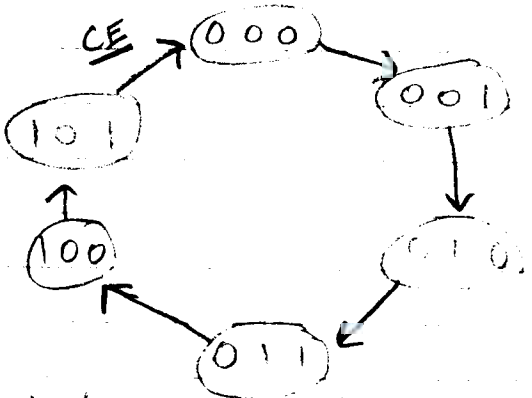
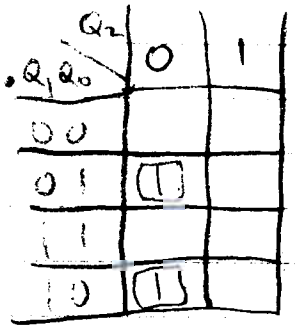
Mod 6 Counter

Q_2	Q_1	Q_0	N_2	N_1	N_0	CE
0	0	0	0	0	1	0
0	0	1	0	1	0	0
0	1	0	0	1	1	0
0	1	1	1	0	0	0
1	0	0	1	0	1	0
1	0	1	0	0	0	1
1	1	0	0	0	0	0
1	1	1	0	0	0	0

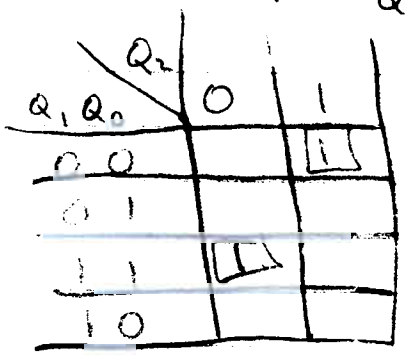


$CE = Q_2 Q_1' Q_0$

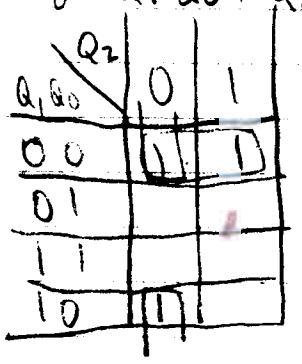
$N_1 = Q_2' Q_1' Q_0 + Q_2' Q_1 Q_0'$



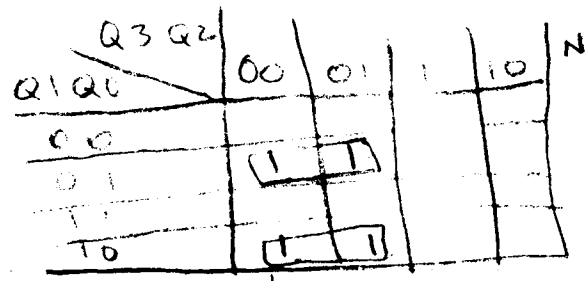
$N_2 = Q_2 Q_1' Q_0' + Q_2' Q_1 Q_0$



$N_0 = Q_1' Q_0' + Q_2' Q_0'$

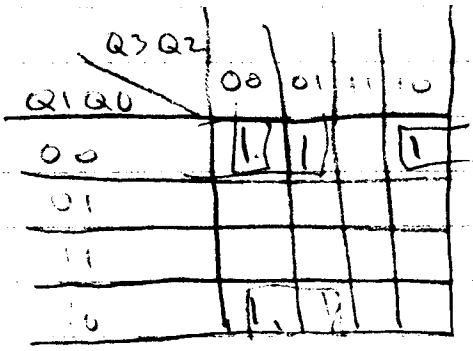


Mod 10 counter



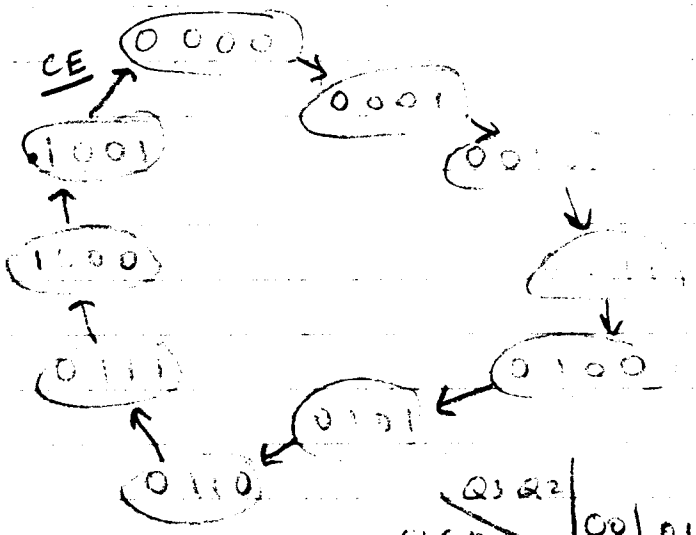
$N1 = Q3' Q1' Q0 + Q3' Q1 Q0'$

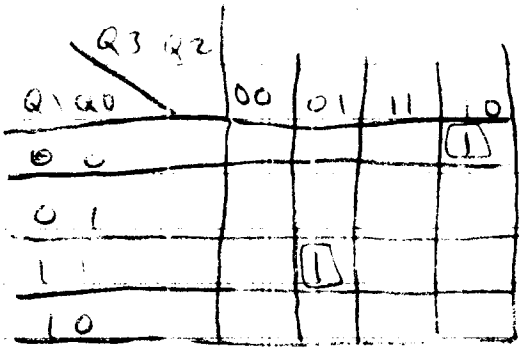
Q_3	Q_2	Q_1	Q_0	N_3	N_2	N_1	N_0	CE
0	0	0	0	0	0	0	1	0
0	0	0	1	0	0	1	0	0
0	0	1	0	0	0	1	1	0
0	0	1	1	0	1	0	0	0
0	1	0	0	0	1	0	1	0
0	1	0	1	0	1	1	0	0
0	1	1	0	0	1	1	1	0
0	1	1	1	1	0	0	0	0
1	0	0	0	1	0	0	1	0
1	0	0	1	0	0	0	0	1
1	0	1	0	0	0	0	1	0
1	0	1	1	0	0	1	0	0
1	1	0	0	0	0	1	1	0
1	1	0	1	0	1	0	0	0
1	1	1	0	0	1	0	1	0
1	1	1	1	0	1	1	0	1



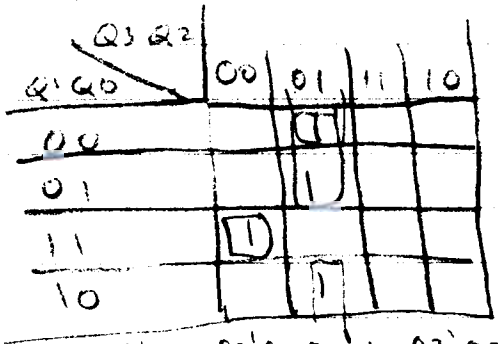
$N0 = Q3'Q0' + Q2'Q1'Q0'$

$CE = Q3 \cdot Q2' \cdot Q1' \cdot Q0$





$N3 = Q3Q2'Q1'Q0' + Q3'Q2Q1Q0$



$N2 = Q3'Q2Q1' + Q3'Q2(Q1) + Q3'Q2'Q1Q0$

Calculations

$$\text{preload} + 1 = \frac{50 + 10^6\ hz}{200 hz}$$

$$\text{preload} = 249999$$