

XO Game Report

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سكشن : 2

قسم هندسة الحاسبات ونظم التحكم - كلية الهندسة - جامعة المنصورة

.....

Source Code:

```
#include <stdio.h>
```

```
char Grid[3][3];
```

```
void line()
```

```
{  
    printf(".....\n");  
}
```

```
void Init_Grid()
```

```
{  
    int i,j;
```

```
int k=1;
for(i=0;i<3;i++)
{
    for(j=0;j<3;j++)
    {
        Grid[i][j]=k+48; //by ASCII Table
        k++;
    }
}
}
```

```
void Print_Grid()
{
    int i,j; // ANSI C
    for(i=0;i<3;i++)
    {
        for(j=0;j<3;j++)
        {
            printf("%c ",Grid[i][j]);
        }
        printf("\n");
    }
}
```

```
}
```

```
char Check_Play(char x,char name)
```

```
{
```

```
    int i,j;
```

```
    for(i=0;i<3;i++)
```

```
    {
```

```
        for(j=0;j<3;j++)
```

```
        {
```

```
            if(x==Grid[i][j])
```

```
            {
```

```
                Grid[i][j]=name;
```

```
                return 1;
```

```
            }
```

```
        }
```

```
    }
```

```
    return 0;
```

```
}
```

```
void Player(char name)
```

```
{
```

```
    char x,flag;
```

```
while(1)
{
    printf("This Turn is For Player %c :\n",name);
    Print_Grid();
    line();
    printf("Choose any number that shown on the Grid : ");
        fflush(stdout);
    scanf(" %c",&x);
        fflush(stdin);
    flag=Check_Play(x,name);
    if(flag==1)
    {
        break;
    }
    else
    {
        printf("\n");
        line();
        printf("Oops!, you must type a valid number, Be Careful\n");
        line();
        printf("\n\n");
        line();
    }
}
```

```
    }  
}  
}
```

```
char check_board_for_winner(char flag)
```

```
{  
    int i;  
    // Two Diagonal  
    if( Grid[0][0]==Grid[1][1] && Grid[1][1]==Grid[2][2] )  
    {  
        return 1;  
    }  
    else if( Grid[0][2]==Grid[1][1] && Grid[1][1]==Grid[2][0])  
    {  
        return 1;  
    }  
    else  
    {  
        // Horizontal  
        for(i=0;i<3;i++)  
        {  
            if(Grid[i][0]==Grid[i][1] && Grid[i][1]==Grid[i][2])
```

```
    {  
        return 1;  
    }  
}  
// Vertical  
for(i=0;i<3;i++)  
{  
    if(Grid[0][i]==Grid[1][i] && Grid[1][i]==Grid[2][i])  
    {  
        return 1;  
    }  
}  
}  
return -1;  
}
```

```
void Win(char flag)  
{  
    printf("\n\n");  
    line();  
    printf("Player %c win the Game\n",flag);  
    line();  
}
```

```
Print_Grid();  
line();  
}  
  
char Check_Draw()  
{  
    int i,j;  
    for(i=0;i<3;i++)  
    {  
        for(j=0;j<3;j++)  
        {  
            if(Grid[i][j]>47 && Grid[i][j]<58)  
            {  
                return 0;  
            }  
        }  
    }  
}  
printf("\n");  
line();  
printf("\t\t *** Draw ***\n");  
line();  
printf("*** We will start the game again ***\n");
```

```
    line();
    Init_Grid();
    return 1;
}

int main()
{
    int x=-1;
    Init_Grid();
    printf("\t\tThis Game is Prepared by Ayman Mohamed Nabil\n");
    printf("\t\tHello to X-O Game, Let's Play right now.\n");
    fflush(stdout);
    while(1)
    {
        printf("\n\n");
        line();
        Player('X');
        x=check_board_for_winner('X');
        if(x==1)
        {
            Win('X');
            break;
        }
    }
}
```



```
}  
if(Check_Draw()==1)  
{  
    continue;  
}  
printf("\n\n");  
line();  
Player('O');  
x=check_board_for_winner('O');  
if(x==1)  
{  
    Win('O');  
    break;  
}  
if(Check_Draw()==1)  
{  
    continue;  
}  
}  
printf("\n\tThanks for Playing\n");  
line();  
return 0;
```

}

X win the game

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\$./main.exe

This Game is Prepared by Ayman Mohamed Nabil

Hello to X-O Game, Let's Play right now.

.....

This Turn is For Player X :

1 2 3

4 5 6

7 8 9

.....

Choose any number that shown on the Grid : 3

.....

This Turn is For Player O :

1 2 X

4 5 6

7 8 9

.....

Choose any number that shown on the Grid : 6

.....

This Turn is For Player X :

1 2 X

4 5 O

7 8 9

.....

Choose any number that shown on the Grid : 5

.....

This Turn is For Player O :

1 2 X

4 X O

7 8 9

.....

Choose any number that shown on the Grid : 8

.....

This Turn is For Player X :

1 2 X

4 X O

7 O 9

.....

Choose any number that shown on the Grid : 7

.....

Player X win the Game

.....

1 2 X

4 X O

X O 9

.....

Thanks for Playing

.....

O win the game

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This Game is Prepared by Ayman Mohamed Nabil

Hello to X-O Game, Let's Play right now.

.....

This Turn is For Player X :

1 2 3

4 5 6

7 8 9

.....

Choose any number that shown on the Grid : 1

.....

This Turn is For Player O :

X 2 3

4 5 6

7 8 9

.....

Choose any number that shown on the Grid : 7

.....

This Turn is For Player X :

X 2 3

4 5 6

O 8 9

.....

Choose any number that shown on the Grid : 6

.....

This Turn is For Player O :

X 2 3

4 5 X

O 8 9

.....

Choose any number that shown on the Grid : 5

.....
This Turn is For Player X :

X 2 3

4 O X

O 8 9

.....
Choose any number that shown on the Grid : 2

.....
This Turn is For Player O :

X X 3

4 O X

O 8 9

.....
Choose any number that shown on the Grid : 3

.....
Player O win the Game

.....
X X O

4 O X

O 8 9

.....

Thanks for Playing

.....

X win the game after 2 draws

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This Game is Prepared by Ayman Mohamed Nabil

Hello to X-O Game, Let's Play right now.

.....

This Turn is For Player X :

1 2 3

4 5 6

7 8 9

.....

Choose any number that shown on the Grid : 1

.....

This Turn is For Player O :

X 2 3

4 5 6

7 8 9

.....

Choose any number that shown on the Grid : 4

.....

This Turn is For Player X :

X 2 3

O 5 6

7 8 9

.....

Choose any number that shown on the Grid : 7

.....

This Turn is For Player O :

X 2 3

O 5 6

X 8 9

.....

Choose any number that shown on the Grid : 2

.....

This Turn is For Player X :

X O 3

O 5 6

X 8 9

.....

Choose any number that shown on the Grid : 8

.....

This Turn is For Player O :

X O 3

O 5 6

X X 9

.....

Choose any number that shown on the Grid : 2

.....

Oops!, you must type a valid number, Be Careful

.....

.....

This Turn is For Player O :

X O 3

O 5 6

X X 9

.....

Choose any number that shown on the Grid : 5

.....

This Turn is For Player X :

X O 3

O O 6

X X 9

.....

Choose any number that shown on the Grid : 6

.....

This Turn is For Player O :

X O 3

O O X

X X 9

.....

Choose any number that shown on the Grid : 9

.....

This Turn is For Player X :

X O 3

O O X

X X O

.....

Choose any number that shown on the Grid : 3

.....

*** Draw ***

.....

*** We will start the game again ***

.....

.....

This Turn is For Player X :

1 2 3

4 5 6

7 8 9

.....

Choose any number that shown on the Grid : 1

.....

This Turn is For Player O :

X 2 3

4 5 6

7 8 9

.....

Choose any number that shown on the Grid : 3

.....
This Turn is For Player X :

X 2 O

4 5 6

7 8 9

.....
Choose any number that shown on the Grid : 2

.....
This Turn is For Player O :

X X O

4 5 6

7 8 9

.....
Choose any number that shown on the Grid : 4

.....
This Turn is For Player X :

X X O

O 5 6

7 8 9

.....

Choose any number that shown on the Grid : 6

.....

This Turn is For Player O :

X X O

O 5 X

7 8 9

.....

Choose any number that shown on the Grid : 5

.....

This Turn is For Player X :

X X O

O O X

7 8 9

.....

Choose any number that shown on the Grid : 7

.....

This Turn is For Player O :

X X O

O O X

X 8 9

.....

Choose any number that shown on the Grid : 8

.....

This Turn is For Player X :

X X O

O O X

X O 9

.....

Choose any number that shown on the Grid : 9

.....

*** Draw ***

.....

*** We will start the game again ***

.....

.....

This Turn is For Player X :

1 2 3

4 5 6

7 8 9

.....

Choose any number that shown on the Grid : 5

.....

This Turn is For Player O :

1 2 3

4 X 6

7 8 9

.....

Choose any number that shown on the Grid : 3

.....

This Turn is For Player X :

1 2 O

4 X 6

7 8 9

.....

Choose any number that shown on the Grid : 9

.....

This Turn is For Player O :

1 2 O

4 X 6

7 8 X

.....

Choose any number that shown on the Grid : 8

.....

This Turn is For Player X :

1 2 O

4 X 6

7 O X

.....
Choose any number that shown on the Grid : 1

.....
Player X win the Game
.....

X 2 O

4 X 6

7 O X
.....

Thanks for Playing
.....

O win the game after 1 draw

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This Game is Prepared by Ayman Mohamed Nabil

Hello to X-O Game, Let's Play right now.

.....

This Turn is For Player X :

1 2 3

4 5 6

7 8 9

.....

Choose any number that shown on the Grid : 2

.....

This Turn is For Player O :

1 X 3

4 5 6

7 8 9

.....

Choose any number that shown on the Grid : 3

.....

This Turn is For Player X :

1 X O

4 5 6

7 8 9

.....

Choose any number that shown on the Grid : 6

.....

This Turn is For Player O :

1 X O

4 5 X

7 8 9

.....

Choose any number that shown on the Grid : 5

.....

This Turn is For Player X :

1 X O

4 O X

7 8 9

.....

Choose any number that shown on the Grid : 9

.....

This Turn is For Player O :

1 X O

4 O X

7 8 X

.....

Choose any number that shown on the Grid : 8

.....

This Turn is For Player X :

1 X O

4 O X

7 O X

.....

Choose any number that shown on the Grid : 4

.....

This Turn is For Player O :

1 X O

X O X

7 O X

.....

Choose any number that shown on the Grid : 1

.....

This Turn is For Player X :

O X O

X O X

7 O X

.....

Choose any number that shown on the Grid : 7

.....

*** Draw ***

.....

*** We will start the game again ***

.....

.....

This Turn is For Player X :

1 2 3

4 5 6

7 8 9

.....

Choose any number that shown on the Grid : 2

.....

This Turn is For Player O :

1 X 3

4 5 6

7 8 9

.....

Choose any number that shown on the Grid : 3

.....

This Turn is For Player X :

1 X O

4 5 6

7 8 9

.....

Choose any number that shown on the Grid : 1

.....

This Turn is For Player O :

X X O

4 5 6

7 8 9

.....

Choose any number that shown on the Grid : 9

.....

This Turn is For Player X :

X X O

4 5 6

7 8 O

.....

Choose any number that shown on the Grid : 5

.....

This Turn is For Player O :

X X O

4 X 6

7 8 O

.....

Choose any number that shown on the Grid : 6

.....

Player O win the Game

.....

X X O

4 X O

7 8 O

.....

Thanks for Playing

.....