

+7

+3

+10

C

A

B

00000111

00000011

00001010

↑↑↑↑↑↑↑↑

111

→ Carry bits set in status register.

00

01

10

11

When two bits are added, these are added using "Half adder"; a circuit inside ALU. Half Adder has two inputs and two outputs; i.e. Sum (S) and Carry (c).

A

B

S

C

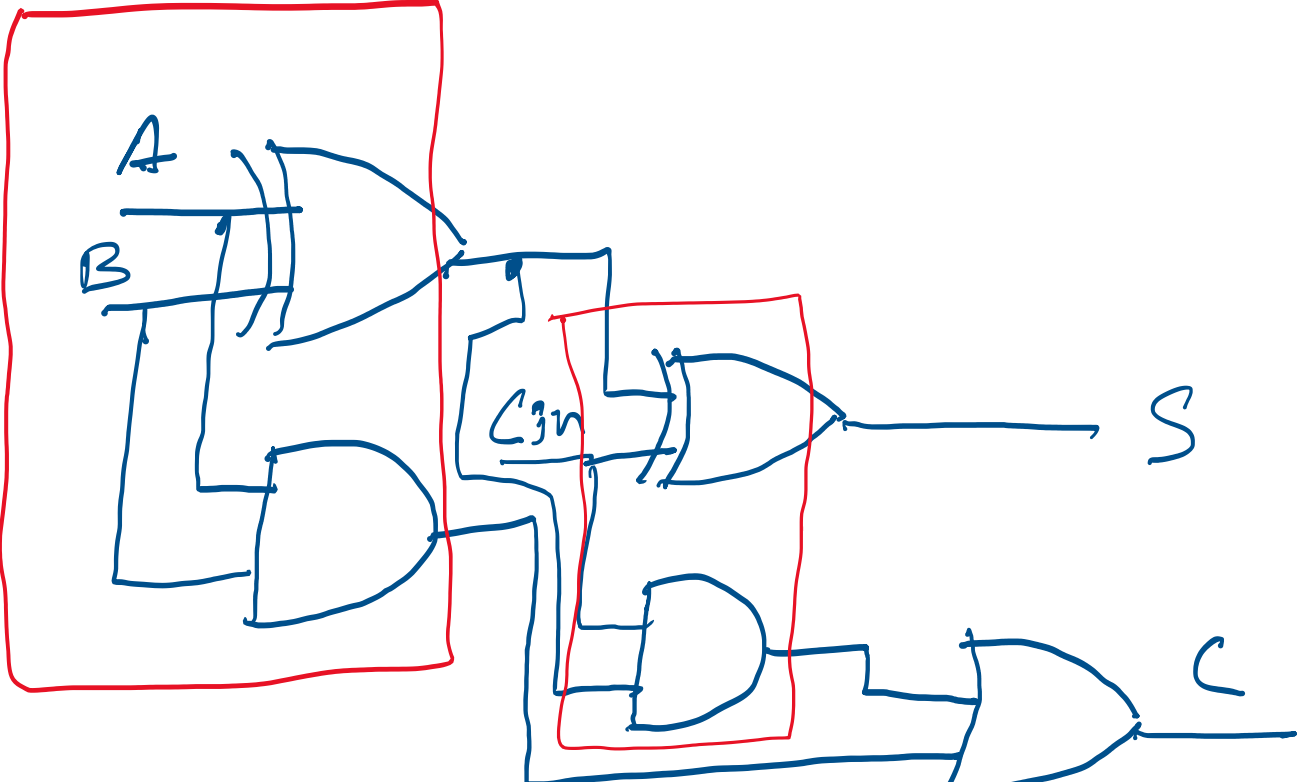
Half Adder

A	B	C	S
0	0	0	0
0	1	0	1
1	0	0	1
1	1	1	0

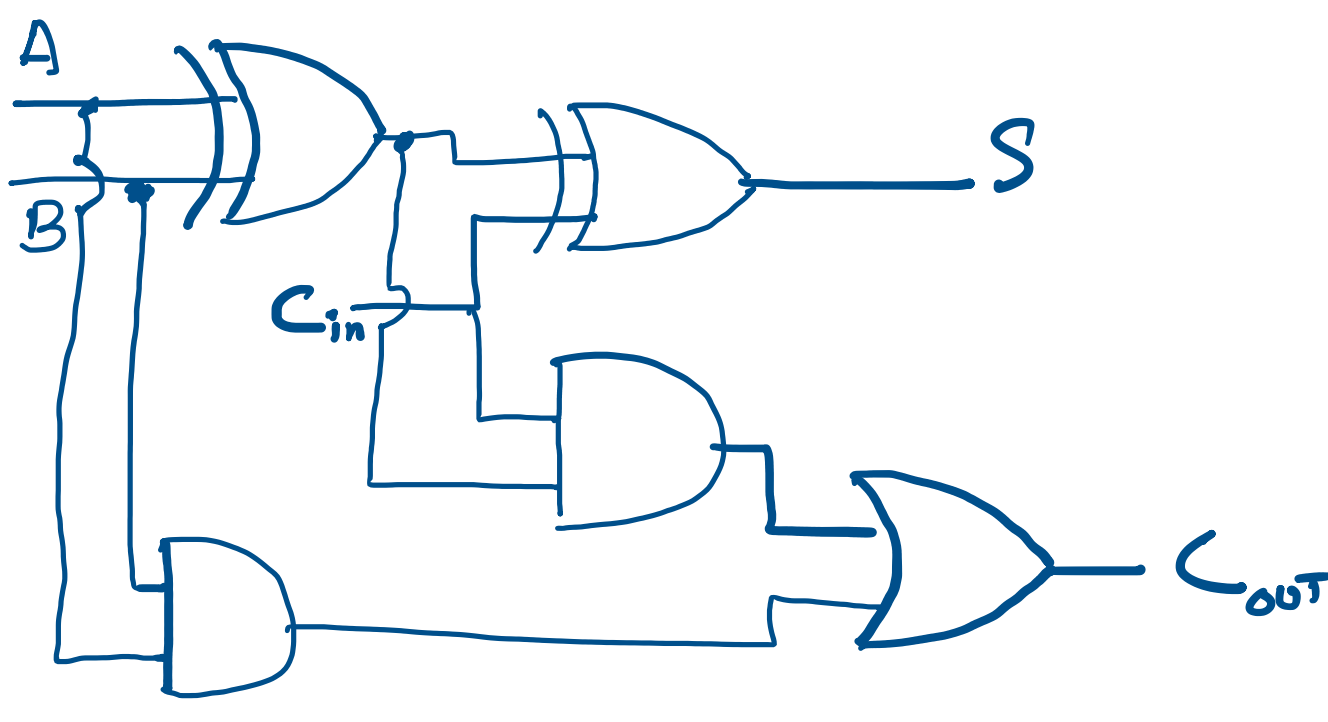
↓

Status is always updated in status Register; with a variable 'c'.

~ Add up 3 inputs ~
Full Adder: made up of combination of two half adders it is found in ALU. It takes three inputs and gives two outputs; Sum (S) & Carry (c).



A	B	C	C	S
0	0	0	0	0
0	0	1	0	1
0	1	0	0	1
0	1	1	1	0
1	0	0	0	1
1	0	1	1	0
1	1	0	1	0
1	1	1	1	1



✓ HA ✓ FA ✓ FA ✓ HA
1 1 — C

