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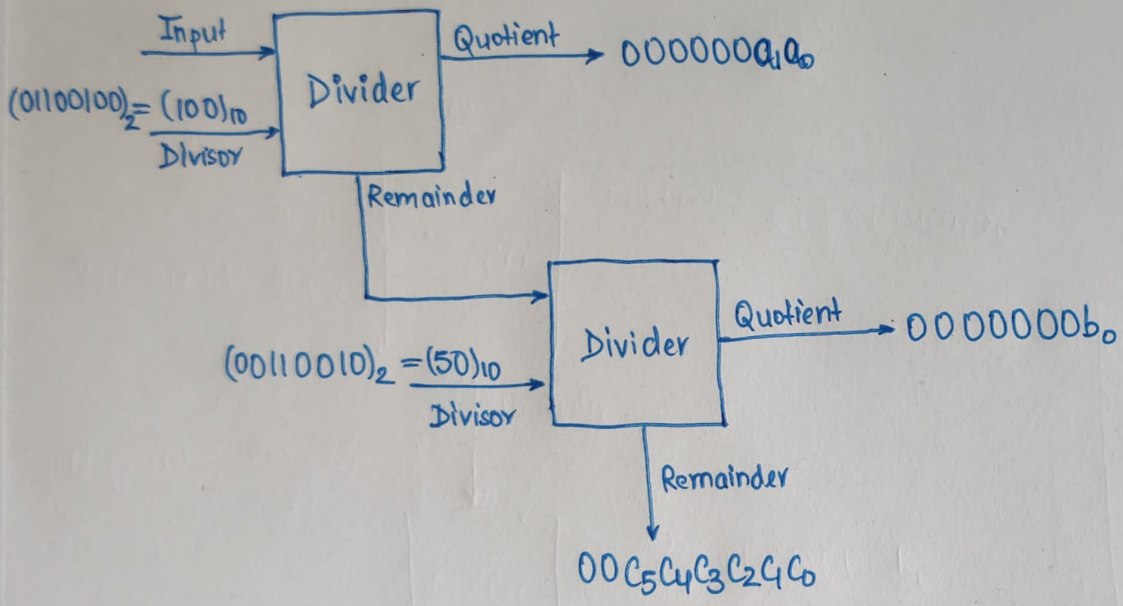
EE214
Digital Circuits Lab

→ In order to get the no. of 100 notes, we can use the divider circuit with dividend as the user input and divisor as the binary representation of $(100)_{10} = (01100100)_2$ [8-bit]

→ The quotient will be of the form $000000a_1a_0$ and the remainder will go into another divider circuit as dividend and the quotient as $(50)_{10} = (00110010)_2$

→ The quotient now will be of the form $0000000b_0$ and the remainder as $00c_5c_4c_3c_2c_1c_0$



→ Now, we are left with p_1 and p_0 which we will obtain using K-Maps.

a_1	a_0	b_0	p_1	p_0
0	0	0	0	1
0	0	1	1	0
0	1	0	1	1
0	1	1	1	1
1	0	0	1	1
1	0	1	1	1
1	1	0	x	x
1	1	1	x	x

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P_0 :

b_0 \ a_1a_0	$\bar{a}_1\bar{a}_0$	$\bar{a}_1a_0$	a_1a_0	$a_1\bar{a}_0$
$\bar{b}_0$	1	1	X	1
b_0	0	1	X	1

$$P_0 = \bar{b}_0 + a_1 + a_0$$

P_1 :

b_0 \ a_1a_0	$\bar{a}_1\bar{a}_0$	$\bar{a}_1a_0$	a_1a_0	$a_1\bar{a}_0$
$\bar{b}_0$	0	1	X	1
b_0	1	1	X	1

$$P_1 = b_0 + a_1 + a_0$$

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