



A
Project Report
On
“Tic Tac Toe Game”

For The Subject
Programming In C

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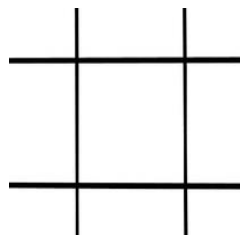


1. Introduction to & objective of Tic Tac Toe Game :

- Our project name is Tic-Tac-Toe game.
- The game is developed for full-time entertainment and enthusiasms.
- Though the proposed game is an action game, it doesn't involve any violence.
- This game is very popular and is fairly simple by itself.
- It is actually a two player game.
- In this game, there is a board with $n \times n$ squares.
- In our game, it is 3×3 squares.
- The goal of Tic-Tac-Toe is to be one of the players to get three same symbols in a row - horizontally, vertically or diagonally - s on a 3×3 grid .

2. Overview :

- This game can be played in a 3×3 grid (shown in the figure below) .
- The game can be played by two players. There are two options for players
- (a) Human (b) Computer.





2.1 Players :

- For the option human, both the players are human .
- For the option computer, the first player is human and the second player is computer .

3.Theory Of Game :

- A player can choose between two symbols with his opponent, usual games use “X” and “O”.
- If first player choose “X” then the second player have to play with “O” and vice versa.
- A player marks any of the 3x3 squares with his symbol (may be “X” or “O”) and his aim is to create a straight line horizontally or vertically or diagonally with two intensions:

a) Create a straight line before his opponent to win the game.

b) Restrict his opponent from creating a straight line first.

- In case logically no one can create a straight line with his own symbol, the game results a tie. Hence there are only three possible results – a player wins, his opponent (human or computer) wins or it’s a tie.



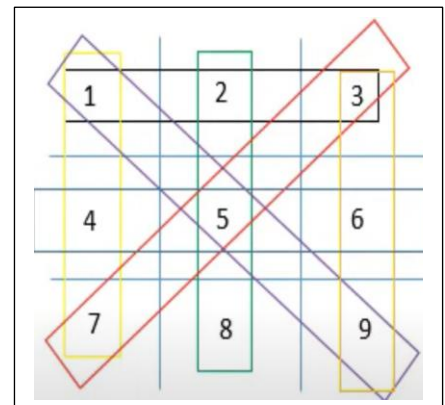
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1	2	3
4	5	6
7	8	9

Figure 2

- If any player is able to draw three **Xs** or three **Os** in the following combinations then that player wins.
- The combinations are:

a) 1, 2, 3	b) 4, 5, 6
c) 7, 8, 9	d) 1, 4, 7
e) 2, 5, 8	f) 3, 6, 9
h) 1, 5, 9	i) 3, 5, 7



4.1 Core Logic – AI :

- There are two core logics in this game – when both players are human, and when one is computer. Suppose the player use X and the computer use O .
- The logic used for the AI is as follows:
- **First move:**
 - a) If the center is free, get the center.
 - b) Otherwise, get any of the corners.
- **Second move:**
 - a) Block user from winning.





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- b) Option for winning by applying the following logic :
If the center is occupied by user, get any of the corners.

4.2 Core Logic - Humans:

- For each move, check whether any 3 combination is occupied by any player and display the winner accordingly.

5.1. Development Tools :

- Programming language that we used is - C language .
- We Researched this website and many more for going in more details - <https://www.geeksforgeeks.org> , https://youtu.be/gSitgqAJn_I & <http://dotcprograms.blogspot.com/2018/03/tic-tac-toe-game-using-c-program.html>
- Code blocks .
- Web browser : Google Chrome / Mozilla Firefox/ safari / Opera Mini .

5.2 System Requirements :

- Most of the computer games require high configurations of computer. But in the case of the proposed gaming system, the system requirements is not that much.
- The **minimum systems requirements** for the proposed project “Tic Tac Toe” game is mentioned below -

(a) Operating System: **Android 4.0**

(b)Processor: **1.2 GHz**





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(c) RAM: **512MB**

(d) Storage: **100 MB**

6. Features :

- Single Player
- Multi-Player
- It can have Background Music
- It can also have Different themes

7. Planning and Scheduling :

- Project planning and scheduling is a part of project management.
- The project planning stage requires several inputs, including conceptual proposals, project schedules.
- The development of this project is not successfully done without proper planning and scheduling.
- Project planning and scheduling is very important stage for us.
 - a) Analysis:** The maximum time for analysis phase of this project is 2 days.
 - b) Design:** The maximum time for design phase of this project is 5 days.
 - c) Implementation:** The maximum time for implementation phase of this project is 7 days.
 - d) Testing:** The maximum time for testing phase of this project is 1 days.





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8. Snap-shots :

a) When entering the player's name -

```

"C:\Users\navee\OneDrive\Documents\programming in c\tic tac\bin\Deb
We have added the background colour.....
Enter First Gamer Name: NAVIN_KUMAR
Enter Second Gamer Name: SHIVANK_BHARDWAJ
  
```

b) When 1st player is entering his/her choice number -

```

Tic Tac Toe

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NAVIN_KUMAR - (X) & SHIVANK_BHARDWAJ - (O)

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

NAVIN_KUMAR your turn, enter a number: 5
  
```





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a) When 2nd player is entering his/her choice number -

```

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NAVIN_KUMAR - (X) & SHIVANK_BHARDWAJ - (O)

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

SHIVANK_BHARDWAJ your turn, enter a number: 2_

```

a) Declaring the result !!, after a certain entry -

```

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NAVIN_KUMAR - (X) & SHIVANK_BHARDWAJ - (O)

-----
| 1 | 0 | 0 |
|---|---|---|
| X | X | X |
|---|---|---|
| 7 | 8 | 9 |
|---|---|---|

==>
Congratulations NAVIN_KUMAR , you won !!

```





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9. Functions used in the source code :-

Sr. No.	Function/method	Used for
01	checkWin()	Checking winner player
02	board()	Drawing the board
03	SetConsoleTextAttribute()	Color effect
04	main()	Controlling program execution by directing the calls to other functions in the program.
05	Header files used -	#include <stdio.h> #include <conio.h> #include <windows.h>
06	Data types	int , char
07	Loops	If ..else..ladder & do while

08	printf()	Printing / displaying output
09	scan()	Scanning / taking input from user
10	getch(); /return 0;	Returning to the function
11	\t	Horizontal tab
12	\n	Next line
14	return 1;	Game Is Over With Result
15	return 0;	Game Is In Process
16	return -1;	Game Is Over With No Result





10.1 Limitations:

- GUI is not so attractive.
- Only mouse interface is implemented, keyboard is not activated in the game.
- Score cannot be displayed properly because of limitation on number of connectors available

10.2 Future plan :

- Keyboard functions will be added.
- We want to design more complex boards for the game in future.
- Enhance the GUI.

11. Conclusion :

- The Tic Tac Toe game is most familiar among all the age groups.
- Intelligence can be a property of any purpose-driven decision maker.
- This basic idea has been suggested many times.
- An algorithm of playing Tic Tac Toe has been presented and tested that works in efficient way.
- Overall the system works without any bugs.

Thank You

- navin kumar