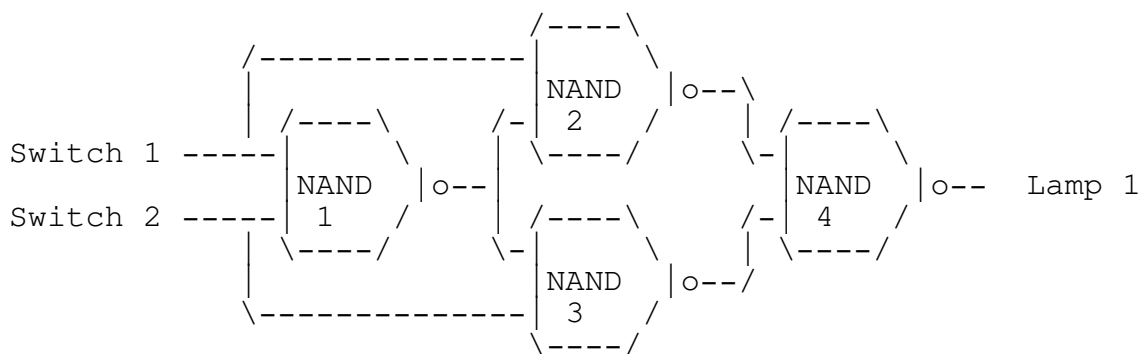


Logic Simulator Example 3 : An Exclusive OR gate from NAND gates

In the third example we are going to wire-up an Exclusive OR gate made out of four 2-input NAND gates. We will use two switches to select inputs to the circuit, and show the output on a lamp:



Again start up the logic simulator by typing

```
LOGIC
```

and pressing RETURN.

As before we have decided which NAND gates to use and labelled the diagram for future reference. We can now proceed to enter the circuit into the simulator.

Pressing the E key to begin making the connections, we can connect up the following:

2-input NAND number 1, input-1	to	Switch number 1
2-input NAND number 1, input-2	to	Switch number 2
2-input NAND number 2, input-1	to	Switch number 1
2-input NAND number 2, input-2	to	2-input NAND number 1
2-input NAND number 3, input-1	to	2-input NAND number 1
2-input NAND number 3, input-2	to	Switch number 2
2-input NAND number 4, input-1	to	2-input NAND number 2
2-input NAND number 4, input-2	to	2-input NAND number 3
Lamp number 1	to	2-input NAND number 4

followed by ESC to end.

Showing the devices on the screen requires :

```
Press V (for view) followed by C (for change)
Choose box 1 and then 2-input NAND number 1
Choose box 2 and then 2-input NAND number 2
Choose box 6 and then 2-input NAND number 3
Choose box 3 and then 2-input NAND number 4
```

Press the ESC key to stop putting further diagrams on the screen.

Verify that the connected circuit behaves as an Exclusive OR gate by pressing the number keys to set the switches according to the table below, and noting the lamp output.

Switch 1	Switch 2	Lamp 1
Low	Low	Low
Low	High	High
High	Low	High
High	High	Low

Save the circuit connections and views to a file by pressing S and entering

EOR.LOG

as the requested filename.

To finish using the logic simulator press Q.

→→→→→→→→