

## **REPORT ON ECE PROJECT**



BTech/II Year ECE/III Semester

19ECE282 Digital Electronics and Systems Lab

Final Project Review (Report)

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### **Chapter 1:**

### **Question:**

A Vending machine supplies the following beverages : coffee,tea,milk and cocoa .The machine can be accessed only based on a 2-bit login and 3-bit password.If the user is authenticated properly,the machine will assert the following signals.

- i)Coffee \_Ok if coffee is chosen and display the character '1' in a seven segment display.
- ii)Tea \_Ok if tea is chosen and display the character '2' in a seven segment display.
- iii)Milk \_Ok if milk is chosen and display the character '3' in a seven segment display.
- iv)Coco \_Ok if cocoa is chosen and display the character '4' in a seven segment display.

## **Chapter 2 :**

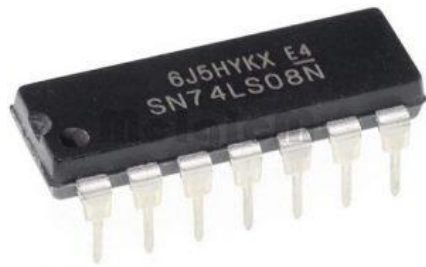
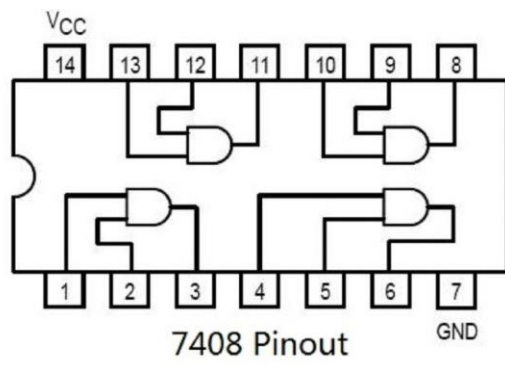
### **Components Used:**

- ◆ 2 I/P AND Gate (IC7408) -1
- ◆ 3 I/P AND Gate (IC7411)-1
- ◆ NOT Gate (IC7404)-1
- ◆ 2 I/P XOR Gate (IC7486)-1
- ◆ 2 I/P OR Gate (IC7432)-1
- ◆ Resistor(1K $\Omega$ )-1
- ◆ Bread board-2
- ◆ Connecting Wires-As Required
- ◆ Digital IC Trainer-1
- ◆ 7 Segment Display-1

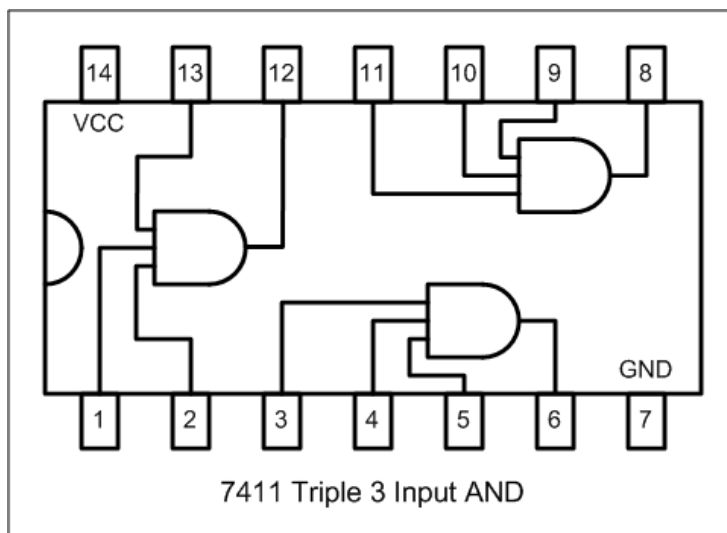
## **Chapter 3:**

### **Details of Hard Ware:**

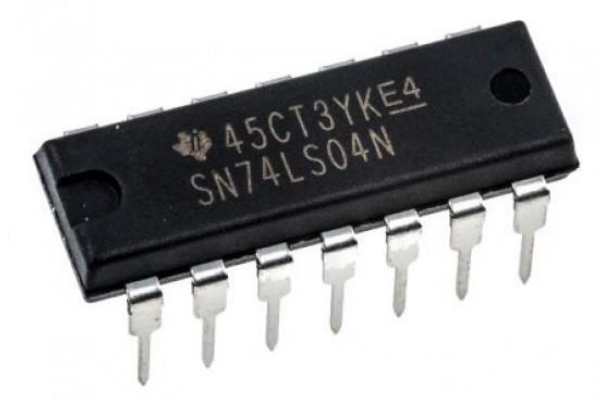
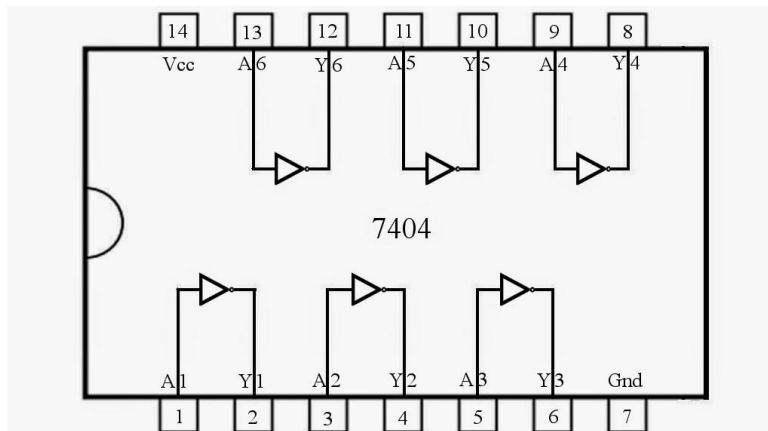
- ◆ 2 I/P AND Gate (IC7408)



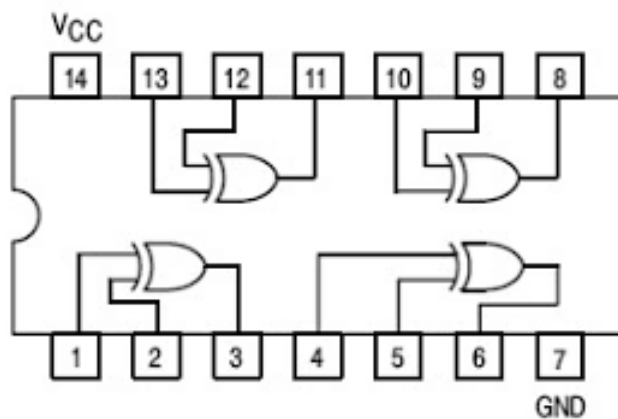
◆ 3 I/P AND Gate (IC7411)

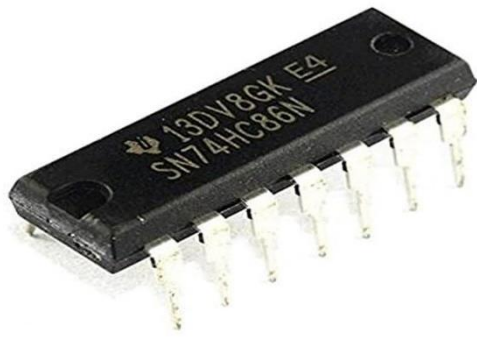


◆ NOT Gate (IC7404)

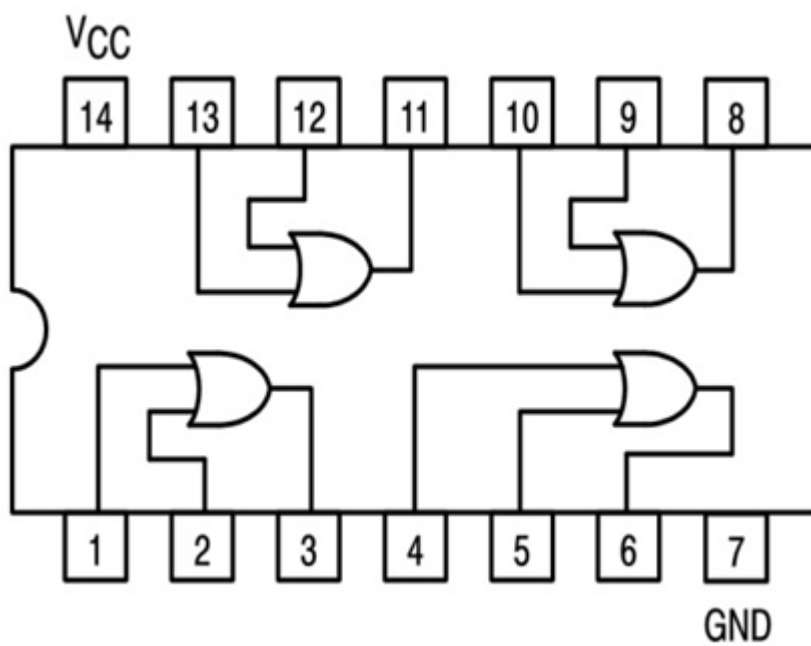


◆ 2 I/P XOR Gate (IC7486)





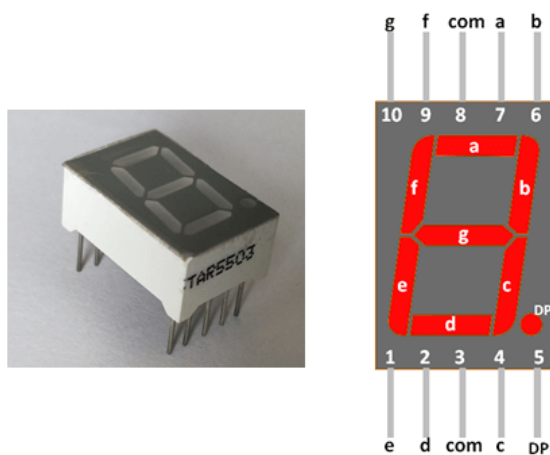
◆ 2 I/P OR Gate (IC7432)



◆ Resistor(1K $\Omega$ )



#### ◆ 7 Segment Display



**SEVEN SEGMENT PINOUT**

## **Chapter 4:**

### **DESIGN DIAGRAM :**

#### **i) Truth Table For Login and Authentication:**

a	b	c	d	e	h
0	0	0	0	0	0
0	0	0	0	1	0
0	0	0	1	0	0
0	0	0	1	1	0
0	0	1	0	0	0
0	0	1	0	1	0
0	0	1	1	0	0

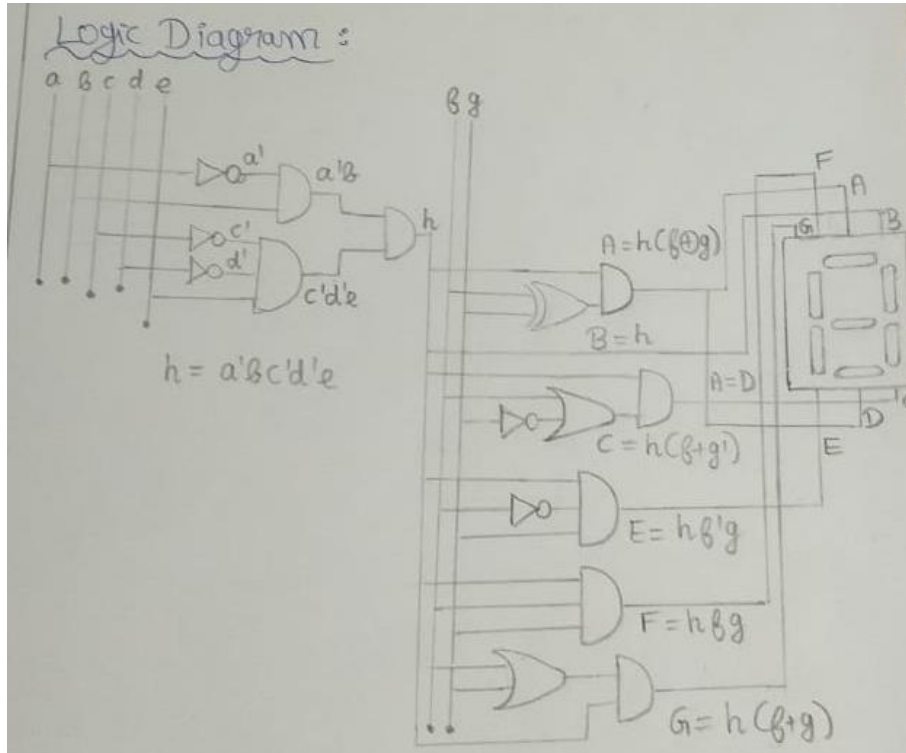
0	0	1	1	1	0
0	1	0	0	0	0
0	1	0	0	1	1
0	1	0	1	0	0
0	1	0	1	1	0
0	1	1	0	0	0
0	1	1	0	1	0
0	1	1	1	0	0
0	1	1	1	1	0
1	0	0	0	0	0
1	0	0	0	1	0
1	0	0	1	0	0
1	0	0	1	1	0
1	0	1	0	0	0
1	0	1	0	1	0
1	0	1	1	0	0
1	0	1	1	1	0
1	1	0	0	0	0
1	1	0	0	1	0
1	1	0	1	0	0
1	1	0	1	1	0
1	1	1	0	0	0
1	1	1	0	1	0
1	1	1	1	0	0
1	1	1	1	1	0
1	1	1	1	1	0

**ii) Truth Table For Seven Segment Display:**

h	f	g	A	B	C	D	E	F	G
0	0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	0	0	0
0	1	0	0	0	0	0	0	0	0
0	1	1	0	0	0	0	0	0	0
1	0	0	0	1	1	0	0	0	0
1	0	1	1	1	0	1	1	0	1
1	1	0	1	1	1	1	0	0	1
1	1	1	0	1	1	0	0	1	1



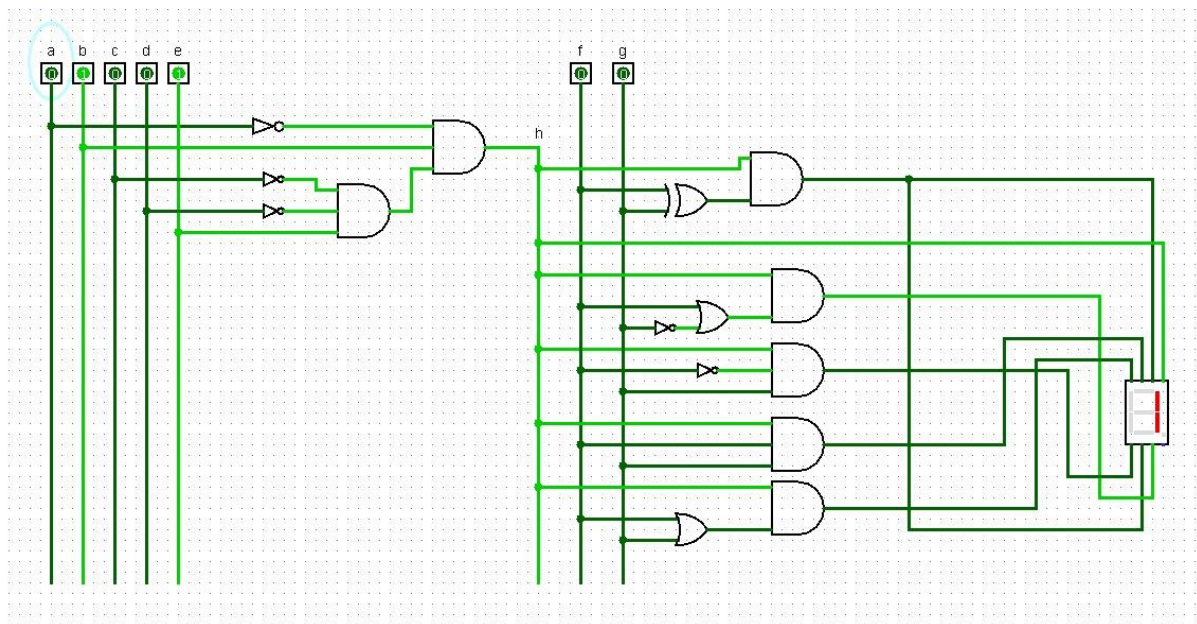
## Logic Diagram:



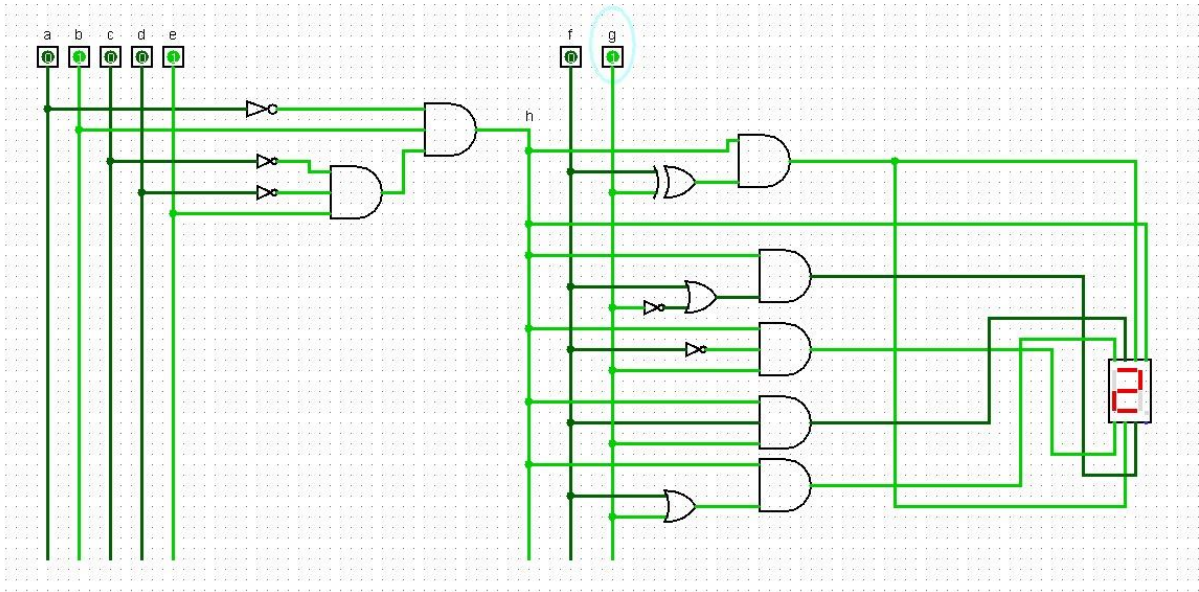
## Chapter 5:

### SIMULATION RESULTS:

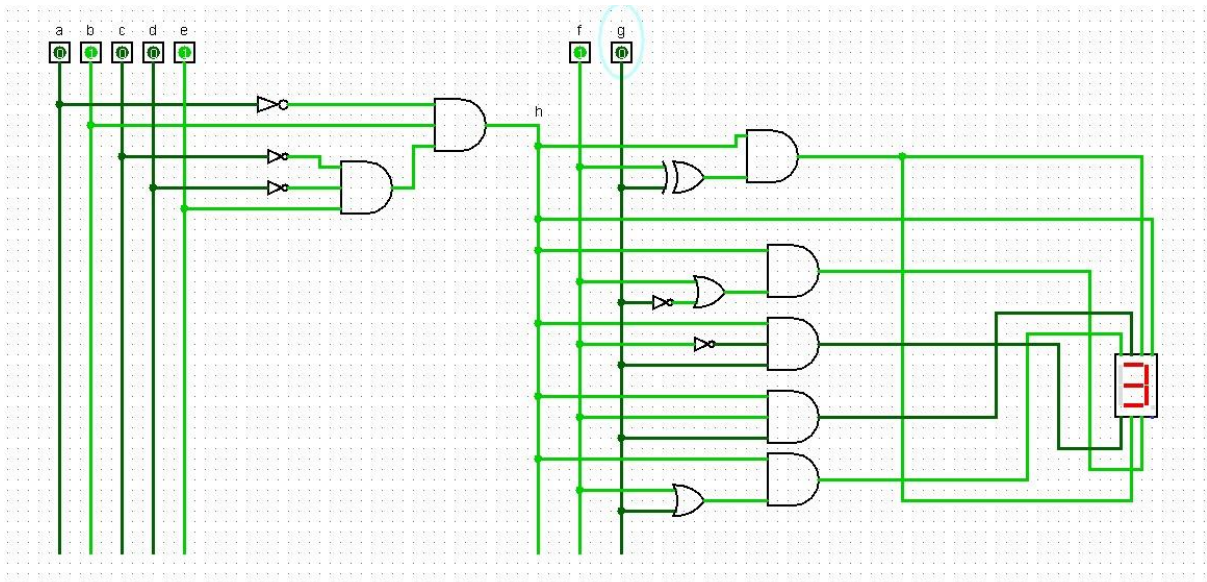
For Coffee 1 is displayed in 7 segment display.



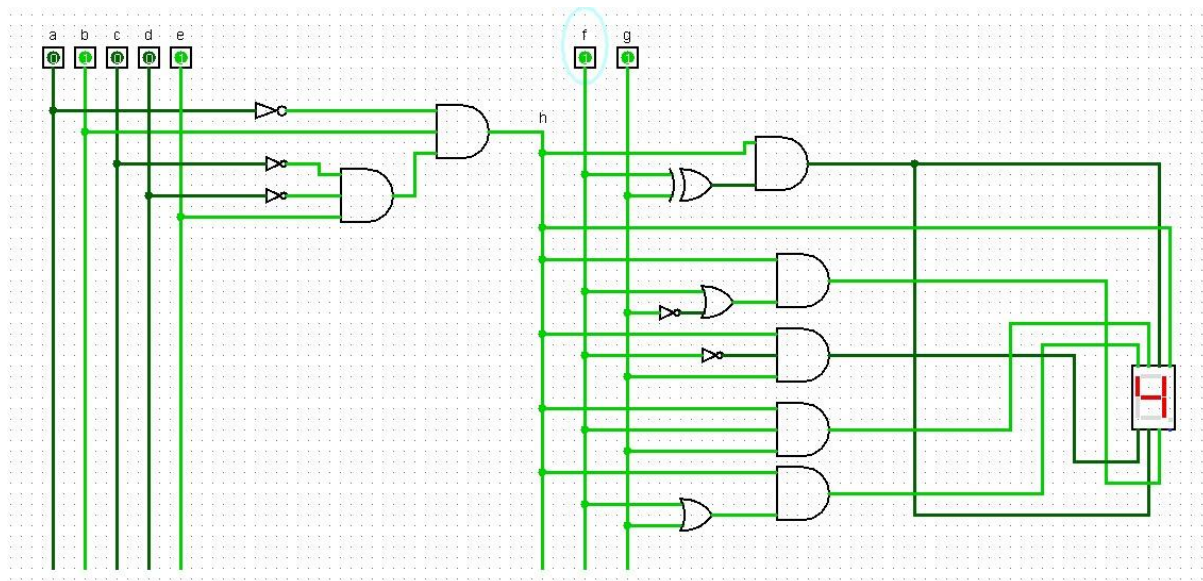
For Tea 2 is displayed in 7 segment display.



**For Milk 3 is displayed in 7 segment display.**



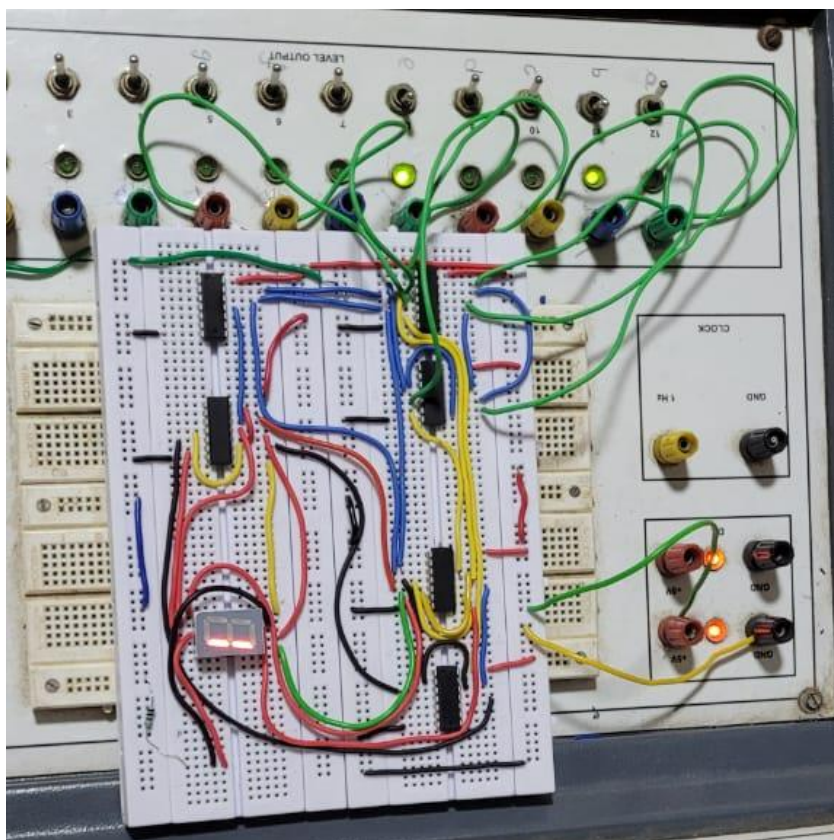
**For Cocoa 4 is displayed in 7 segment display.**



## Chapter 6:

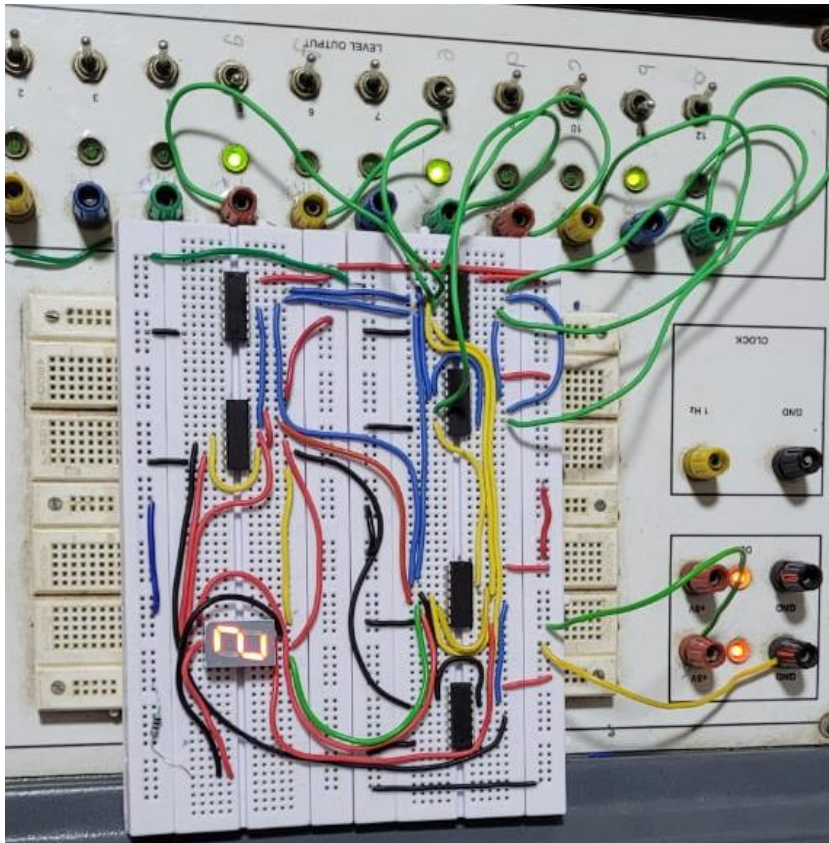
### HADWARE OUTPUTS:

**Case 1: For Coffee:**

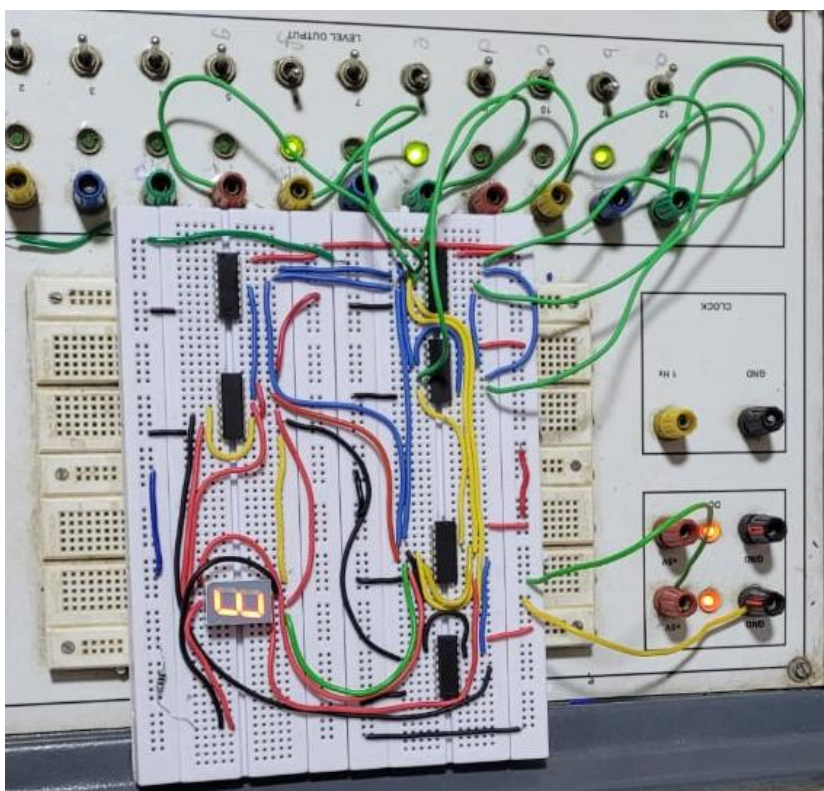


**Case 2: For Tea:**





**Case 3: For Milk:**



**Case 4: For Cocoa:**

