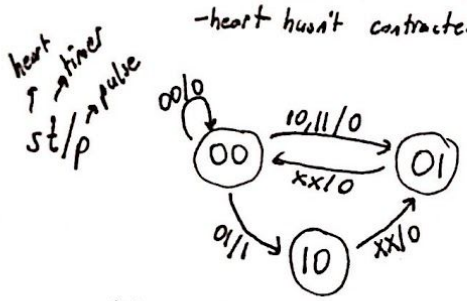
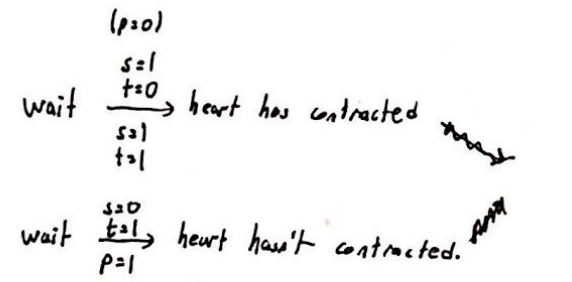
2. 3 states; - wait (00)
- heart has contracted (01)
- heart hasn't contracted (10)



'X's are don't cares.



heart has contracted $\xrightarrow{\text{for all inputs}}$ wait

heart hasn't contracted $\longrightarrow$ heart has contracted for all inputs

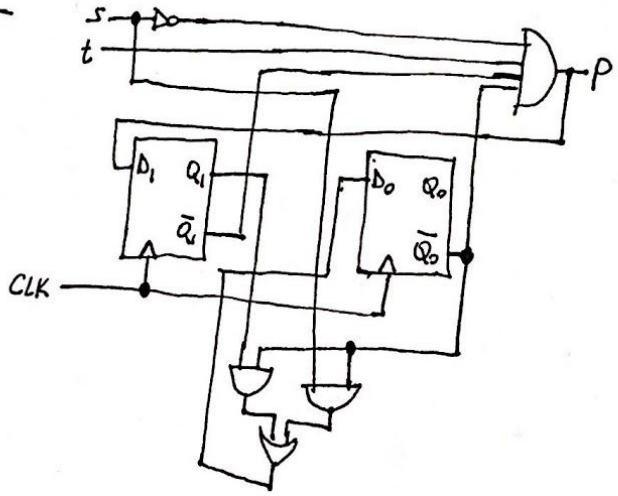
State Table

Present State		inputs		output	Next State	
Q_1	Q_0	s	t	p	D_1	D_0
0	0	0	0	0	0	0
0	0	0	1	1	1	0
0	0	1	0	0	0	1
0	0	1	1	0	0	1
0	1	0	0	0	0	0
0	1	0	1	0	0	0
0	1	1	0	0	0	0
0	1	1	1	0	0	0
1	0	0	0	0	0	1
1	0	0	1	0	0	1
1	0	1	0	0	0	1
1	0	1	1	0	0	1

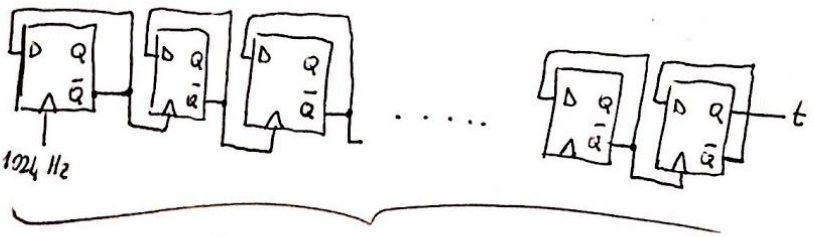
$p = \overline{Q_1}\,\overline{Q_0}\,\overline{s}\,t$

$D_1 = p$

$D_0 = Q_1\,\overline{Q_0} + s\,\overline{Q_0}$



Timer Circuit



10 D FF's.