LAB: 15

8-LED BLINKING IN CLOCKWISE CYCLE

STEPS:

- First we drag the component 8086, 8255A and 74HC373 in the proteus.
- The address bus is connected to the input data (D0 to D7) in 74HC373 and 8255A.
- We connect the read and write pin of 8086 with read and write pin of 8255A.
- The latch (ALE) pin of 8086 connects the (LE) pin of 74HC373.
- The OE pin of 74HC373 is enabling low so the ground connects to this pin.
- The reset pin and the enable low CS pin of 8255A is connect to the Ground.
- The ready and min pin of 8086 is connected to the power.
- Finally open 8086 component and attach the bin file.
- When the data send in A0 and A1 is 1, 1 the command register is activated.
- In 8255A 8-LEDs BIBY connected to the port A in clockwise cycle.
- The second end of the LEDs is connected to the ground.

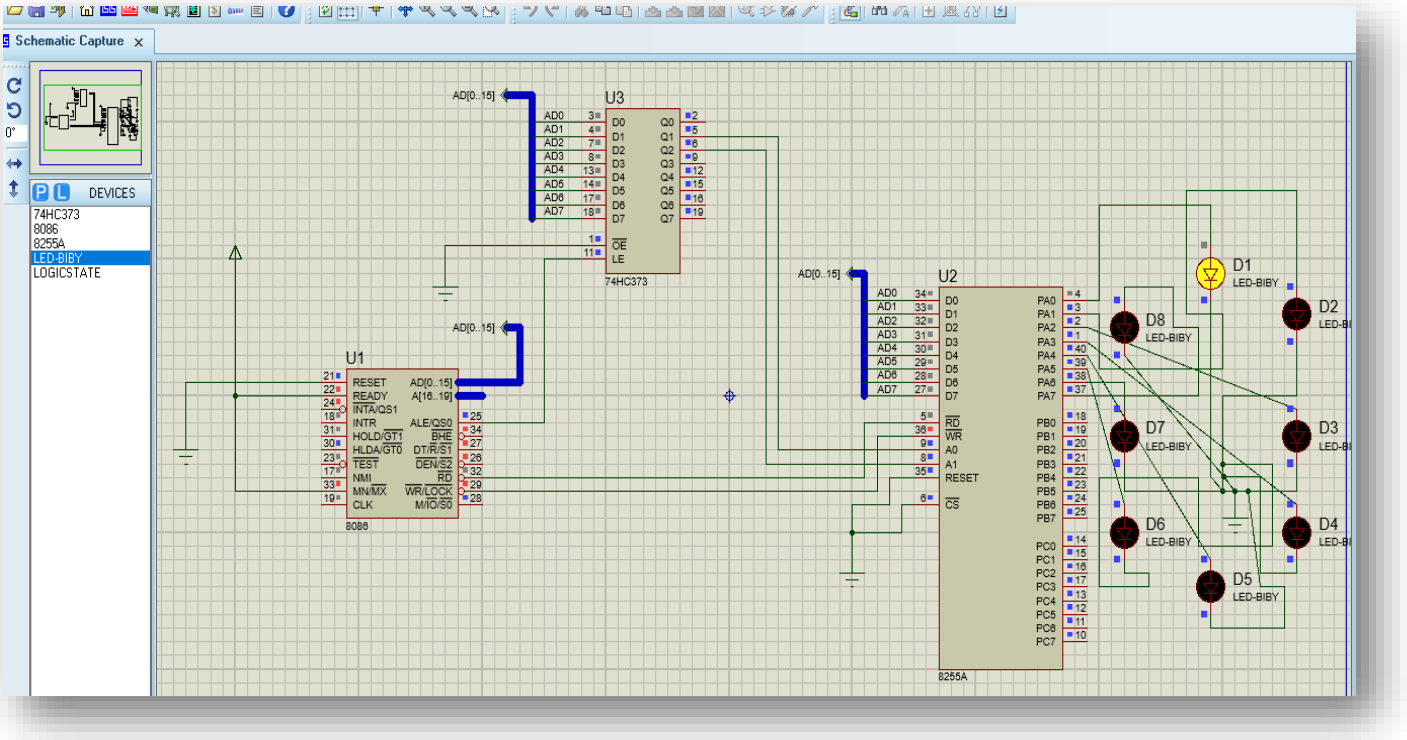
Source Code:

```
DATA SEGMENT

PORTA EQU 00H

PORTB EQU 02H

PORTC EQU 04H

PORT_CON EQU 06H

DATA ENDS

CODE SEGMENT

MOV AX, DATA

MOV DS, AX

ORG 0000H

START:
```

```
MOV DX, PORT_CON
MOV AL, 10000000B
OUT DX, AL
JMP XX
XX:
MOV AL, 00000000B
MOV DX, PORTA
OUT DX, AL
MOV CX, 0DF36H; Delay
Delay0: loop Delay0
MOV AL, 00000001B
MOV DX, PORTA
OUT DX, AL
MOV CX, 0DF36H; Delay
Delay1: loop Delay1
MOV AL, 00000010B
MOV DX, PORTA
OUT DX, AL
MOV CX, 0DF36H; Delay
Delay2: loop Delay2
MOV AL, 00000100B
MOV DX, PORTA
OUT DX, AL
MOV CX, 0DF36H; Delay
Delay3: loop Delay3
MOV AL, 00001000B
MOV DX, PORTA
```

```
OUT DX, AL
MOV CX, 0DF36H; Delay
Delay4: loop Delay4
MOV AL, 00010000B
MOV DX, PORTA
OUT DX, AL
MOV CX, 0DF36H; Delay
Delay5: loop Delay5
MOV AL, 00100000B
MOV DX, PORTA
OUT DX, AL
MOV CX, 0DF36H; Delay
Delay6: loop Delay6
MOV AL, 01000000B
MOV DX, PORTA
OUT DX, AL
MOV CX, 0DF36H; Delay
Delay7: loop Delay7
MOV AL, 10000000B
MOV DX, PORTA
OUT DX, AL
MOV CX, 0DF36H; Delay
Delay8: loop Delay8
JMP XX
JMP START
HLT         ; halt!
```

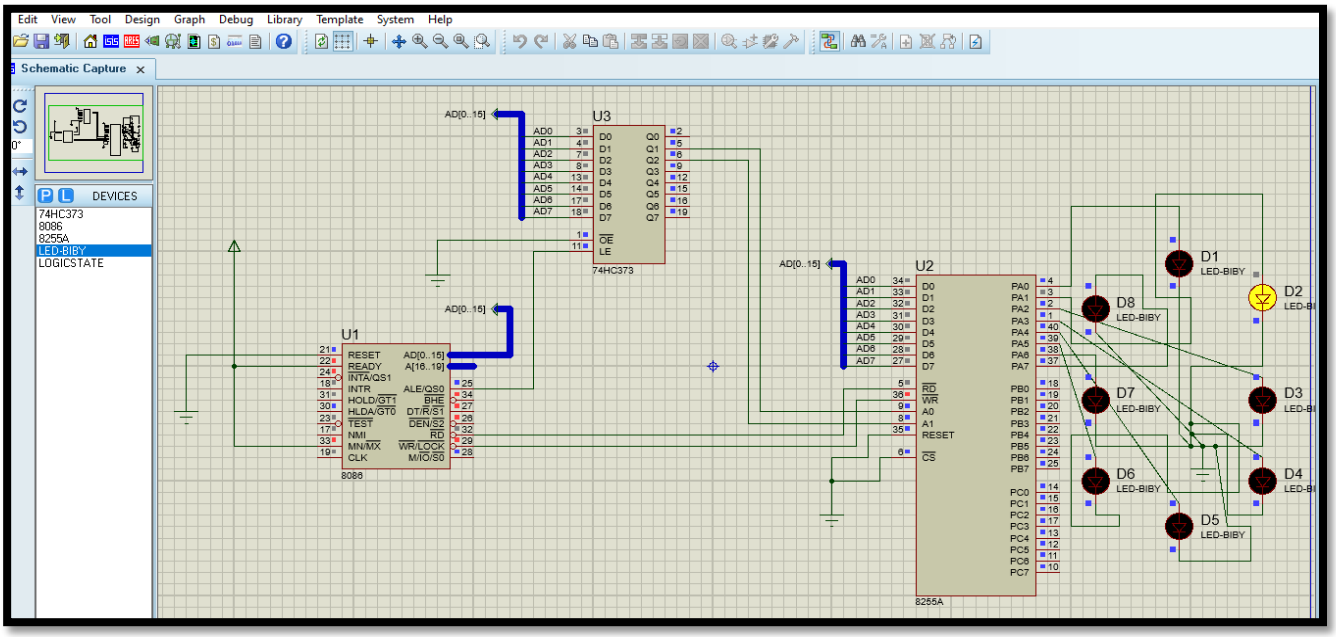
Step 1:



D1 is blinking while rest of LEDs (D2, D3, D4, D5, D6, D7 and D8) is OFF.

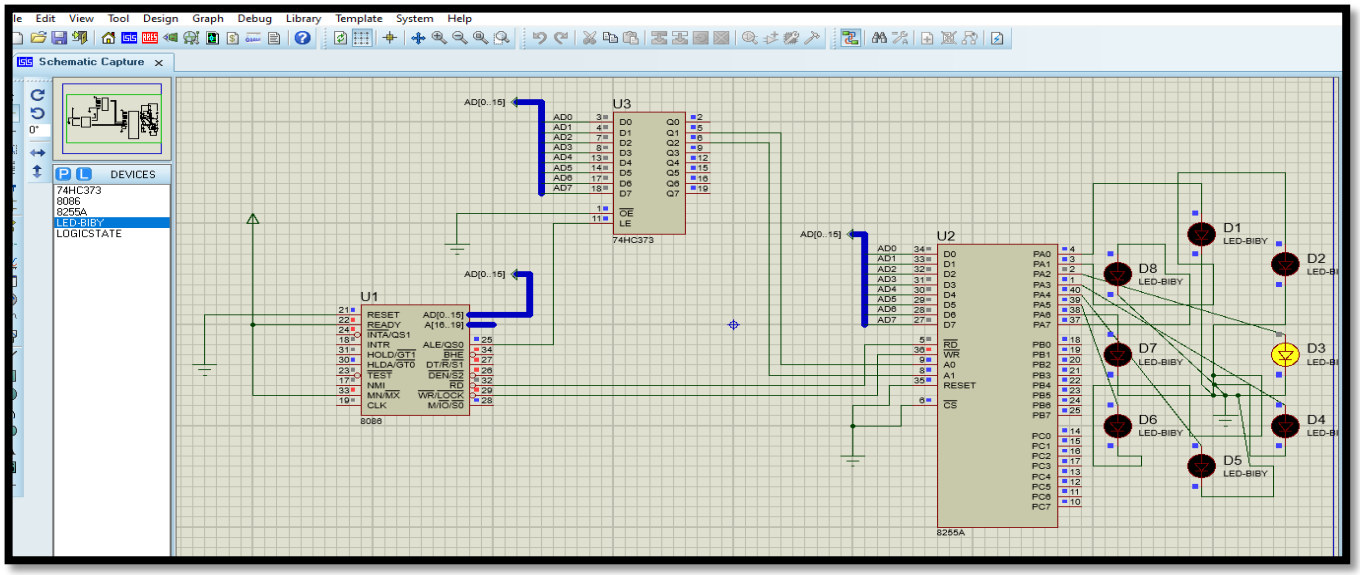
Step 2:

When D2 is blinking at this time rest of LEDs (D1, D3, D4, D5, D6, D7 and D8) is OFF.



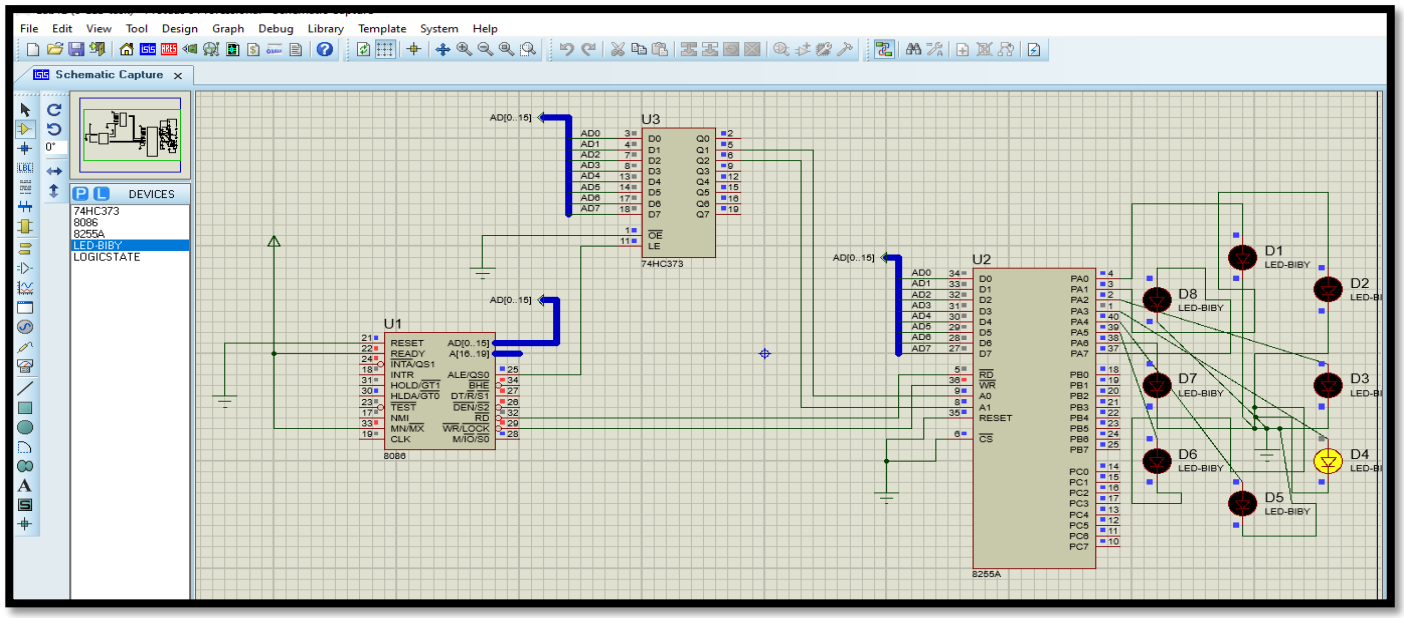
Step 3:

When D3 is blinking at this time rest of LEDs (D1, D2, D4, D5, D6, D7 and D8) is OFF.



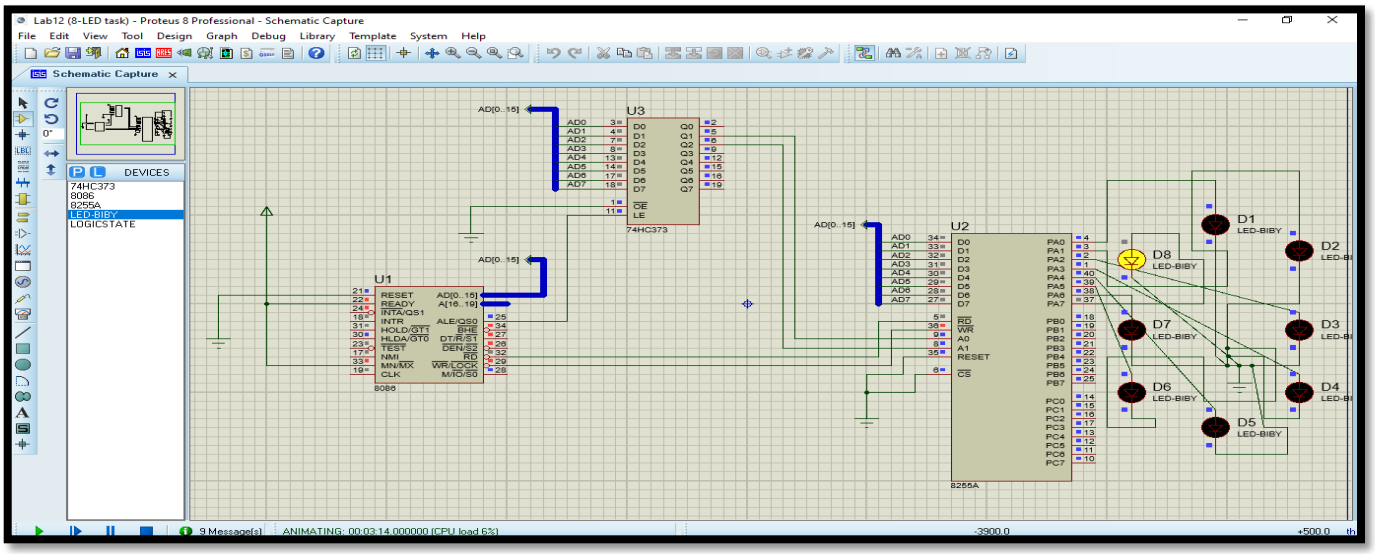
Step 4:

When D4 is blinking at this time rest of LEDs (D1, D2, D3, D5, D6, D7 and D8) is OFF.



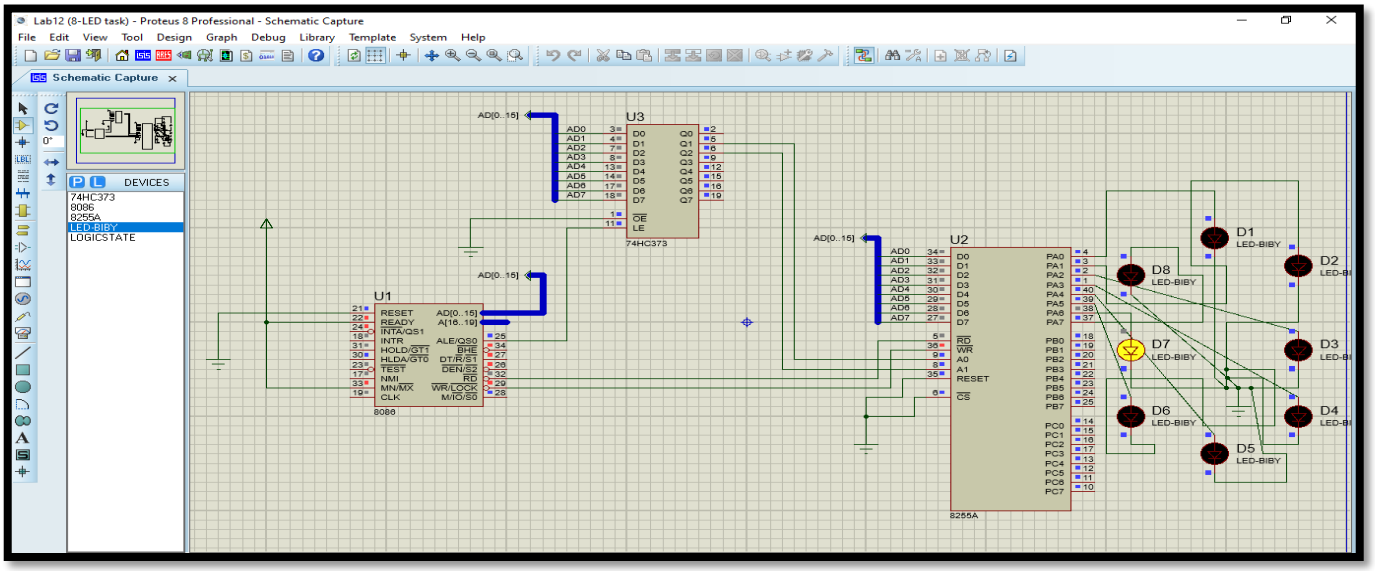
Step 5:

When D7 is blinking at this time rest of LEDs (D1, D2, D3, D4, D5, D6 and D8) is OFF.



Step 6:

When D8 is blinking at this time rest of LEDs (D1, D2, D3, D4, D5, D6 and D7) is OFF.



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