ASSEMBLY-Assignment

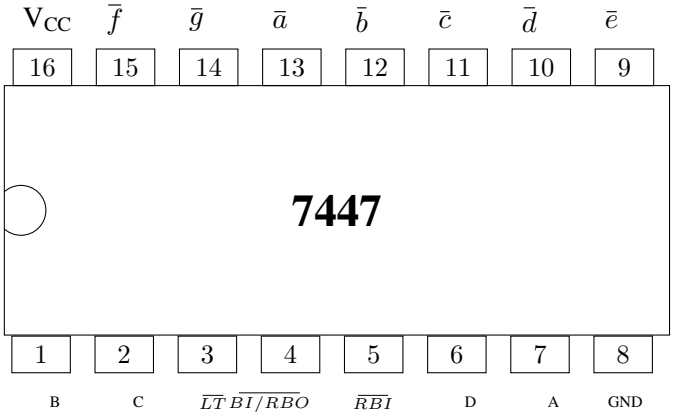
Adarsh kumar (FWC2022068)

***Abstract*—This manual will explain how to design a 4-Bit Synchronous Counter Using 7474 IC**

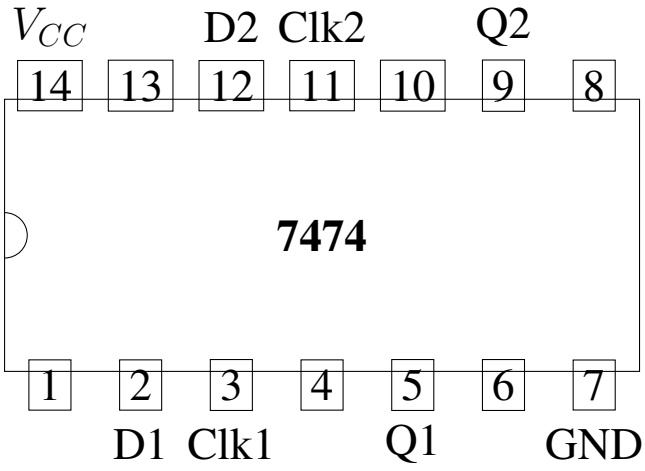
I. Components Needed

Component	Value	Quantity
Arduino	Uno	1
Resistor	220ohm	1
Bread board	-	1
Jumper wires	M-M	20
Seven segment Display	Common Anode	1
Decoder	7447	1
Flip Flop	7474	2

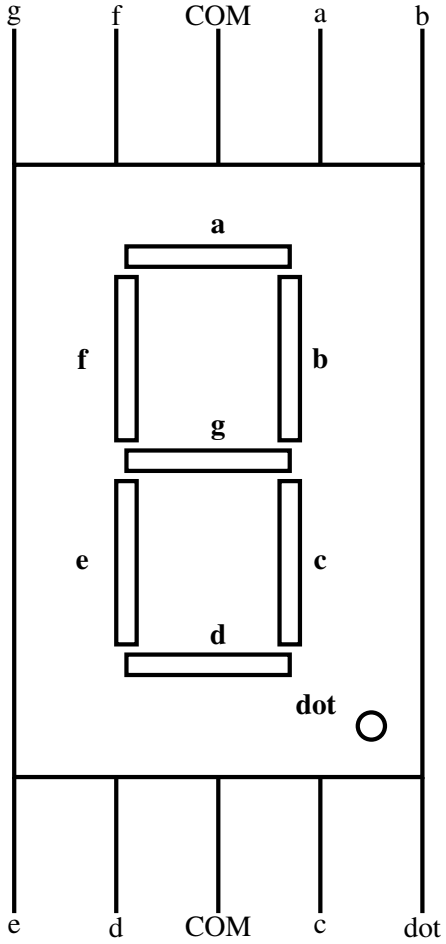
II. 7447 IC Pin Diagram



III. 7474 IC Pin Diagram



IV. Seven Segment Display Pinout



V. 7447 IC And Display Connection

7447 IC	Display
13	a
12	b
11	c
10	d
9	e
15	f

Step 1: Make the connection of Seven Segment Display and 7447 according to the above table.

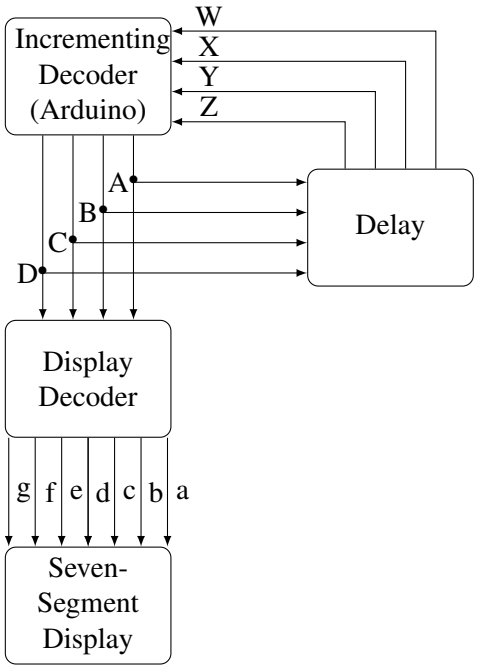
Step 2: Connect COM pin of 7 Segment display to 5v of Arduino Via 220 Ohm Resistor (else the display will damage) and Dot pin of display to GND pin of Arduino.

VI. CONECTION TABLE

	INPUT				OUTPUT				CLOCK		5V			
	W	X	Y	Z	A	B	C	D						
Arduino	D6	D7	D8	D9	D2	D3	D4	D5	D13					
7474	5	9			2	12			CLK1	CLK2	1	4	10	13
7474			5	9			2	12	CLK1	CLK2	1	4	10	13
7447					7	1	2	6			16			

Step 3: Make the connections of 7447 ,7474 and Arduino Board as per the above table.

VII. BLOCK DIAGRAM



Step 4: Verify the Connections according to the Block diagram shown above

Step 5: After making all the connections Connect the Arduino Board to PC/Laptop Via USB cable.

Step 6: Download the code from the link below and upload into the Arduino.

https://raw.githubusercontent.com/aadrshptel/Fwc_module1/main/Assignments/Assembly/codes/counter.asm

Step 7: Go on Geany and build and run the code

Step 8: Now verify the output in the 7 Seven Segment Display