On the Subject of Boolean Maze
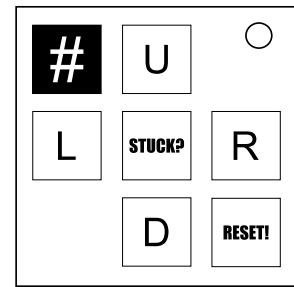
Punished by the wrath of Nor

This module contains four movement keys: **U, L, R, D**, a **STUCK?** key, a **RESET!** key and a display which will display random integers from 0 to 3.

Tips for Success

- In order to solve this module, travel from the starting point to the ending point.
  - Starting Location: (3rd,4th) positions of the serial
  - Ending Location: (5th,6th) positions of the serial
- Make sure to convert letters to numbers (A = 1, B = 2, ...) and take their value modulo 10.
- The starting and ending locations will be in (row,column) format, with the top left space of the maze being (0,0).
- Convert the number on the display to 2-digit binary.
- Use **U,L,R,D** to move Up, Left, Right, and Down respectively.
- A move is considered legal only if, upon using the two digits of the binary converted display as the two inputs for the logic gate in an adjacent space, would result in a 1. (See Appendix A)
- If you attempt to enter a space, and the logic gate would return a 0, you will receive a strike and you will not be moved.
- You may not leave the edges of the maze. Doing so will result in a strike, and you will not be moved.
- If you have no legal moves you can press **STUCK?** to change the display until you can move again, but be careful, using this when you have a legal move will result in a strike and you will be reset back to the start.
- If you think you may be lost you can press **RESET!** to reset back to the starting position.
- **NOTE:** If the Ending Location lands on a NOR or an AND, then it will shift 1 cell at a time until it is no longer a NOR/AND. The direction of the shift depends on the original displayed number (0 = UP, 1 = RIGHT, 2 = DOWN, 3 = LEFT). If the shift reaches the edge of the grid it will wrap around to the other side of the grid.

Maze

	0	1	2	3	4	5	6	7	8	9
0	NOR	XOR	OR	AND	OR	AND	XOR	NOR	OR	XOR
1	XOR	AND	OR	NOR	OR	OR	OR	AND	XOR	AND
2	OR	AND	OR	OR	XOR	NOR	OR	AND	OR	OR
3	AND	NOR	OR	NOR	OR	XOR	AND	NOR	OR	OR
4	OR	OR	AND	OR	OR	NOR	OR	OR	NOR	XOR
5	XOR	OR	AND	NOR	OR	OR	AND	NOR	XOR	OR
6	OR	OR	AND	NOR	OR	AND	XOR	OR	OR	XOR
7	XOR	AND	OR	OR	OR	XOR	NOR	NOR	OR	OR
8	XOR	OR	OR	OR	AND	AND	NOR	NOR	OR	XOR
9	OR	OR	XOR	NOR	AND	OR	XOR	OR	AND	NOR

Appendix A

Decimal	Binary	Logic Gates			
		NOR	XOR	OR	AND
0	00	1	0	0	0
1	01	0	1	1	0
2	10	0	1	1	0
3	11	0	0	1	1