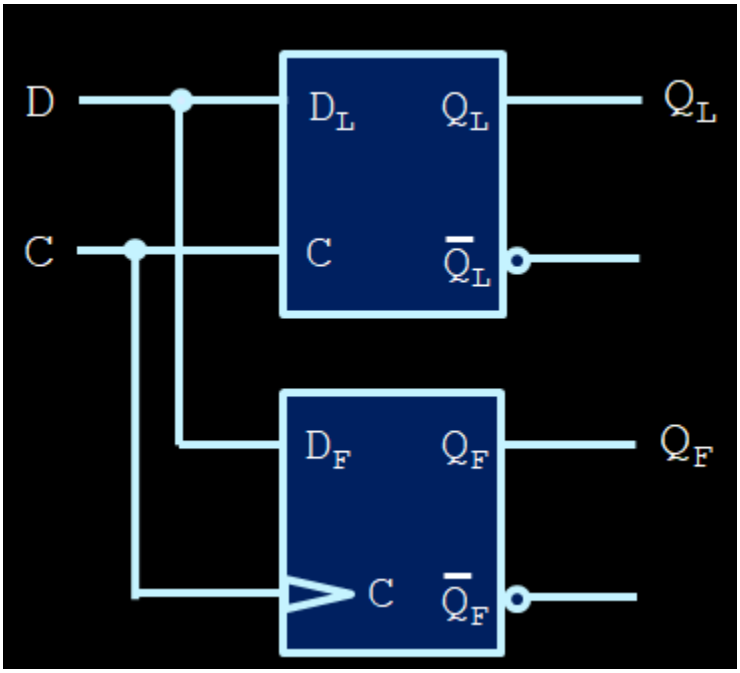
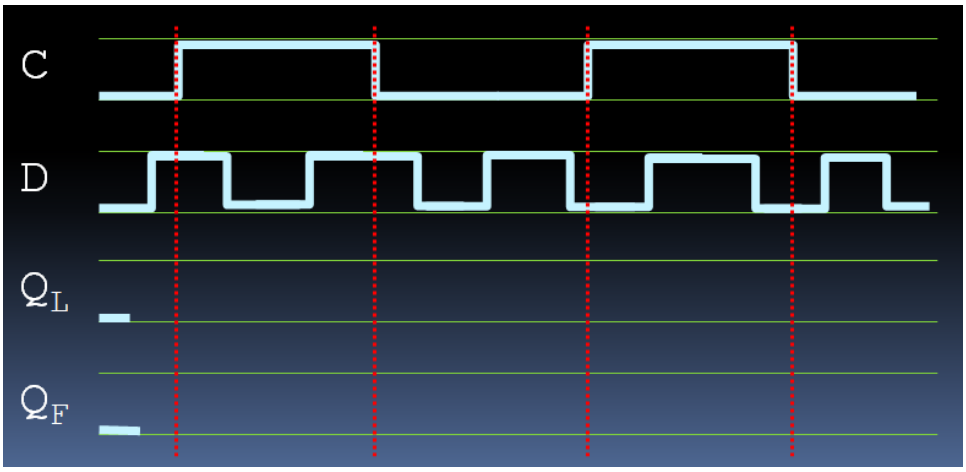
Who are the team members in this Room? Everyone please type your names here.

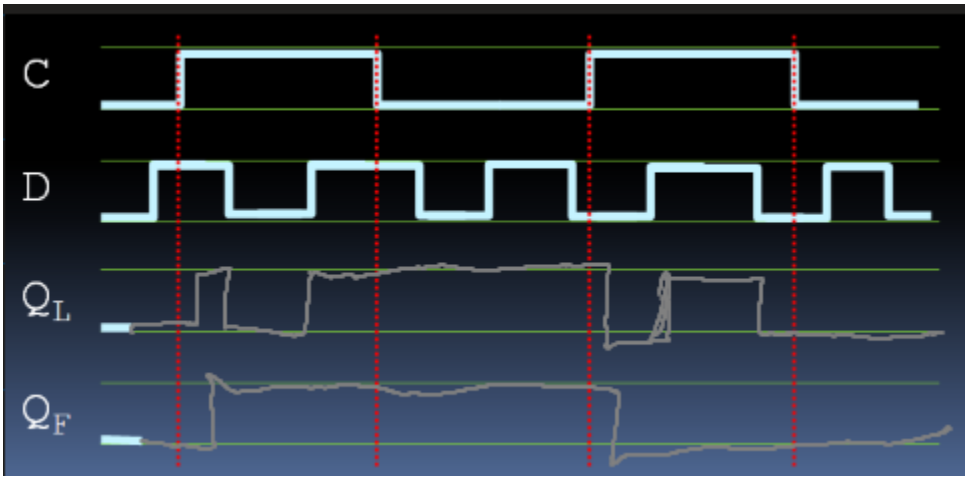
No.	Last Name	First Name
1006999223	D'Mello	Aaron
1005983483	Sharma	Ansh
1005764585	Lee	Hsu Shen
1006090365	Wang	Si
5	Sivasothy	Vigaash
6	Cao	Irene
7		

Question 1:

Given the circuit and the input waveform below, what will the outputs be on Q_L and Q_F?



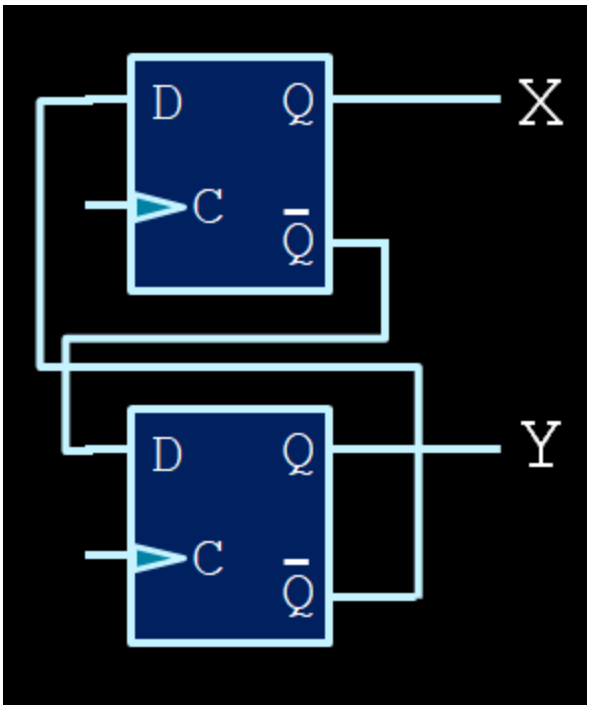


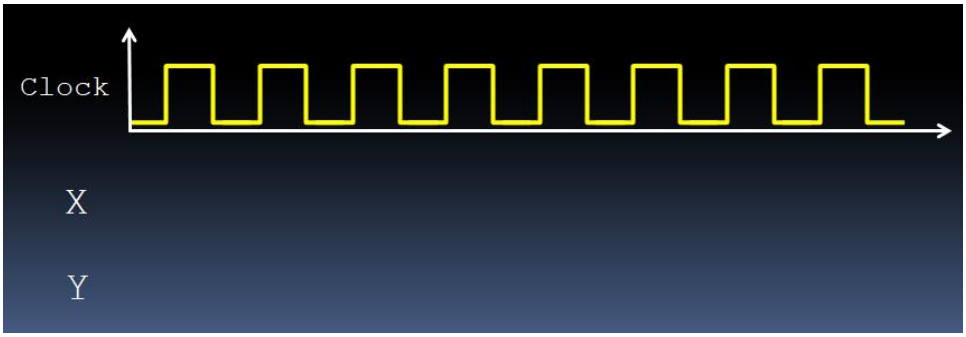


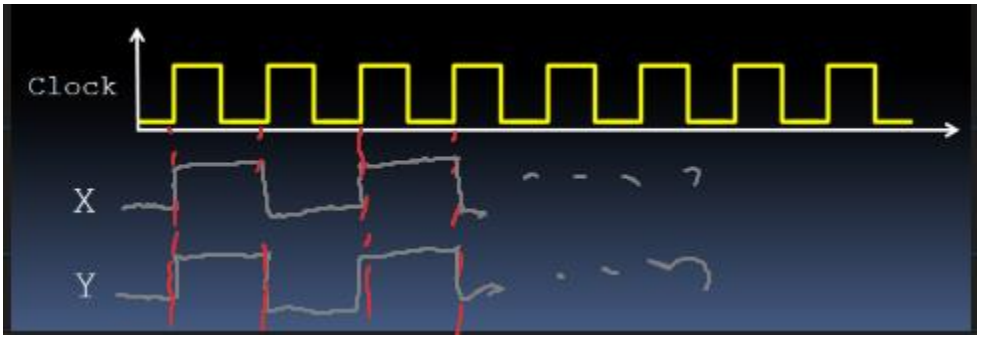
Question 2:

Assuming the Q outputs of both flip-flops start off low, what will the value of X & Y be over the next few clock cycles?

Assume ideal situation, there is no delay. Also assume positive edge trigger.



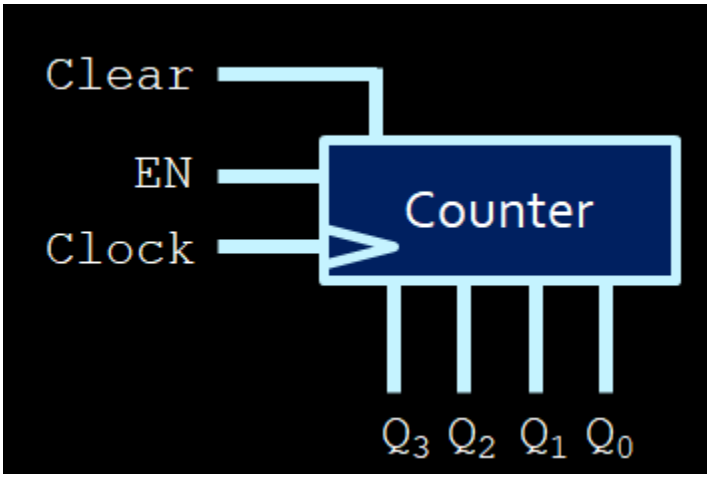




9 POINtS LESS GO

For Question 3 and Question 4:

Assume that you have access to a counter circuit and any number of AND, OR and NOT gates:



Question 3:

How do you make a signal that goes high once for after 10 clock cycles? Duration of your output signal Y should be for one clock cycle.

EN = !Q3+!Q1+!Q0+Q2

Y = Q3(!Q2)Q1(!Q0)

Question 4:

How do you make a signal that goes high every 10 clock cycles? Duration of your output signal Y should be for one clock cycle.

EN = 1

Y = Q3(Q2`)Q1(Q0`)

Clear = Q3(Q2`)Q1(Q0`)

Y = Q3Q1 WE GOT IT

Clear = Q3Q1Q0

Y = Q3Q1

Clear = Q3Q1