7447

Here we are usind 7474 ic to increment the number

pin diagrame of 7474 ic:
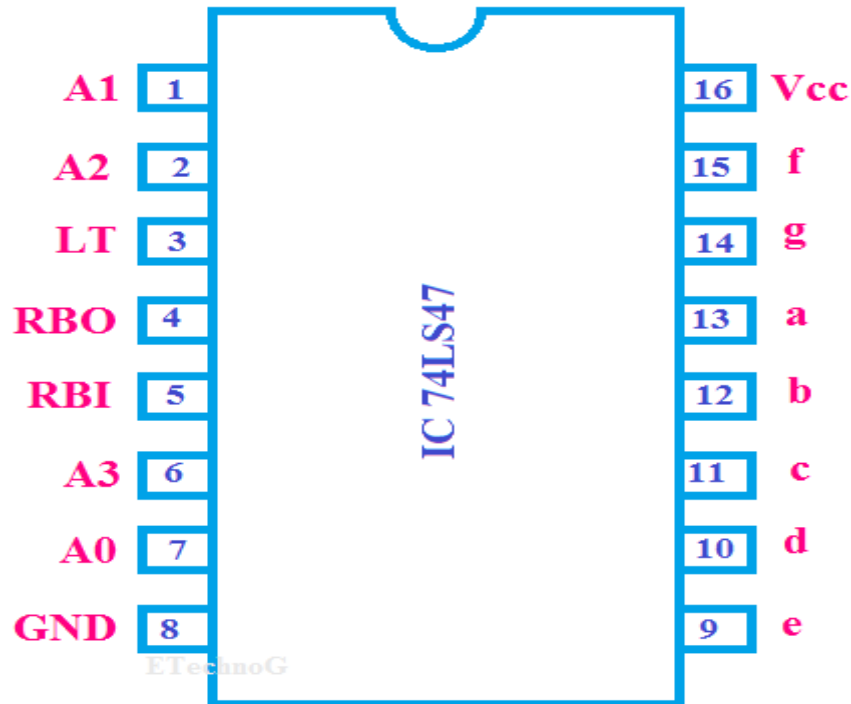
Connections:

7447	a	b	c	d	e	f	g
sevenseg	a	b	c	d	e	f	g

7447	A0	A1	A2	A3	GND	Vcc
Arduino	2	3	4	5	GND	5v

Code:

```
int Z=0,Y=0,X=1,W=1;
int D,C,B,A;

//Code released under GNU GPL.  Free to use for anything.
void disp_7447(int D, int C, int B, int A)
{
  digitalWrite(2, A); //LSB
```

```
  digitalWrite(3, B);
  digitalWrite(4, C);
  digitalWrite(5, D); //MSB

}
// the setup function runs once when you press reset or power the board
void setup() {
   pinMode(2, OUTPUT);
   pinMode(3, OUTPUT);
   pinMode(4, OUTPUT);
   pinMode(5, OUTPUT);
}

// the loop function runs over and over again forever
void loop() {
  A=(!W&&!X&&!Y&&!Z) || (!W&&X&&!Y&&!Z) || (!W&&!X&&Y&&!Z) || (!W&&X&&Y&&!
Z) ||(!W&&!X&&!Y&&Z);
  B=(W&&!X&&!Y&&!Z) || (!W&&X&&!Y&&!Z) || (W&&!X&&Y&&!Z) || (!W&&X&&Y&&!
Z);
  C=(W&&X&&!Y&&!Z) || (!W&&!X&&Y&&!Z) || (W&&!X&&Y&&!Z) || (!W&&X&&Y&&!Z);
  D = (W&&X&&Y&&!Z)||(!W&&!X&&!Y&&Z);

disp_7447(D,C,B,A);
}
```
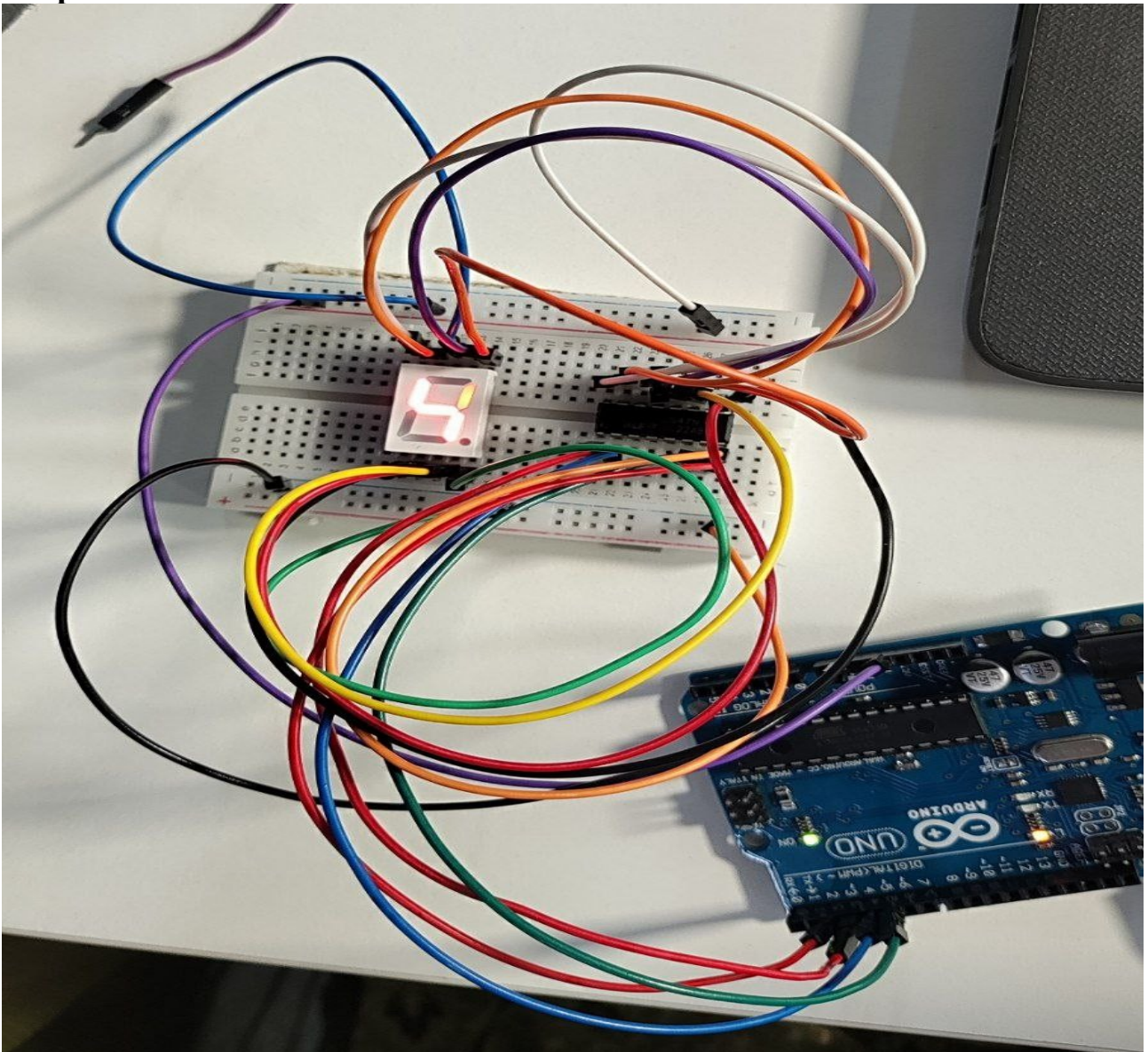
Truth Table:

Z	Y	X	W	D	C	B	A
0	0	0	0	0	0	0	1
0	0	0	1	0	0	1	0
0	0	1	0	0	0	1	1
0	0	1	1	0	1	0	0
0	1	0	0	0	1	0	1
0	1	0	1	0	1	1	0
0	1	1	0	0	1	1	1
0	1	1	1	1	0	0	0
1	0	0	0	1	0	0	1

Output:

Q.Now write a program where
(a) the binary inputs are given by connecting to 0 and 1 on the breadboard
(b) incremented by 1 using Table and
(c) the incremented value is displayed on the seven segment display.

Code:
//Declaring all variables as integers
int Z,Y,X,W;
int D,C,B,A;

//Code released under GNU GPL. Free to use for anything.
void disp_7447(int D, int C, int B, int A)

```
{
  digitalWrite(2, A); //LSB
  digitalWrite(3, B);
  digitalWrite(4, C);
  digitalWrite(5, D); //MSB

}
// the setup function runs once when you press reset or power the board
void setup() {
    pinMode(2, OUTPUT);
    pinMode(3, OUTPUT);
    pinMode(4, OUTPUT);
    pinMode(5, OUTPUT);
    pinMode(6, INPUT);
    pinMode(7, INPUT);
    pinMode(8, INPUT);
    pinMode(9, INPUT);
}

// the loop function runs over and over again forever
void loop() {
 W = digitalRead(6);
 X = digitalRead(7);
 Y = digitalRead(8);
 Z = digitalRead(9);
 A=(!W&&!X&&!Y&&!Z) || (!W&&X&&!Y&&!Z) || (!W&&!X&&Y&&!Z) || (!W&&X&&Y&&!Z) ||(!W&&!X&&!Y&&Z);
 B=(W&&!X&&!Y&&!Z) || (!W&&X&&!Y&&!Z) || (W&&!X&&Y&&!Z) || (!W&&X&&Y&&!Z);
 C=(W&&X&&!Y&&!Z) || (!W&&!X&&Y&&!Z) || (W&&!X&&Y&&!Z) || (!W&&X&&Y&&!Z);
 D = (W&&X&&Y&&!Z)||(!W&&!X&&!Y&&Z);

disp_7447(D,C,B,A);
}
```

note:Here inputs are changing manually