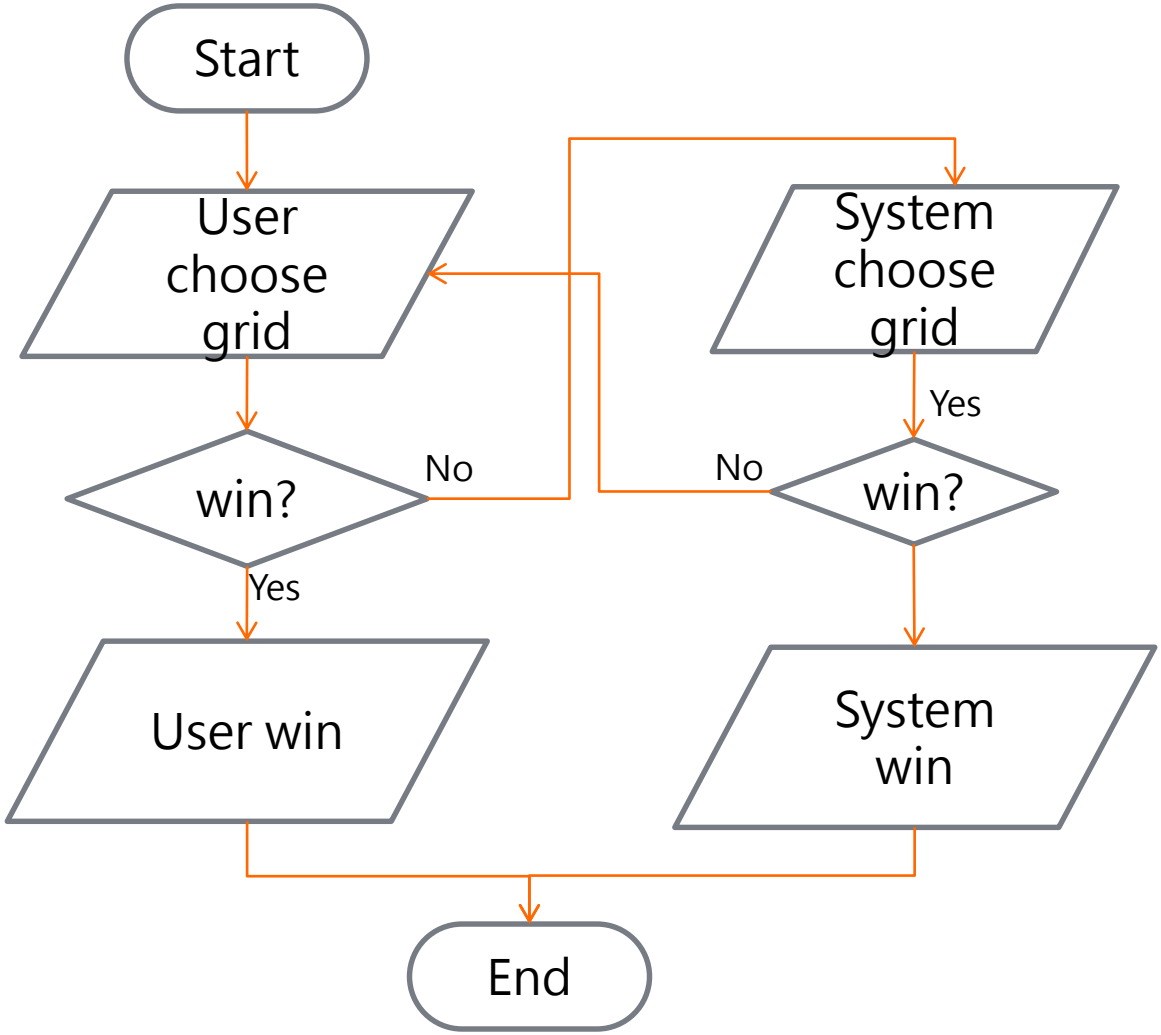
Introduction of Noughts and Crosses

- The object of Noughts and Crosses is to get a winning line of three Noughts or three Crosses in either a horizontal, vertical or diagonal row.

Flow Chart

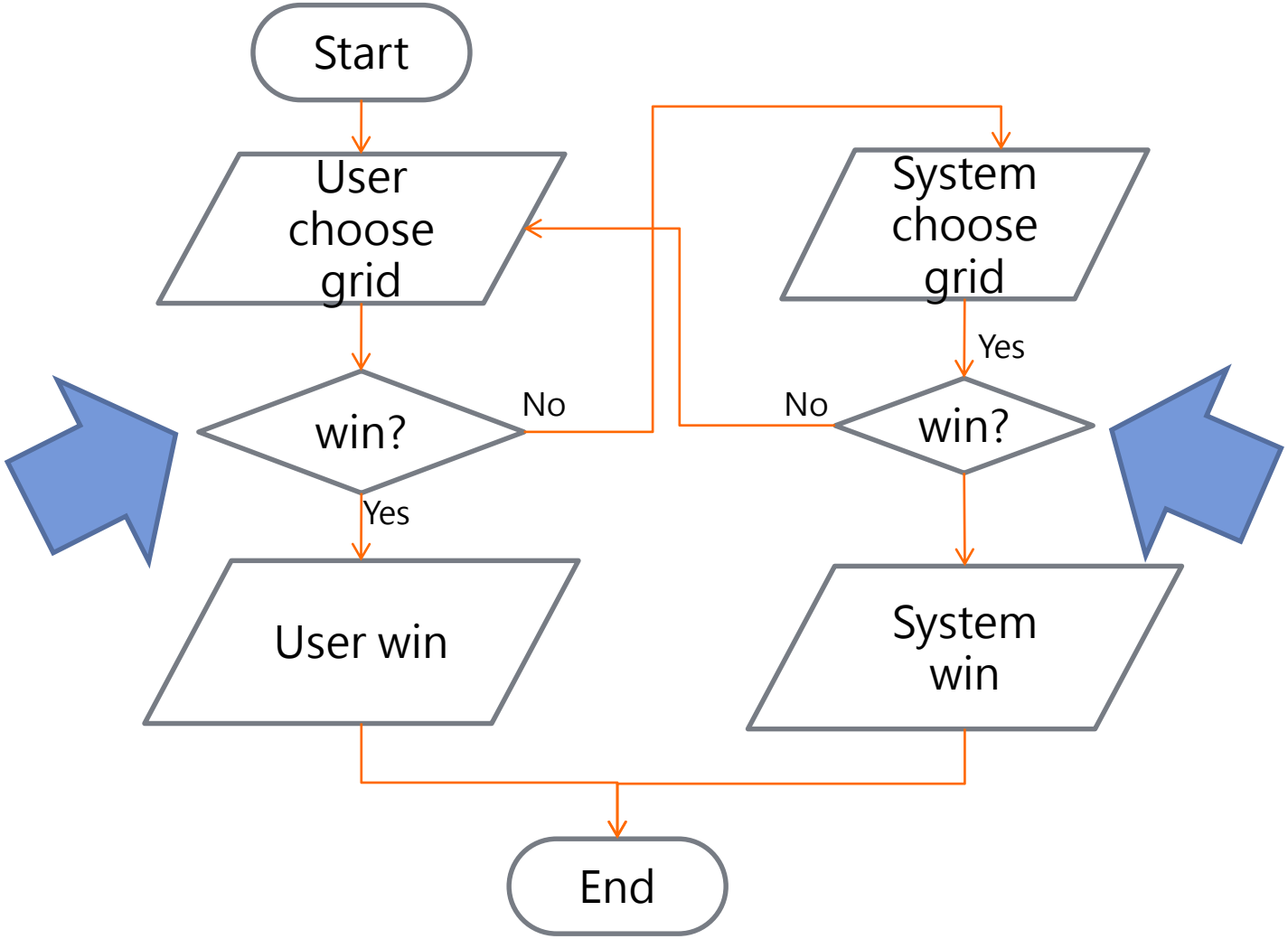

Start
User choose grid
win?
No
Yes
User win
System choose grid
Yes
No
win?
System win
End

PARAMETERS PASSING

```
#include<iostream>
using namespace std;
int test(int a[], int b)
{
  return a[0]+a[1]+a[2]+b;
}
void main()
{
  int array[3]={0,0,0};
  int b=3;
  int catch=test(array,b);
    cout<<catch;
  system("PAUSE");
}
```

Test function

Flow Chart


Start
User choose grid
win?
No
Yes
User win
System choose grid
Yes
No
win?
System win
End

Line Checking

O	X	
O	O	
X		X

grid[0]=0	grid[1]=1	grid[2]=2
grid[3]=0	grid[4]=0	grid[5]=2
grid[6]=1	grid[7]=2	grid[8]=1

```
int check_win(int grid[])//X win(return 1)or O win(return 0) or not yet(return 2)
{
    //the size of grid is 9 (from 0 to 8)
    //if value of grid[i] is 2, means that it draw nothing
    //if value of grid[i] is 0, means that it draw O
    //if value of grid[i] is 1, means that it draw X
    //now we only have grid[]
    //please check is any line has three O or three X
    //three O in one line, please return 0
    //three 1 in one line, please return 1
    //otherwise return 2(means no one win yet)



}
```

Line Checking

O	X	
O	O	
X		X

grid[0]=0	grid[1]=1	grid[2]=2
grid[3]=0	grid[4]=0	grid[5]=2
grid[6]=1	grid[7]=2	grid[8]=1

```
int check_win(int grid[])//X win(return 1)or O win(return 0) or not yet(return 2)
{

    for(int i=0;i<3;i++)
    {
        if(grid[i]==grid[i+3] && grid[i]==grid[i+6] && grid[i]!=2)
            return grid[i];
        if(grid[i*3]==grid[i*3+1] && grid[i*3]==grid[i*3+2] && grid[i]!=2)
            return grid[i*3];
    }
    if(grid[0]==grid[4]&& grid[0]==grid[8] && grid[0]!=2)
        return grid[0];
    if(grid[2]==grid[4]&& grid[6]==grid[4] && grid[2]!=2)
        return grid[2];
    return 2;
}
```

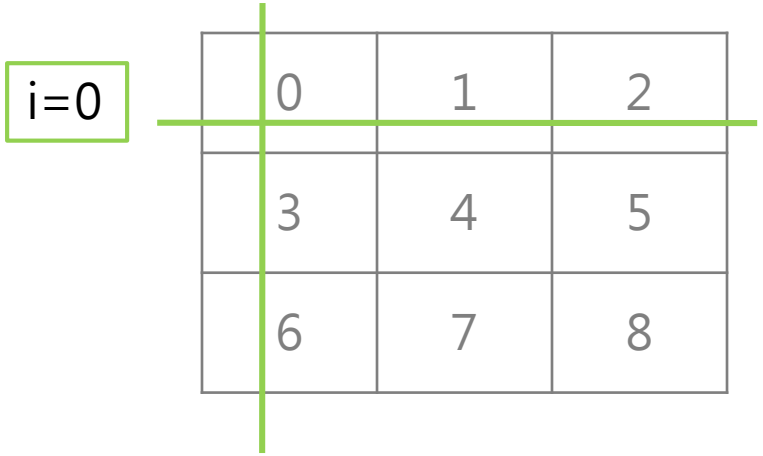
Line Checking

0	1	2
3	4	5
6	7	8

```
int check_win(int grid[])//X win(return 1)or O win(return 0) or not yet(return 2)
{

    for(int i=0;i<3;i++)
    {
        if(grid[i]==grid[i+3] && grid[i]==grid[i+6] && grid[i]!=2)
            return grid[i];
        if(grid[i*3]==grid[i*3+1] && grid[i*3]==grid[i*3+2] && grid[i]!=2)
            return grid[i*3];
    }
    if(grid[0]==grid[4]&& grid[0]==grid[8] && grid[0]!=2)
        return grid[0];
    if(grid[2]==grid[4]&& grid[6]==grid[4] && grid[2]!=2)
        return grid[2];
    return 2;
}
```

Line Checking




```
int check_win(int grid[])//X win(return 1)or O win(return 0) or not yet(return 2)
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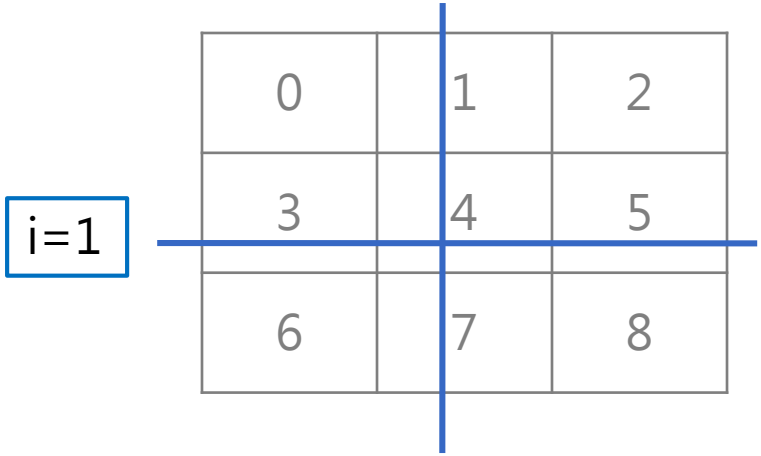
    {
        if(grid[i]==grid[i+3] && grid[i]==grid[i+6] && grid[i]!=2)
            return grid[i];
        if(grid[i*3]==grid[i*3+1] && grid[i*3]==grid[i*3+2] && grid[i]!=2)
            return grid[i*3];
    }
    if(grid[0]==grid[4]&& grid[0]==grid[8] && grid[0]!=2)
        return grid[0];
    if(grid[2]==grid[4]&& grid[6]==grid[4] && grid[2]!=2)
        return grid[2];
    return 2;
}
```

Line Checking

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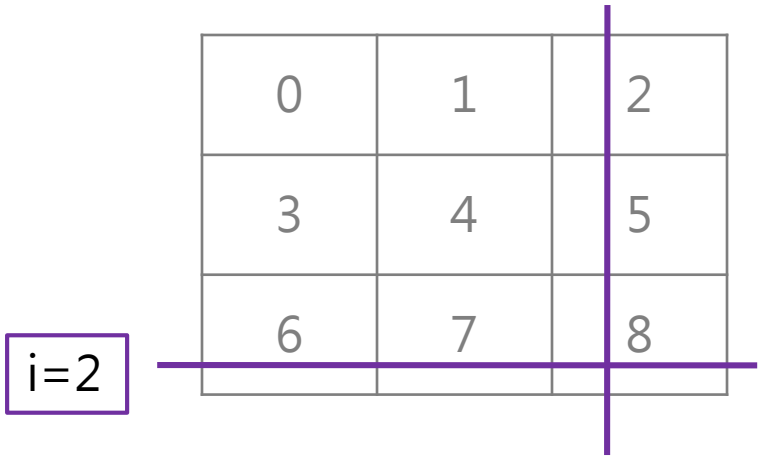
        if(grid[i]==grid[i+3] && grid[i]==grid[i+6] && grid[i]!=2)
            return grid[i];
        if(grid[i*3]==grid[i*3+1] && grid[i*3]==grid[i*3+2] && grid[i]!=2)
            return grid[i*3];
    }
    if(grid[0]==grid[4]&& grid[0]==grid[8] && grid[0]!=2)
        return grid[0];
    if(grid[2]==grid[4]&& grid[6]==grid[4] && grid[2]!=2)
        return grid[2];
    return 2;
}
```

Line Checking




```
int check_win(int grid[])//X win(return 1)or O win(return 0) or not yet(return 2)
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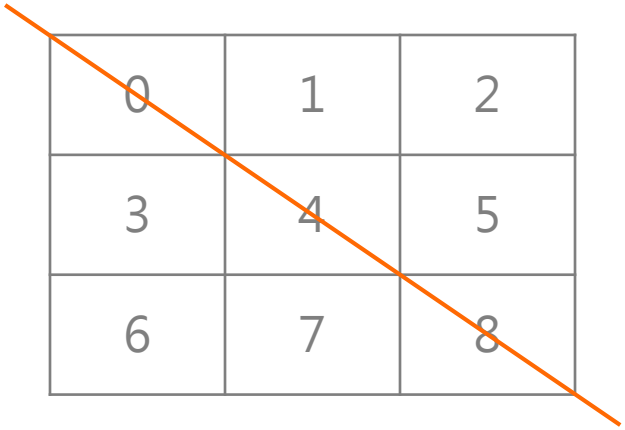
    for(int i=0;i<3;i++)
    {
        if(grid[i]==grid[i+3] && grid[i]==grid[i+6] && grid[i]!=2)
            return grid[i];
        if(grid[i*3]==grid[i*3+1] && grid[i*3]==grid[i*3+2] && grid[i]!=2)
            return grid[i*3];
    }
    if(grid[0]==grid[4]&& grid[0]==grid[8] && grid[0]!=2)
        return grid[0];
    if(grid[2]==grid[4]&& grid[6]==grid[4] && grid[2]!=2)
        return grid[2];
    return 2;
}
```

Line Checking




```
int check_win(int grid[])//X win(return 1)or O win(return 0) or not yet(return 2)
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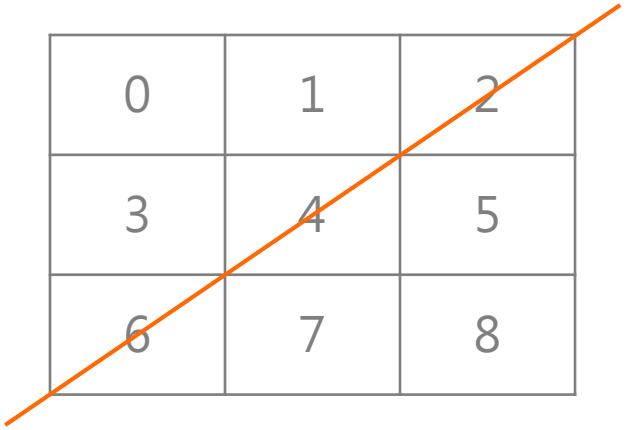
    for(int i=0;i<3;i++)
    {
        if(grid[i]==grid[i+3] && grid[i]==grid[i+6] && grid[i]!=2)
            return grid[i];
        if(grid[i*3]==grid[i*3+1] && grid[i*3]==grid[i*3+2] && grid[i]!=2)
            return grid[i*3];
    }
    if(grid[0]==grid[4]&& grid[0]==grid[8] && grid[0]!=2)
        return grid[0];
    if(grid[2]==grid[4]&& grid[6]==grid[4] && grid[2]!=2)
        return grid[2];
    return 2;
}
```

Line Checking




```
int check_win(int grid[])//X win(return 1)or O win(return 0) or not yet(return 2)
{

    for(int i=0;i<3;i++)
    {
        if(grid[i]==grid[i+3] && grid[i]==grid[i+6] && grid[i]!=2)
            return grid[i];
        if(grid[i*3]==grid[i*3+1] && grid[i*3]==grid[i*3+2] && grid[i]!=2)
            return grid[i*3];
    }
    if(grid[0]==grid[4]&& grid[0]==grid[8] && grid[0]!=2)
        return grid[0];
    if(grid[2]==grid[4]&& grid[6]==grid[4] && grid[2]!=2)
        return grid[2];
    return 2;
}
```


THANK
YOU