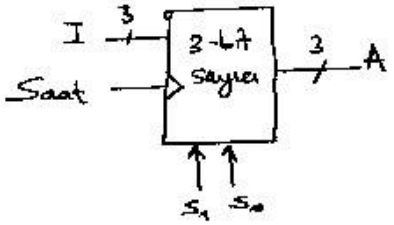
Bilgisayar Organizasyonu

25-Şubat 2008

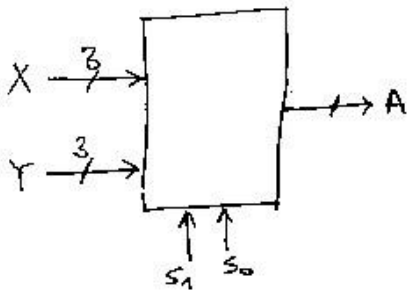
Alıştırma - Soruları

1) Aşağıda işlevleri tarif edilen 3-bit sayıcıyı J-K flip flopları kullanarak gerçekleyiniz.



S_1	S_0	A^+
0	0	A
0	1	I
1	0	A+1
1	1	$\bar{A}$

2) Aşağıda işlevleri tarif edilen 3-bitlik aritmetik işlemciyi tasarlayınız



S_1	S_0	A
0	0	X+Y
0	1	X+1
1	0	X-Y
1	1	Y-1

Çözümler

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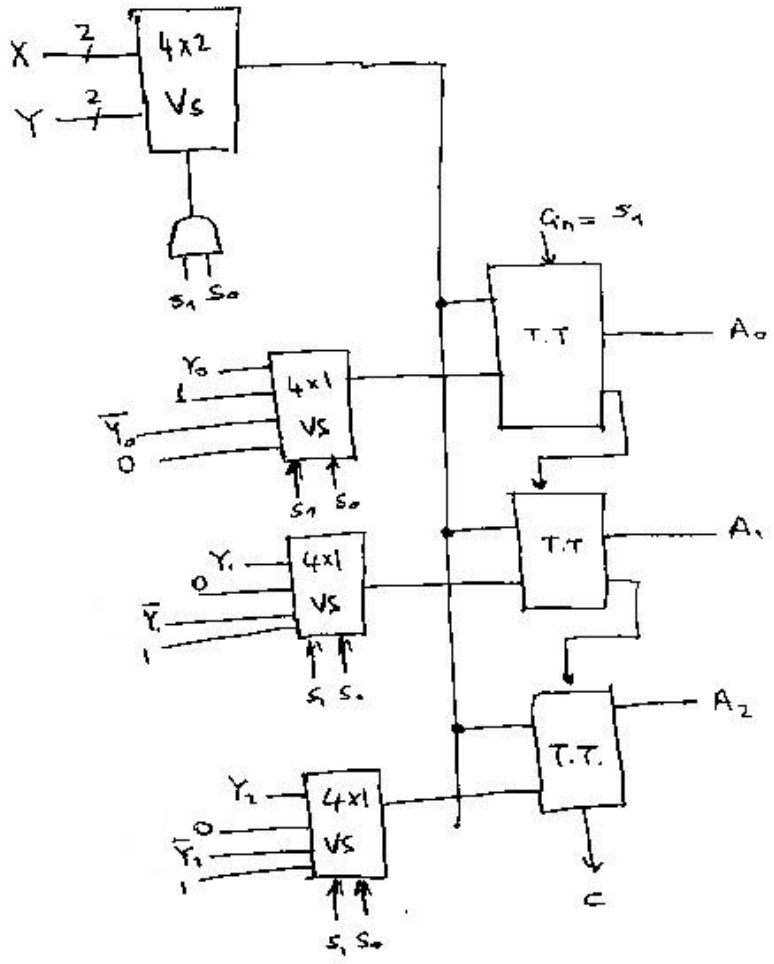
(2)



(1) $A_0^+ = \bar{S}_1 \bar{S}_0 A_0 + \bar{S}_1 S_0 I_0 + S_1 \bar{S}_0 \bar{A}_0 + S_1 S_0 \bar{A}_0$

($S_1 \bar{A}_0$)

$= (\bar{S}_1 S_0 I_0 + S_1) \bar{A}_0 + (\bar{S}_1 S_0 \bar{I}_0 + \bar{S}_1 \bar{S}_0) A_0$

$J_0 = \bar{S}_1 S_0 I_0 + S_1$

$K_0 = (S_1 + S_0)(S_1 + \bar{S}_0 + \bar{I}_0) = S_1 + S_1 \bar{S}_0 + S_1 \bar{I}_0 + S_1 S_0 + \bar{S}_0 \bar{I}_0$

$= S_1 + S_0 \bar{I}_0$

$A_1^+ = ?$

$A_2^+ = ?$