

Northern Michigan University (Marquette Co, MI)

CS 470-01-26W: Artificial Intelligence

Program 1

Due: Wednesday 28 January 2026 9:00 A.M. EDT

Toe-Tac-Tic

Create a folder called “PG1” in the top level of your CS470-01-26W folder. Place all files pertaining to this assignment into the top level of your PG1 folder. Place a (possibly empty) file called “DONE” into this folder when you are ready to have your programs graded. The only files you need to turn in are the .cc and .h files. Please don't turn in any files other than these!!

Use the strategy described in class to select the computer's move in a game of toe-tac-tic, a game identical to tic-tac-toe except that the player hits three in a row loses rather than wins.

The human plays X and always plays first. The computer plays O and always plays second.

When it is the human's turn, the program will prompt them to enter the row and column positions, in that order, one through three, indicating where the X should be placed.

After each turn, a new board should be printed. The program should end as soon as someone hits three in a row or after the board is filled. The program should print the winner, or indicate that neither player has won.

For example,

```
Welcome to Toe-Tac-Tic!!
```

```
| |
-+-
| |
-+-
| |
```

```
Please input row number: 3
Please input column number: 1
```

```
| |
-+-
| |
-+-
x| |
```

The computer plays:

```
| o |
```

```
-++-+-
|  |
-++-+-
X|  |
```

Please input row number: 2
Please input column number: 3

```
|O|
-++-+-
|  |X
-++-+-
X|  |
```

The computer plays:

```
|O|O
-++-+-
|  |X
-++-+-
X|  |
```

Please input row number: 3
Please input column number: 2

```
|O|O
-++-+-
|  |X
-++-+-
X|X|
```

The computer plays:

```
|O|O
-++-+-
|O|X
-++-+-
X|X|
```

Please input row number: 2
Please input column number: 1

```
|O|O
-++-+-
X|O|X
-++-+-
X|X|
```

The computer plays:

```
|O|O
-++-+-
X|O|X
-++-+-
X|X|O
```

Please input row number: 1

Please input column number: **1**

X		O		O
-	+	-	+	-
X		O		X
-	+	-	+	-
X		X		O

The computer has won!