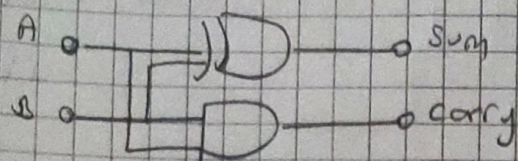


Half Adder



A	B	Sum	Carry
0	0	0	0
0	1	1	0
1	0	1	0
1	1	0	1

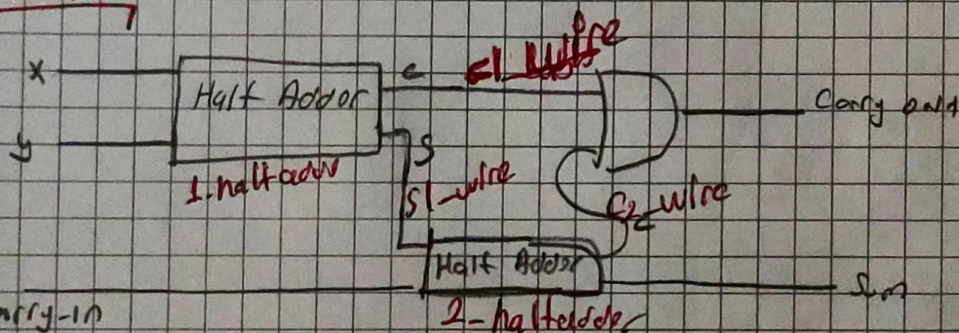
A \ B	0	1
0	0	1
1	1	0

A \ B	0	1
0	0	0
1	0	1

$$\text{Carry} = AB$$

} Karnaugh map

Full Adder



Carry-in

A	B	Cin
0	0	0
0	0	1
0	1	0
0	1	1
1	0	0
1	0	1
1	1	0
1	1	1

Carry	S
0	0
0	1
0	1
1	0
0	1
1	0
1	0
1	1

AB \ Cin	0	1
00	0	0
01	0	1
11	1	1
10	0	1

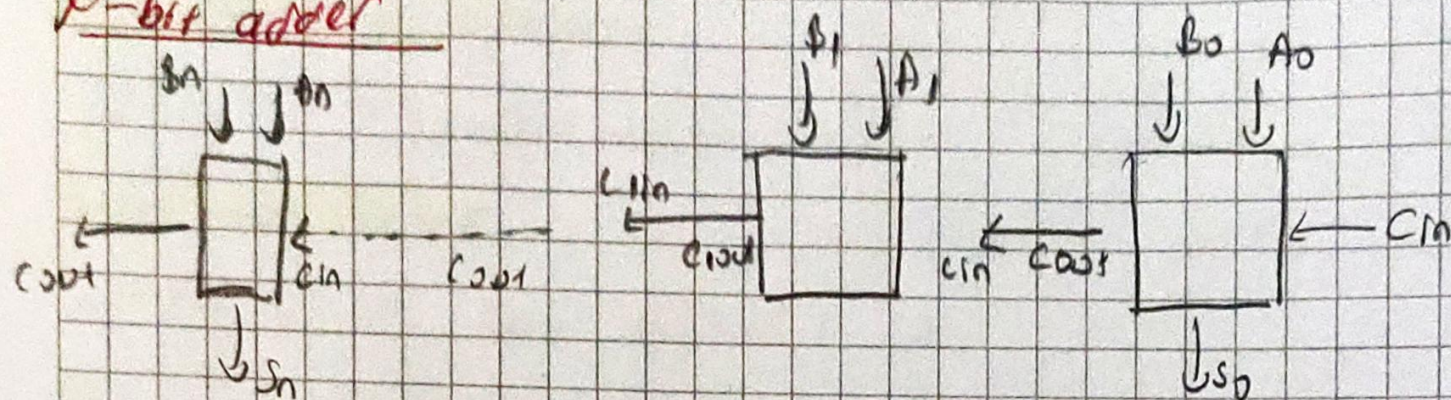
AB \ Cin	0	1
00	0	1
01	1	0
11	0	1
10	1	0

$$\text{Carry} = AB + C1B + AC1$$

$$\text{Carry} = AB + C1(A \oplus B)$$

$$\begin{aligned} S &= A0'1C1 + A0C1 + A1B C1 + A10'1C1 \\ &= A \oplus B \oplus C1 \end{aligned}$$

N-bit adder



✶ installation ederken kaa tane full adder kullancagimizi bilmedigimizden son
bit bone

FULL-ADDER GEN: for k in 0 to $N-1$ generate

full adder k ; full-adder
port map 1

$a \Rightarrow a_i(k);$

$b \Rightarrow b_i(k);$

carry $\Rightarrow temp(k);$

sum-0 $\Rightarrow sum_0(k);$

carry-0 $\Rightarrow temp(k+1);$

end generate;

end Behavioral;