

TIC-TAC-TOE

done by Tarasiuk Volodymyr
(group B22, Vinnytsia IT-Academy)

Task obtained: 22.12.2022

Pre-defence: 17.01.2022, Teacher1_____

Defence: ____.01.2022, Teacher2_____

CONTENTS

1. System requirements;
2. About game “TIC-TAC-TOE”;
3. User guide;
4. Programmer instruction;
5. About the author.

1. System requirements

Operating system: DOS or Windows.

Hardware requirements:

- processor: Pentium Processor;
- RAM: 640 Kb (min);
- Hard Disc: 1 Gb (min).

2. About game "TIC-TAC-TOE"

Tic Tac Toe is a game for two players. On each turn, players leave an O or an X on a 3 by 3 grid. The first player to place three matching symbols in a horizontal, vertical, or diagonal row wins the game.

Examples: This game was won by the first player, X:



This is a game in which there is no winner - a draw:



The players soon discover that the best play of both sides necessarily leads to a draw. That is why mostly children play tic-tac-toe.

The simplicity of tic-tac-toe makes them an ideal pedagogical tool for teaching the concepts of combinatorial game theory and the branch of artificial intelligence that studies game tree searching.

3. User guide.

This is a console version of the game that takes place between two players. The player with the 'X' starts first. In order to make a move, you need to type a number from 1 to 9 on the numeric keypad, and use the auxiliary field to select an unoccupied cell of the field. Players make moves in turn.

```
Options for entering numbers:
1 | 2 | 3
--|--
4 | 5 | 6
--|--
7 | 8 | 9
--|--

TIC - TAC - TOE
Lets play the game !
Player 1 moves (X) ..... Player 2 moves (O)

- | - | -
--|--
- | - | -
--|--
- | - | -
--|--

Enter a number: _
```

If one of the players makes a line of three characters, then the game will stop and it will be written "the player has won!", if no one manages to make a line it will be written "it's a draw!"

4. Programmer instruction.

The project was written on C++.

Advantages of C++:

- Portability: C++ is one of the most used and portable to different platforms, almost any type of computer and operating system.
- Brevity: code written in C++ is very short in comparison with other languages.
- Modular programming: applications written on C++ can be made up of several source code files which are compiled separately and then linked together. This characteristic allows to link C++ code with the one written in other languages (for example, Assembler).
- Speed: The resulting code from a C++ compilation is very efficient due to the reduced size of the language itself.

Find and open the file tic-tac-toe.cpp. For edition, debugging and compiling program code you may use C++ compilers such as MS Visual Studio, Visual C++, C++ Builder, Borland C++, Dev C++ and similar.

Main global functions and variables :

- 1.char field []**-this is an array of symbols with the help of which the playing field is created.
- 2. void clearscreen()** - this is a function of the "void" type, which clears the console of unnecessary fields and inscriptions on top of the playing field.
- 3.bool check winner(char player)**- this is a function that accepts the sign of the player "X" or "O" and checks the victory condition. If the sign of one of the players is placed in the row of the **int wins [][]** array, then the player won, if not, then it is a draw.
- 4.void print field()**-this function draws the playing field for the game.
- 5. int play game ()**- this function takes the player's move and checks if it is correct.
- 6. char getchoice ()** - this function assigns players an "X" or "O" depending on the order of the code and checks if any player has won.
- 7.int main()** - this is the main function in which the char winner() function takes the value of the getchoice function and returns the winner or that the game ended in a draw.

5. About author

This project was done by Tarasiuk Volodymyr – Vinnitsya IT-Academy student
(group B22, January 2023).