Digital Electronics

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Digital Electronics

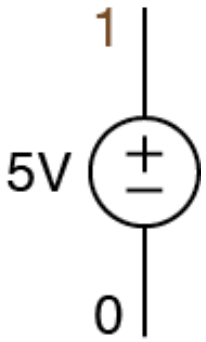
Binary Numbers:

- Voltages
- Binary Add
- Binary Multiply

Logic Gates:

- NOT
- OR
- AND
- NAND
- DeMorgan

Digital Electronics



Binary voltages:

5V = 1

0V = 0

Digital Electronics

Binary Add:

0 + 0 = 0

0 + 1 = 1

1 + 0 = 1

1 + 1 = 10

Digital Electronics

Binary Multiply:

0 * 0 = 0

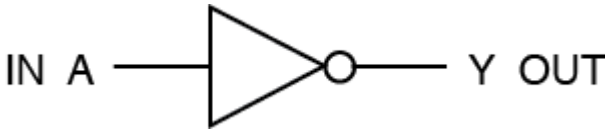
0 * 1 = 0

1 * 0 = 0

1 * 1 = 1

Digital Electronics

NOT



IN	OUT
0	1
1	0

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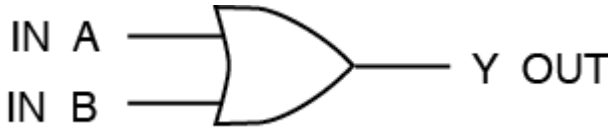
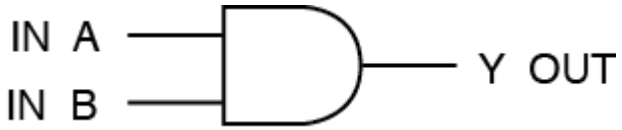
OR



IN A	IN B	OUT
0	0	0
0	1	1
1	0	1
1	1	1

Digital Electronics

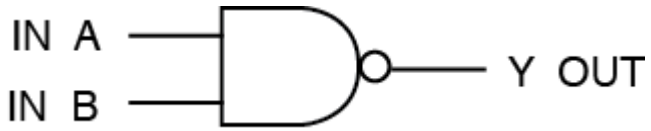
AND



IN A	IN B	OUT
0	0	0
0	1	0
1	0	0
1	1	1

Digital Electronics

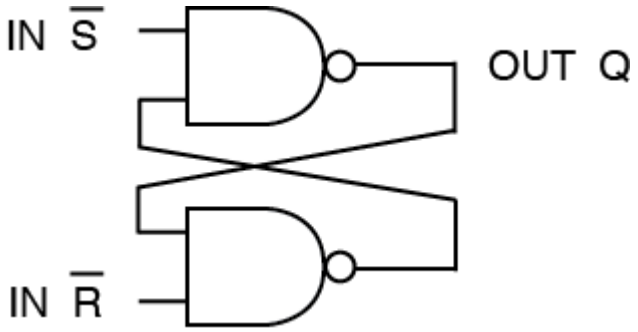
NAND



IN A	IN B	OUT
0	0	1
0	1	1
1	0	1
1	1	0

Digital Electronics

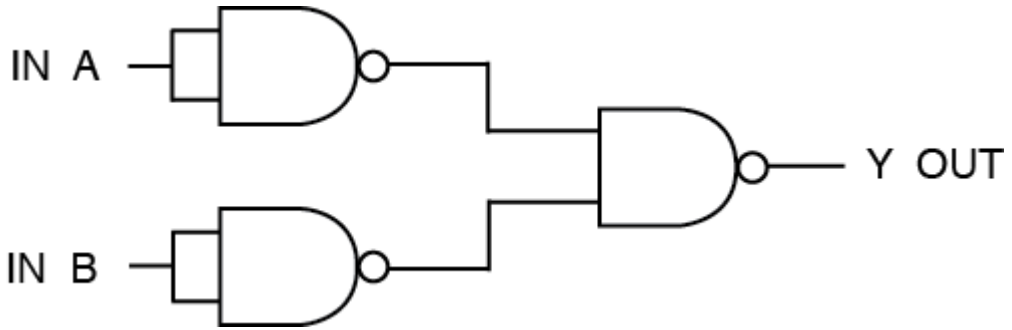
Flip-Flop



R	S	OUT
0	1	1
1	0	0
0	0	Last Out

Digital Electronics

DeMorgan's Theorem



IN A	IN B	OUT
0	0	1
0	1	1
1	0	1
1	1	0