future we want to add more modifications on this program by making it more efficient by adding AI technology (Human vs. Computer) and more than 3x3 dimensions.