

```
using System;
```

```
class Program
```

```
{
```

```
    public static string[,] tablero = new string[3,3];
```

```
    // jugador 1 = x
```

```
    // jugador 2 = o
```

```
    public static void jugar(int numJugador, int fila, int col){
```

```
        string pieza = "";
```

```
        if (numJugador == 1){
```

```
            pieza = "x";
```

```
        }else {
```

```
            pieza = "o";
```

```
        }
```

```
        if (tablero[fila,col] == "" ){
```

```
            tablero[fila,col] = pieza;
```

```
        }else{
```

```
            Console.WriteLine("Posicion ya esta ocupada");
```

```
        }
```

```
        //evaluar ganador
```

```
        int res = evaluar();
```

```
        if (res != 0 ){
```

```
            Console.WriteLine("El ganador es "+res);
```

```
        }
```

```
}
```

```
// mostrar tablero
```

```
public static void mostrarTablero(){  
    for (int f = 0; f<3; f++){  
        for (int c =0; c<3; c++){  
            Console.Write(tablero[f,c]+" | ");  
  
        }  
        Console.WriteLine();  
    }  
}
```

```
// inicializar el tablero
```

```
public static void iniciarTablero(){  
    for (int f = 0; f<3; f++){  
        for (int c =0; c<3; c++){  
            tablero[f,c] = "";  
  
        }  
        Console.WriteLine();  
    }  
}
```

```
// si devuelve 1 o 2 es el jugador si devuelve 0 nadie gano
```

```
public static int evaluar(){  
    //evalua horizontal  
    for (int f =0; f<3;f++){  
        if (tablero[f,0] == tablero[f,1] && tablero[f,1] == tablero[f,2] ){ // si son iguales  
            if (tablero[f,0] == "x"){ // evalua cual
```

```

        return 1;
    }else if (tablero[f,0] == "o"){
        return 2;
    }

}

}

}

// evaluar vertical
for (int c =0; c<3;c++){
    if (tablero[0,c] == tablero[1,c] && tablero[1,c] == tablero[2,c] ){ // si son iguales
        if (tablero[0,c] == "x"){ // evalua cual
            return 1;
        }else if (tablero[0,c] == "o"){
            return 2;
        }
    }

}

}

//diagonal
if (tablero[0,0] == tablero[1,1] && tablero[1,1] == tablero[2,2]){
    if (tablero[0,0] == "x"){ // evalua cual
        return 1;
    }else if (tablero[0,0] == "o"){
        return 2;
    }
}

}

```

```
    if (tablero[2,0] == tablero[1,1] && tablero[1,1] == tablero[0,2]){  
        if (tablero[1,1] == "x"){ // evalua cual  
            return 1;  
        }else if (tablero[1,1] == "o"){  
            return 2;  
        }  
    }  
    return 0;  
}
```

```
static void Main() {  
    //prueba 0  
    iniciarTablero();  
    jugar(1,0,0);  
    //mostrarTablero();  
    jugar(2,1,1);  
    jugar(1,0,1);  
    jugar(2,1,2);  
    jugar(1,0,2);  
  
    mostrarTablero();  
  
    //prueba 1 preventiva  
    iniciarTablero();  
    jugar (0,0,1);  
    jugar (1,0,2);  
    jugar (2,1,0);  
    jugar (1,1,0);
```

```
mostrarTablero();
```

```
//prueba 2 preventiva
```

```
iniciarTablero();
```

```
jugar (1,0,0);
```

```
jugar (0,2,1);
```

```
jugar (1,2,0);
```

```
jugar (1,2,0);
```

```
mostrarTablero();
```

```
//prueba 1 reactiva
```

```
iniciarTablero();
```

```
jugar (1,0,0);
```

```
jugar (0,3,1);
```

```
jugar (1,2,0);
```

```
jugar (1,2,0);
```

```
mostrarTablero();
```

```
//prueba 2 reactiva
```

```
iniciarTablero();
```

```
jugar (1,0,0);
```

```
jugar (2,2,2);
```

```
jugar (1,2,0);
```

```
jugar (1,2,0);
```

```
mostrarTablero();
```

```
}
```

```
}
```

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Execute

Result

compiled and executed in 1.696 secs

```
El ganador es 1
  x | x | x
  | a | a |
  |  |  |  |

Posicion ya esta ocupada
  x | x | x
  | a | a |
  |  |  |  |

Posicion ya esta ocupada
  x | x | x
  | a | a |
  | x | o | x
```

```
Unhandled Exception:
System.IndexOutOfRangeException: Index was outside the bounds of the array.
   at Program.Jugar (System.Int32 numJugador, System.Int32 file, System.Int32 col) [0x00001e] in <45f1ef04094ade5a35d3c83ac183e62>.0
   at Program.Main () [0x000003] in <45f1ef04094ade5a35d3c83ac183e62>.0

[ERROR] FATAL UNHANDLED EXCEPTION: System.IndexOutOfRangeException: Index was outside the bounds of the array.
   at Program.Jugar (System.Int32 numJugador, System.Int32 file, System.Int32 col) [0x00001e] in <45f1ef04094ade5a35d3c83ac183e62>.0
   at Program.Main () [0x000003] in <45f1ef04094ade5a35d3c83ac183e62>.0
```

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