ID:
Name/Surname:

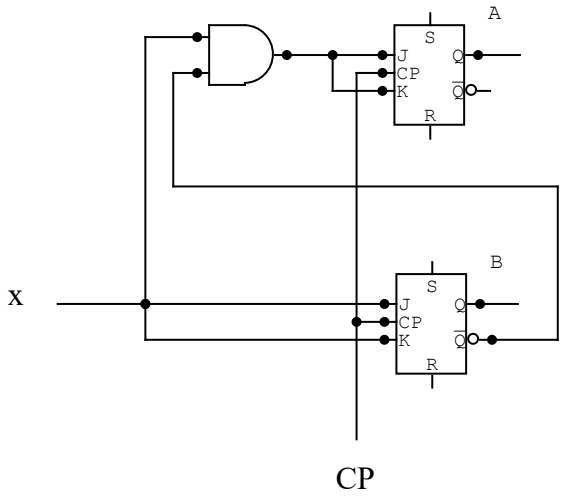
COMPUTER ARCHITECTURE
EXPERIMENT – 3

Implementation of Synchronous Sequential Circuits

Aim: In this experiment, students will be introduced to the concept of sequential circuits and implement a 2-bit Counter.

Experimental Work:

Given the following sequential circuit:



1. Draw the logic diagram of the given sequential circuit in Circuit Maker 6.0.
- **a)** Implement your inputs as logic switches.
  Devices → Hotkeys2 → logic switch
- **b)** Implement your circuit using logic gates and JK- Flip Flops (4027).
  (You can search devices from *devices → search*)
- **c)** Implement your outputs as logic displays.
  Devices → Hotkeys1 → logic display

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2. Run your circuit and complete the following state table:

Present State			Next State	
A(t)	**B(t)**	**x**	**A(t+1)**	**B(t+1)**
0	**0**	**0**		
0	**0**	**1**		
0	**1**	**0**		
0	**1**	**1**		
1	**0**	**0**		
1	**0**	**1**		
1	**1**	**0**		
1	**1**	**1**		

3. Supply your flip-flop input equations: