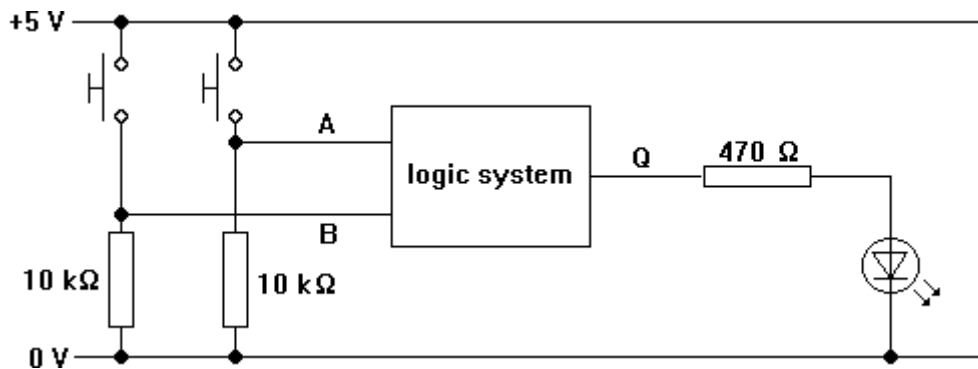


NAND-gate designs

1. Design a NAND-gate circuit which has this truth table. It acts as an Exclusive-OR gate.

B	A	Q
0	0	0
0	1	1
1	0	1
1	1	0

2. Assemble the circuit and test it with switches and an LED as shown below.



3. Design and test a NAND-gate system with two inputs and three outputs. The number of outputs which are high must correspond to the binary number fed into the inputs. Here is its truth table.

B	A	P	Q	R
0	0	0	0	0
0	1	1	0	0
1	0	1	1	0
1	1	1	1	1

4. Design and test a NAND-gate system which acts as a binary-to-one-of-four converter with this truth table.

B	A	W	X	Y	Z
0	0	1	0	0	0
0	1	0	1	0	0
1	0	0	0	1	0
1	1	0	0	0	1