



B2 - Stumpers

B-CPE-210

Tic Tac Toe

Duo Stumper



Tic Tac Toe

binary name: tictactoe

language: C

compilation: via Makefile, including re, clean and fclean rules



- The totality of your source files, except all useless files (binary, temp files, obj files,...), must be included in your delivery.
- Error messages have to be written on the error output, and the program should then exit with the 84 error code (0 if there is no error).



For this project, the **only** authorized functions are those of the standard `libc`.

You must write a program that simulate a game of Tic-Tac-Toe. Tic-Tac-Toe is played on a square grid (3x3 by default).

Two players face off and when it's their turn, they must each fill in a square with an assigned symbol. Whomever manages to line-up *n* identical symbols (horizontally, vertically, diagonally) is the winner (*n* being the size of the grid).



Usage: `./tictactoe [-p1 CHAR1] [-p2 CHAR2] [-s GRID_SIZE]`

-p1 CHAR1: defines the character used by the first player (default: X)

-p2 CHAR2: defines the character used by the second player (default: O, the letter)

-s GRID_SIZE: defines the size of the grid (default: 3).

The human player will place their symbol (in the form of a pair *x,y*) in a square. You will read the square's coordinates on the standard input. If the user's input is not in a valid format, your program should ask for it again. The two players cannot use the same symbol.



The upper lefthand square will have 0,0 for coordinates.

Italic yellow text represents user input.



```
Terminal
~/B-CPE-210> ./tictactoe

+----+
|    |
|    |
|    |
+----+

Player 1> 1,1

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

Player 2> 0,0

+----+
| 0   |
|  X  |
|    |
+----+

Player 1> 1,0

+----+
| 0X  |
|  X  |
|    |
+----+

Player 2> 1,2

+----+
| 0X  |
|  X  |
|  0  |
+----+

Player 1> 2,0

+----+
| 0XX |
|  X  |
|  0  |
+----+

Player 2> 2,2

+----+
| 0XX |
|  X  |
|  00 |
+----+

Player 1> 0,2

+----+
| 0XX |
|  X  |
| X00 |
+----+

Player 1 won!
```



```
Terminal
~/B-CPE-210> cat inputs
1,1
0,0
1,0
1,2
2,0
2,2
0,2
~/B-CPE-210> cat inputs | ./tictactoe | cat -e
+---+$
|   |$
|   |$
|   |$
+---+$
Player 1> +---+$
|   |$
| X |$
|   |$
+---+$
Player 2> +---+$
|O  |$
| X |$
|   |$
+---+$
... (and so on...)
Player 1> +---+$
|OXX|$
| X |$
|XOO|$
+---+$
Player 1 won!$
```