

Jogo da Velha no C++

Segue abaixo a programação do clássico Jogo da Velha! O jogo é para dois participantes: Palyer 1 Player 2. Então vamos começar? Em inglês este jogo chama-se Tic Tac Toe, e a programação abaixo foi extraído do site:

http://runnable.com/U_bAcOEL2s1XrnH_/c%2B%2B-tic-tac-toe-game-for-array

Sua execução no Dev C++ ficará assim:

```

//Tic-Tac-Toe Game
//
#include <iostream>

using namespace std;

void display_board();
void player_turn();
bool gameover();

char turn;
bool draw = false;
char board[3][3] = {{'1', '2', '3'}, {'4', '5', '6'}, {'7', '8', '9'}};

int main()
{
    cout << "Tic Tac Toe Game\n";
    cout << "Player 1 [X] --- Player 2 [O]\n";
    turn = 'X';

    while (!gameover())
    {
        display_board();
        player_turn();
        gameover();
    }

    if (turn == 'O' && !draw)
    {
        display_board();
    }
}

```

```

C:\Dev-Cpp\tictactoe.exe
Tic Tac Toe Game
Player 1 [X] --- Player 2 [O]
-----
 1 | 2 | 3
 4 | 5 | 6
 7 | 8 | 9
-----
Player 1 turn [X]: 1
-----
 X | 2 | 3
 4 | 5 | 6
 7 | 8 | 9
-----
Player 2 turn [O]: 2
-----
 X | 0 | 3
 4 | 5 | 6
 7 | 8 | 9
-----
Player 1 turn [X]: 3
-----
 X | 0 | X

```

```

//Tic-Tac-Toe Game
//
#include <iostream>
using namespace std;

void display_board();
void player_turn();
bool gameover();

char turn;
bool draw = false;
char board[3][3] = {{'1', '2', '3'}, {'4', '5', '6'}, {'7', '8', '9'}};

int main()
{
    cout << "Tic Tac Toe Game\n";
    cout << "Player 1 [X] --- Player 2 [O]\n";
    turn = 'X';
}

```

```
while (!gameover())
{
    display_board();
    player_turn();
    gameover();
}

if (turn == 'O' && !draw)
{
    display_board();
    cout << endl << endl << "Player 1 [X] Wins! Game Over!\n";
}
else if (turn == 'X' && !draw)
{
    display_board();
    cout << endl << endl << "Player 2 [O] Wins! Game Over!\n";
}
else
{
    display_board();
    cout << endl << endl << "It's a draw! Game Over!\n";
}
system("PAUSE");
return EXIT_SUCCESS;
}

void display_board()
{
    cout << "-----" << endl << endl;
    cout << " | | " << endl;
    cout << " " << board[0][0] << " | " << board[0][1] << " | " << board[0][2] << endl;
    cout << "____|____|____" << endl;
    cout << " | | " << endl;
    cout << " " << board[1][0] << " | " << board[1][1] << " | " << board[1][2] << endl;
    cout << "____|____|____" << endl;
    cout << " | | " << endl;
    cout << " " << board[2][0] << " | " << board[2][1] << " | " << board[2][2] << endl;
    cout << " | | " << endl;
}

void player_turn()
{
    int choice;
    int row = 0, column = 0;

    if (turn == 'X')
    {
        cout << "Player 1 turn [X]: ";
    }
    else if (turn == 'O')
    {
        cout << "Player 2 turn [O]: ";
    }
}
```

```
}
cin >> choice;

switch (choice)
{
    case 1: row = 0; column = 0; break;
    case 2: row = 0; column = 1; break;
    case 3: row = 0; column = 2; break;
    case 4: row = 1; column = 0; break;
    case 5: row = 1; column = 1; break;
    case 6: row = 1; column = 2; break;
    case 7: row = 2; column = 0; break;
    case 8: row = 2; column = 1; break;
    case 9: row = 2; column = 2; break;
    default:
        cout << "You didn't enter a correct number! Try again\n";
        player_turn();
}

if (turn == 'X' && board[row][column] != 'X' && board[row][column] != 'O')
{
    board[row][column] = 'X';
    turn = 'O';
}
else if (turn == 'O' && board[row][column] != 'X' && board[row][column] != 'O')
{
    board[row][column] = 'O';
    turn = 'X';
}
else
{
    cout << "The cell you chose is used! Try again\n";
    player_turn();
}

}

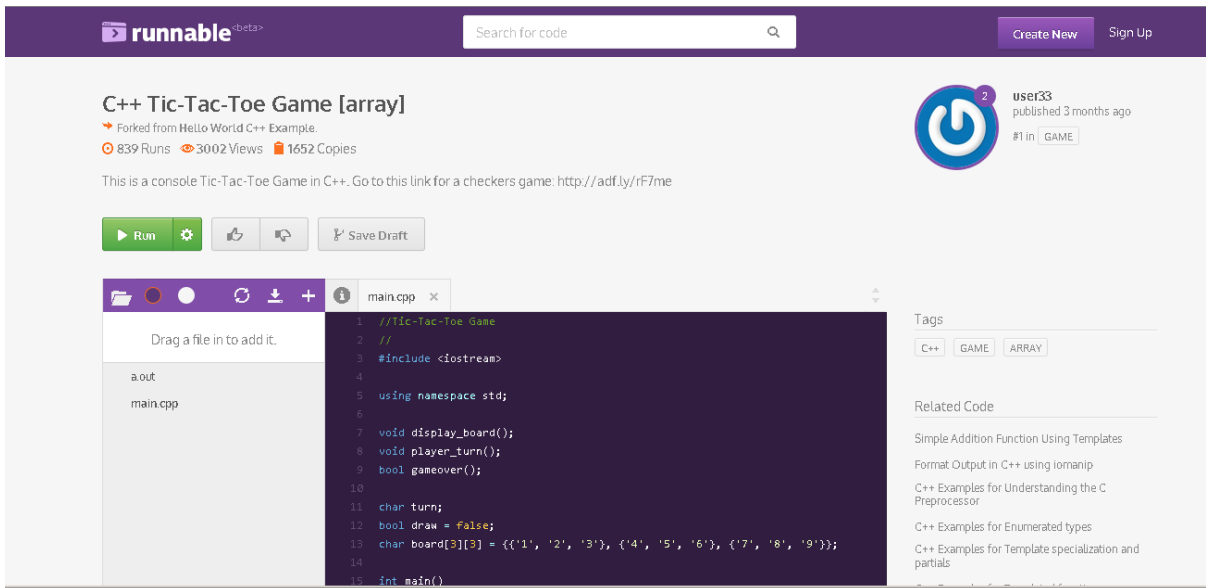
bool gameover()
{
    for (int i = 0; i < 3; i++)//Check for a win
    {
        if ((board[i][0] == board[i][1] && board[i][1] == board[i][2]) || (board[0][i] == board[1][i]
&& board[1][i] == board[2][i]) || (board[0][0] == board[1][1] && board[1][1] == board[2][2]) ||
(board[0][2] == board[1][1] && board[1][1] == board[2][0]))
        {
            return true;
        }
    }
}
for (int i = 0; i < 3; i++)//Check for draw
{
    for (int j = 0; j < 3; j++)
    {
        if (board[i][j] != 'X' && board[i][j] != 'O')
        {
```

```

        return false;
    }
}
}
draw = true;
return true;
}

```

No site, além da programação, existe a possibilidade também de executar online, clicando no botão RUN, ele compila e executa :



Exercícios

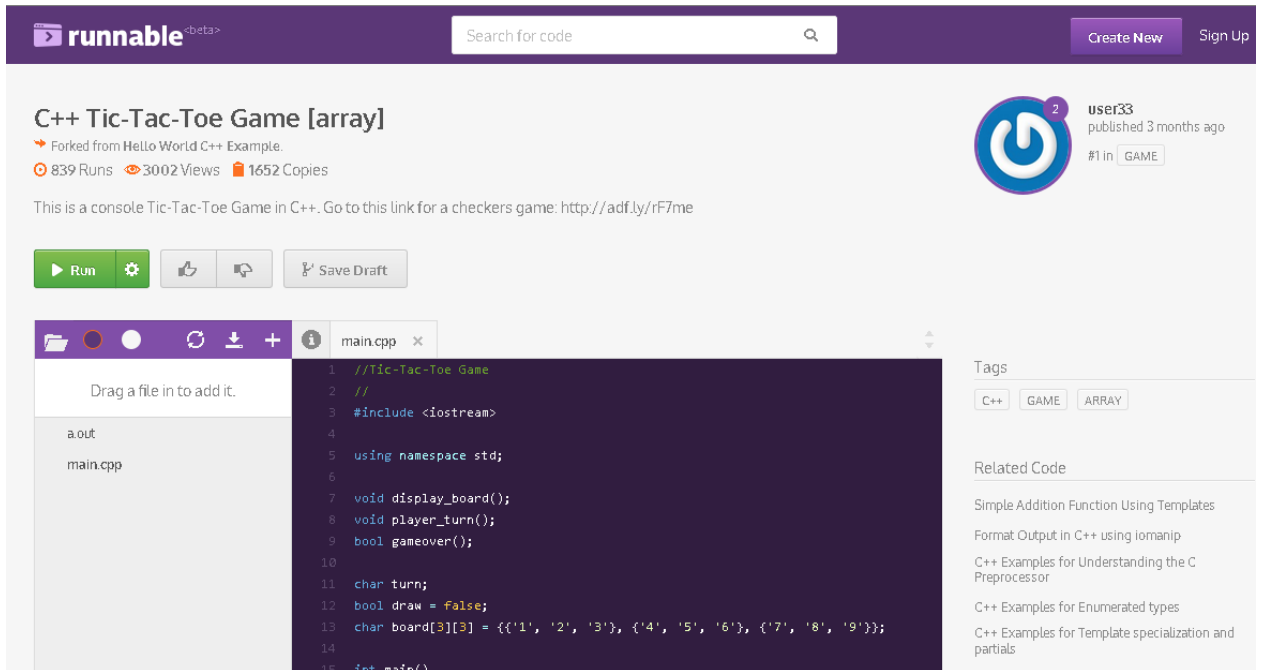
1. Troque todas mensagens, para a língua portuguesa:

cout << "Tic Tac Toe Game\n";	cout << "Jogo da Velha\n";
cout << "Player 1 [X] --- Player 2 [O]\n";	cout << "Jogador 1 [X] --- Jogador 2 [O]\n";
"Player 1 [X] Wins! Game Over!\n";	"Jogador 1 [X] Vence! Game Over!\n";
"Player 2 [O] Wins! Game Over!\n";	"Jogador 2 [O] Vence! Game Over!\n";
"It's a draw! Game Over!\n";	"Jogo fechado! Game Over!\n";
Player 1 turn [X]	Jogador 1 joga com [X]
Player 2 turn [O]	Jogador 2 joga com [O]
"You didn't enter a correct number! Try again\n";	"Você não entrou com uma posição correta! Tente novamente\n";
"The cell you chose is used! Try again\n"	"A célula que você escolheu já foi escolhida! Tente novamente\n"

2. Faça sua compilação e execução.

Para aprender mais

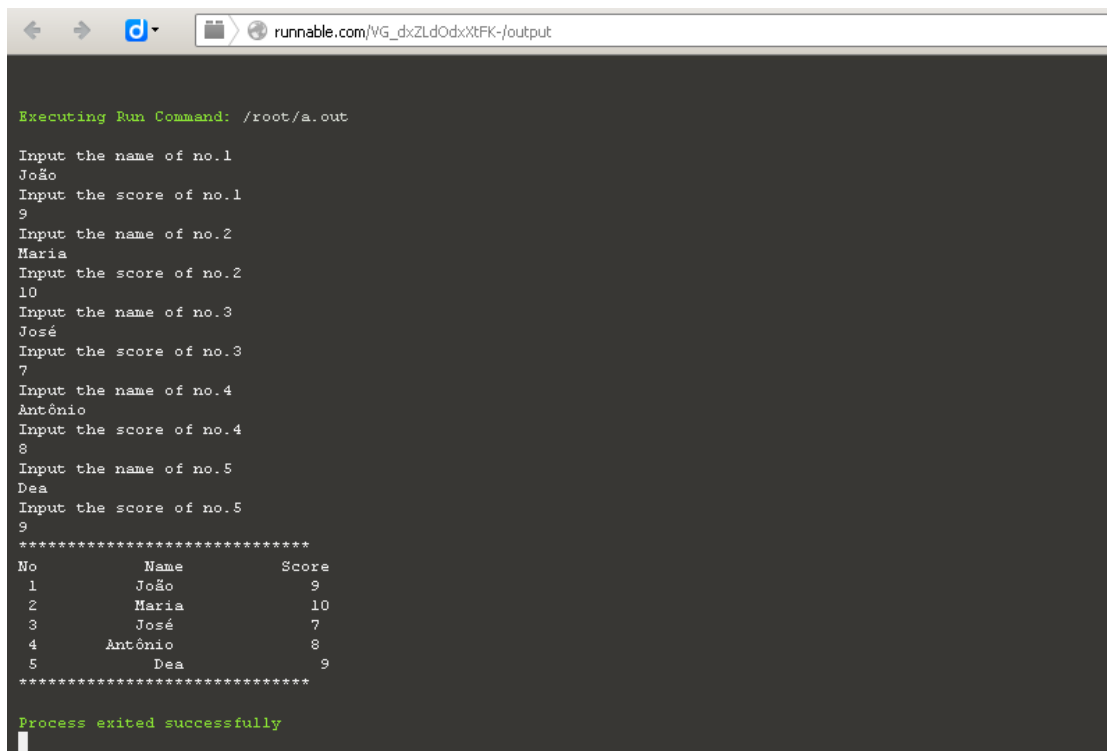
Entre no site novamente e escolha a opção Format Output in C++ using iomanip (2ª. Opção) no menu lateral à direita. Este programa permite a entrada de dados, com nome e um número, e ao final de 5 entradas ele lista todos os nomes por onde decrescente dos números, como em um ranking:



The screenshot shows the Runnable website interface. At the top, there's a search bar and navigation links for 'Create New' and 'Sign Up'. The main content area displays a code example titled 'C++ Tic-Tac-Toe Game [array]'. It includes statistics like '839 Runs', '3002 Views', and '1652 Copies'. Below the title, there are buttons for 'Run', 'Settings', 'Like', 'Share', and 'Save Draft'. A code editor shows the source code for 'main.cpp'. On the right side, there are tags for 'C++', 'GAME', and 'ARRAY', and a 'Related Code' section with links to other examples.

```
1 //Tic-Tac-Toe Game
2 //
3 #include <iostream>
4
5 using namespace std;
6
7 void display_board();
8 void player_turn();
9 bool gameover();
10
11 char turn;
12 bool draw = false;
13 char board[3][3] = {{'1', '2', '3'}, {'4', '5', '6'}, {'7', '8', '9'}};
14
15 int main()
```

Teste sua execução diretamente do site:



The screenshot shows the execution output of the C++ Tic-Tac-Toe Game. The output is displayed in a terminal window with a dark background and light text. It shows the program prompting for the name and score of five players. The input provided is: João (9), Maria (10), José (7), Antônio (8), and Dea (9). The final output is a ranking table showing the names and scores of the five players in descending order of score.

```
Executing Run Command: /root/a.out
Input the name of no.1
João
Input the score of no.1
9
Input the name of no.2
Maria
Input the score of no.2
10
Input the name of no.3
José
Input the score of no.3
7
Input the name of no.4
Antônio
Input the score of no.4
8
Input the name of no.5
Dea
Input the score of no.5
9
*****
No      Name      Score
1       João       9
2       Maria      10
3       José        7
4       Antônio    8
5       Dea         9
*****
Process exited successfully
```