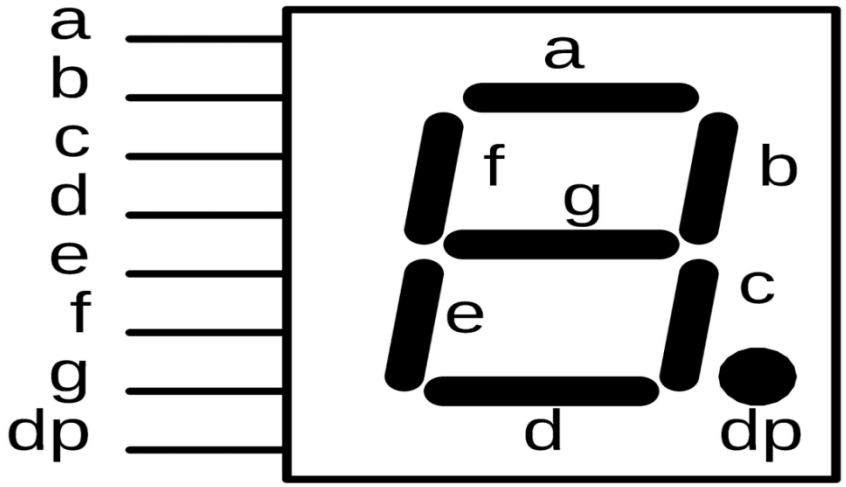
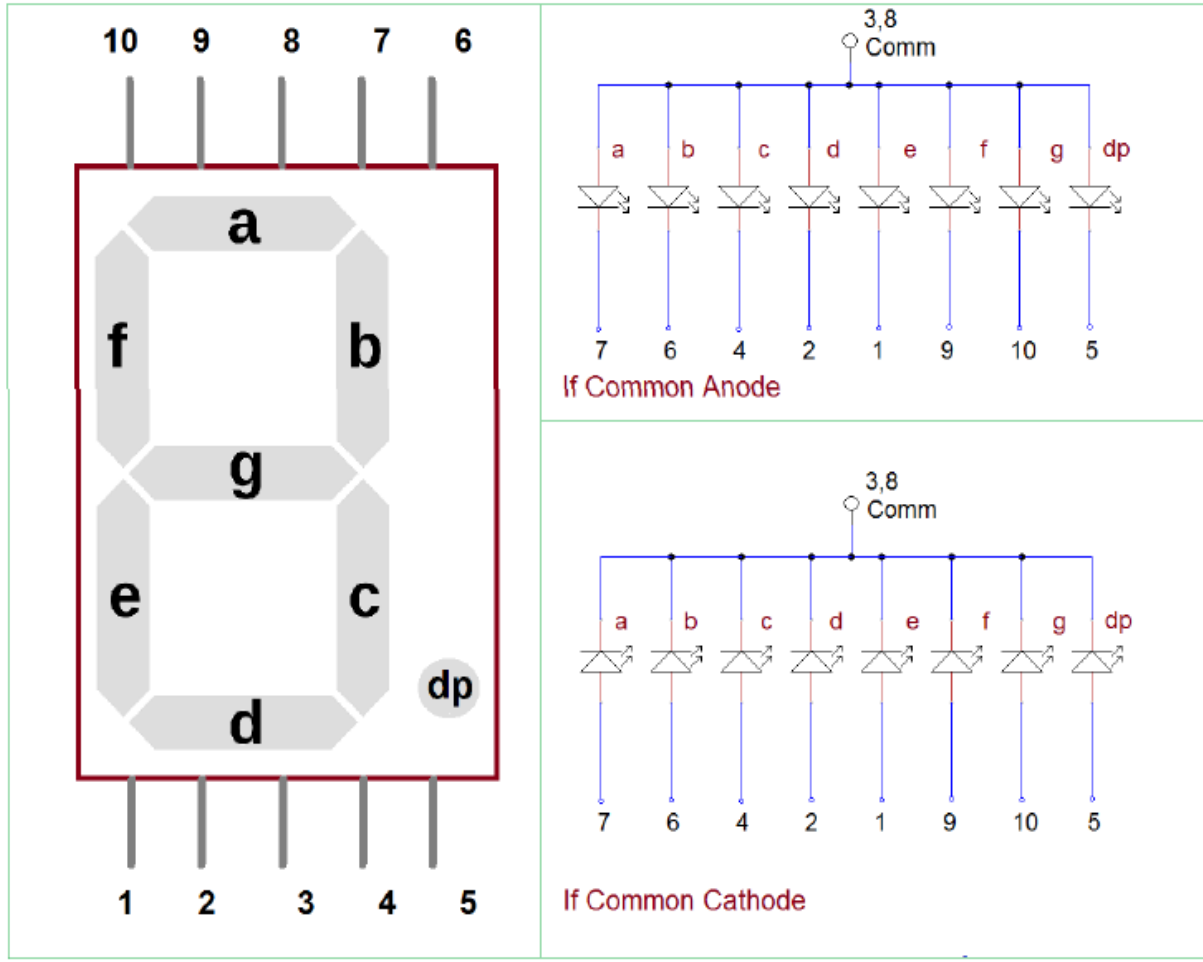
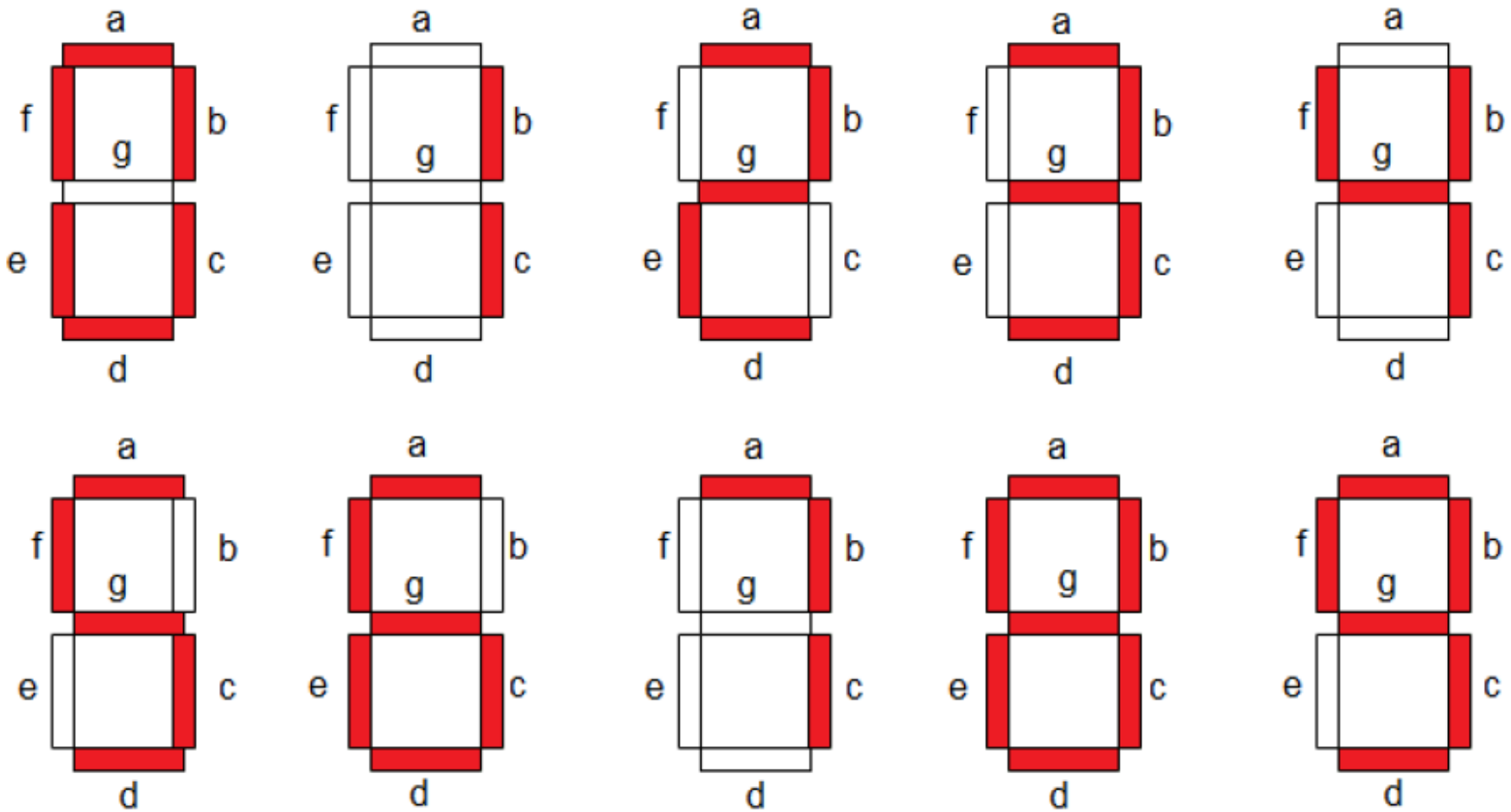
Seven-Segment display

- Consists of seven segments LED that can be controlled to display variety of numbers and pattern.
- There are two types of seven-segment:
  - Common Cathode
  - Common Anode.



7 Segment Display Pinout




a
f
b
g
e
c
d

COMMON CATHODE

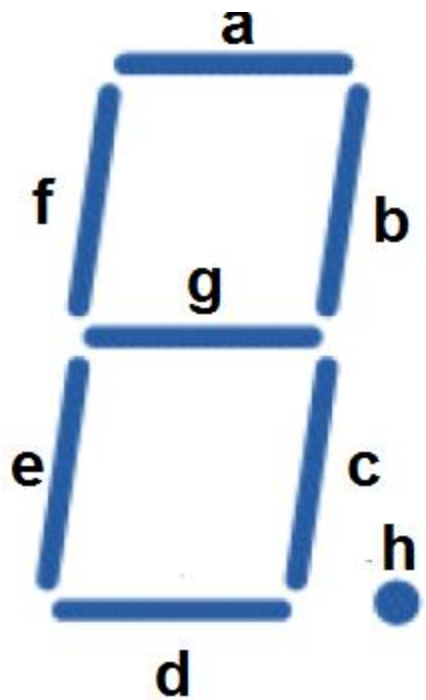
Display 0

MSB LSB

h g f e d c b a

0 0 1 1 1 1 1 1

0x3F



COMMON ANODE

Display 0

MSB LSB

h g f e d c b a

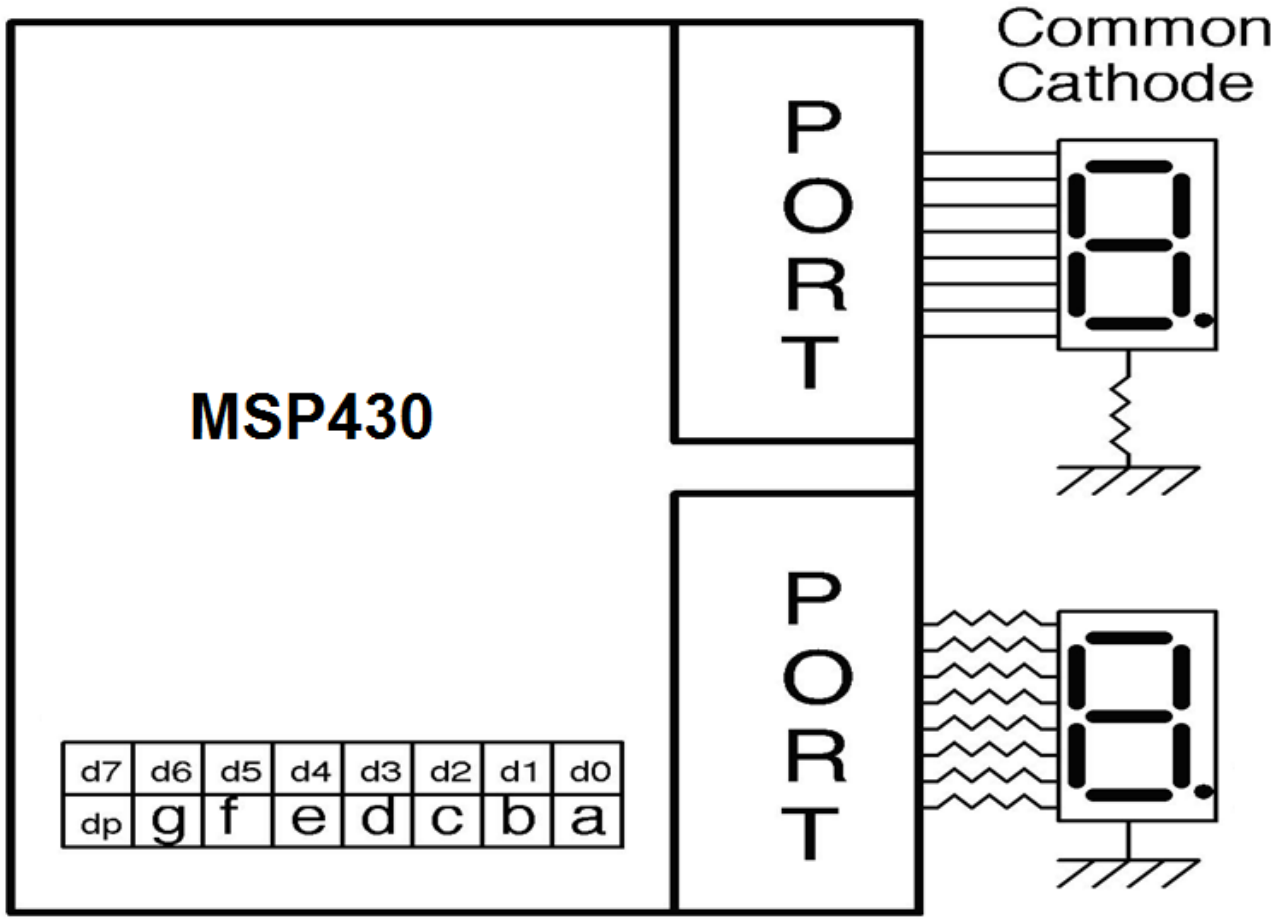
1 1 0 0 0 0 0 0

0xC0

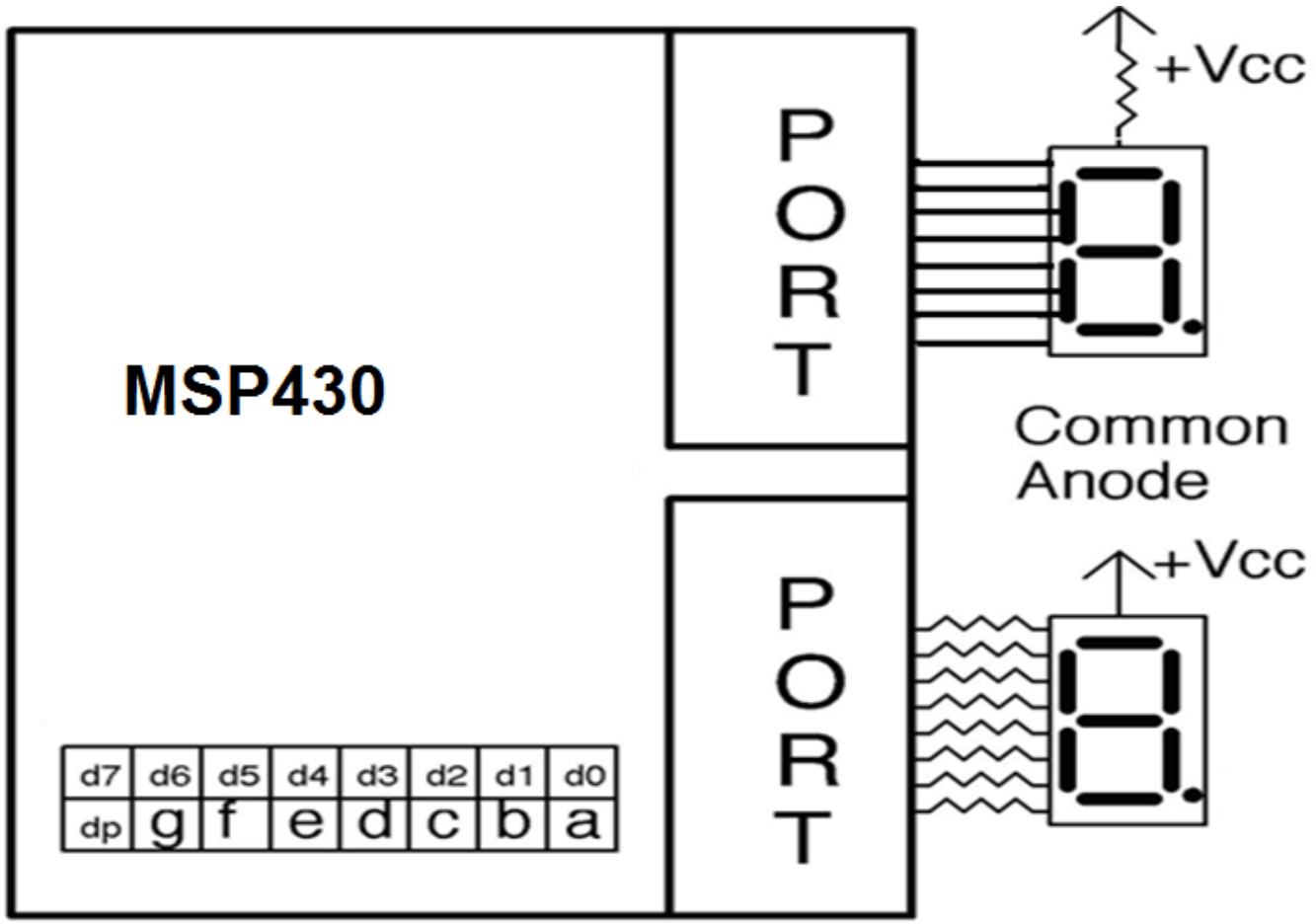
Look Up Table for Common Anode & Common Cathode

Numbers	Common Cathode		Common Anode	
	(DP)GFEDCBA	HEX Code	(DP)GFEDCBA	HEX Code
0	00111111	0x3F	11000000	0xC0
1	00000110	0x06	11111001	0xF9
2	01011011	0x5B	10100100	0xA4
3	01001111	0x4F	10110000	0xB0
4	01100110	0x66	10011001	0x99
5	01101101	0x6D	10010010	0x92
6	011111101	0x7D	10000010	0x82
7	00000111	0x07	11111000	0xF8
8	01111111	0x7F	10000000	0x80
9	01101111	0x6F	10010000	0x90

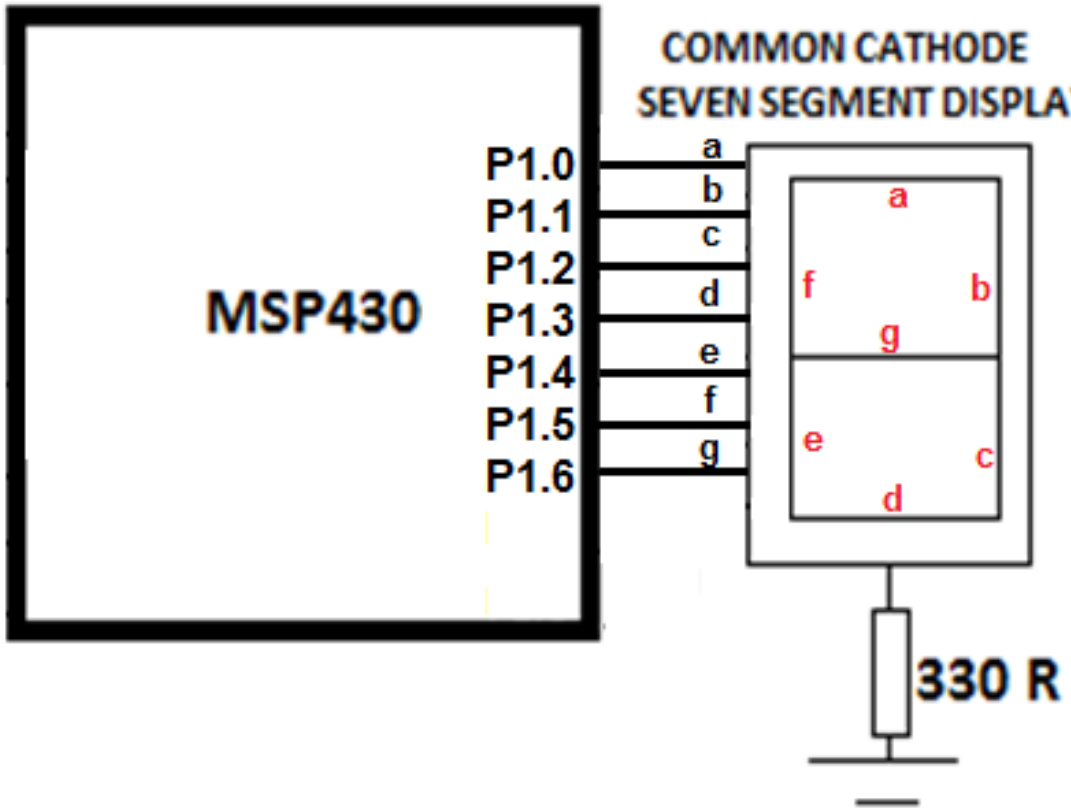
Driving Seven Segment Displays



Driving Seven Segment Displays



Interfacing Seven Segment Display with MSP430



Program to display 0 to 9 on 7 segment Display

```
#include "msp430.h"
unsigned char num[10] = {0x3F,0x06,0x5b,0x4f,0x66,0x6d,0x7d,0x07,0x7f,0x6f };
void delay(void);
void main( void )
{
  // Stop watchdog timer to prevent time out reset
  WDTCTL = WDTPW + WDTHOLD;
  P1DIR = 0xFF;
   while(1){
    for (int i=0; i<10;i++){
    P1OUT=num[i];
    delay();
    }
  }
}
```