ASSEMBLY ASSIGNMENT

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IIITH - Future Wireless Communications (FWC)

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Contents

Abstract

This manual shows that move the content of one register to another register :

1 Introduction

1.1 7474 IC:

This IC contains 2 D-flip flops.
For this section total of 4 flip-flops(2 ICs) are required since we need to design a 4-bit shift register.

1.2 Arduino:

In Arduino Uno we generate the clock pulse which is given to the each and every flip-flop by default.
We take 5 volts and Ground as the supply to the bread board from the Arduino board.

2 Components

Component	Values	Quantity
Arduino	UNO	1
JumperWires	M-M	20
Breadboard		1
IC	7447	2

3 PIN Diagram

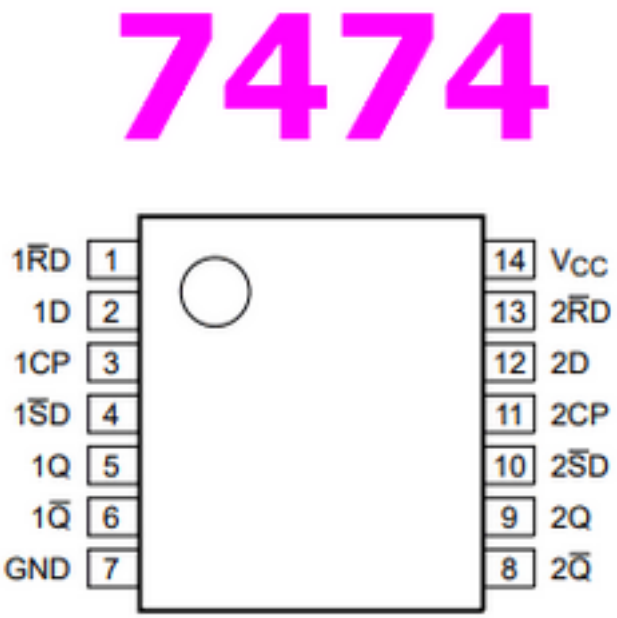


Figure.a

4 Truth Table

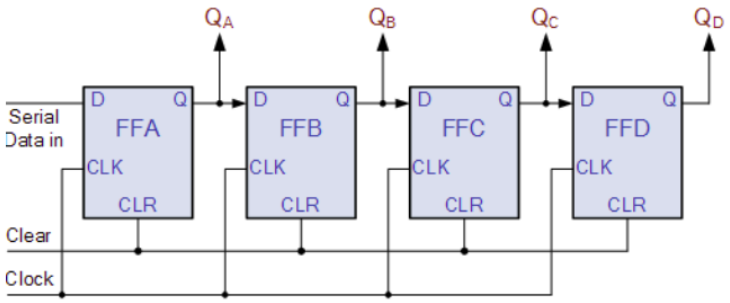
D1	Q1=D2	Q2=D3	Q3=D4	Q4
0	0	0	0	0
1	1	0	0	0
1	1	1	0	0
0	0	1	1	0
0	0	0	1	1
0	0	0	0	1
0	0	0	0	0

Truth table for 0110

5 Circuit Diagram

Figure.b

4-bit shift register: 1.It has 4 D-flip flops.
2.Verify the output for the sequence by changing the D1 pin to Vcc and Ground for different clock cycles.
3.It has 4 outputs i.e Q1, Q2, Q3 and Q4.



4. We need to give the input from MSB to LSB.

6 Implementation

Connections

Problem-1 1. Connect the circuit as per the above diagram.
2. Execute the circuit using the below code.

https://github.com/Radhikarkv/fwcproject.git

Problem-2 1. Same circuit can be implemented by without IC display to the Q1, Q2, Q3 AND Q4 respectively.
2. Execute the circuit using the below code.

https://github.com/Radhikarkv/fwcproject.git