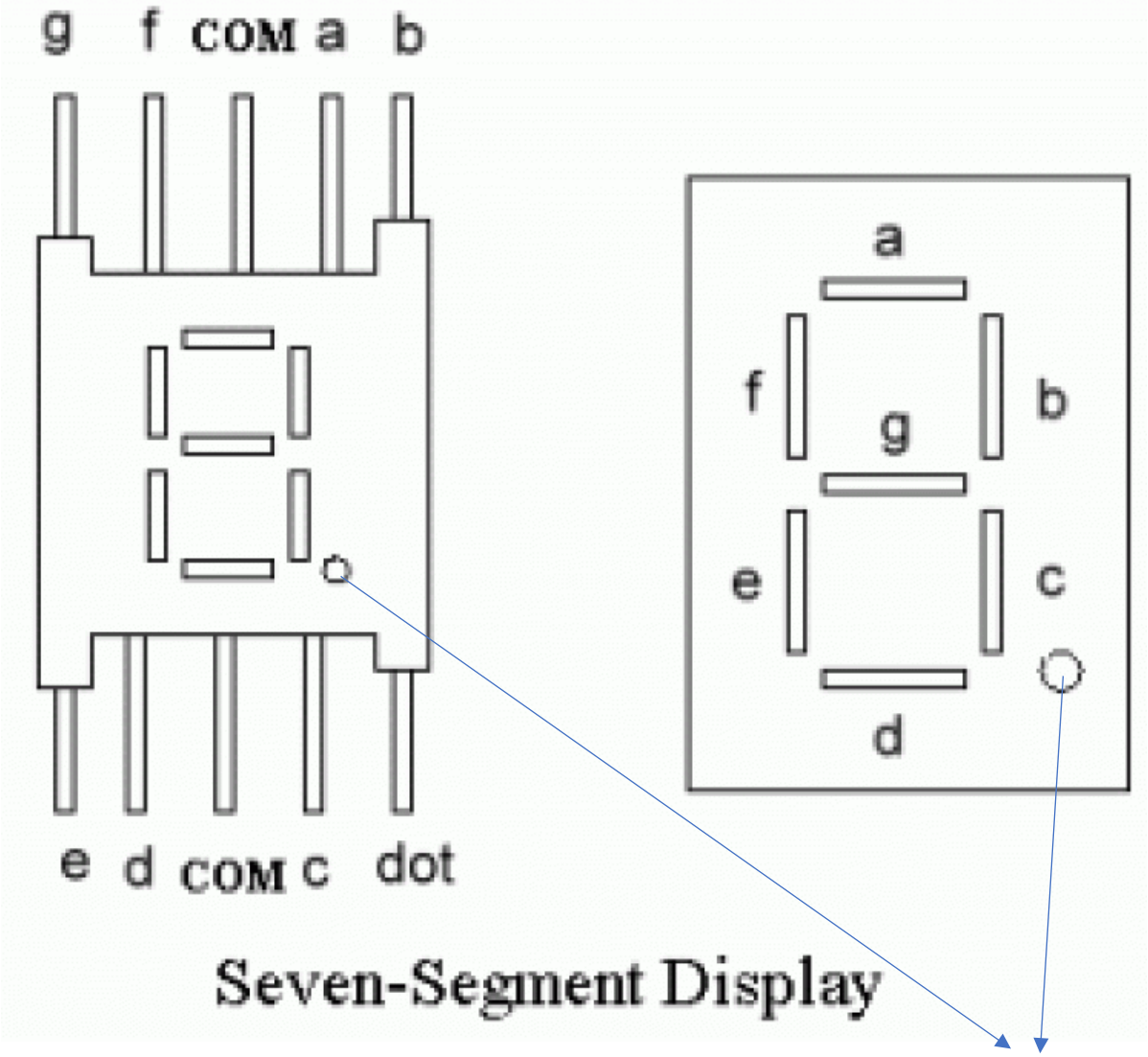
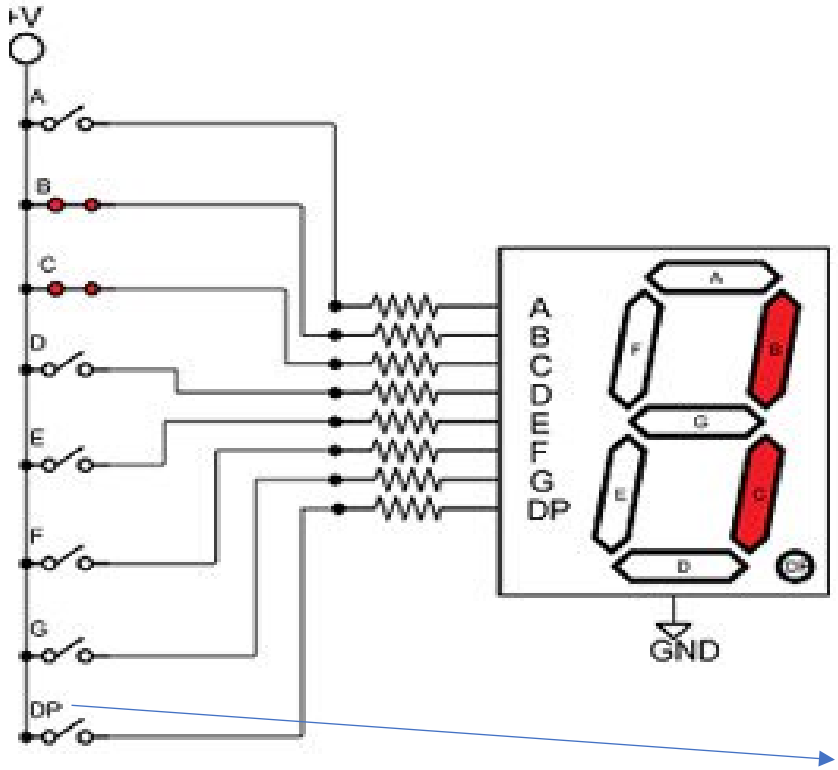
7 Segment Display

A ***seven-segment display*** *is a form of electronic display service for displaying decimal numbers that is an alternative to the more complex* ***dot matrix displays.*** *It can also use to display the letters for A-F.Seven segment displays are widely used in digital clocks, electronics meter, basic calculators etc.*



Here a,b,c,d,e,f,g and dot are LEDs, which glows according to our input supply.

There are total of 10 port for connection, out of which 2 are common port which are short circuit(one is connected to voltage source and another act as a ground).The rest 8 ports(a,b,…g & dot) are the 8 direct connections of the leds, means if we connect the upper left most port to the circuit then, the led correspond to that port i.e, 'B' will glow.



Here in the only 2 port B&C are connected then the LEDs B&C glows.

- *Here it is important to use resistance between led and source to avoid damages in the leds.*

For displaying the numbers 0-9 and letters A-F, there is a following table which identifies which LEDs combination will form which numbers and letters.

Segments (✓ = ON)							Display
a	b	c	d	e	f	g	
✓	✓	✓	✓	✓	✓		0
	✓	✓					1
✓	✓		✓	✓		✓	2
✓	✓	✓	✓			✓	3
	✓	✓			✓	✓	4
✓		✓	✓		✓	✓	5
✓		✓	✓	✓	✓	✓	6
✓	✓	✓					7

Segments (✓ = ON)							Display
a	b	c	d	e	f	g	
✓	✓	✓	✓	✓	✓	✓	8
✓	✓	✓			✓	✓	9
✓	✓	✓		✓	✓	✓	A
		✓	✓	✓	✓	✓	b
✓			✓	✓	✓		C
	✓	✓	✓	✓		✓	d
✓			✓	✓	✓	✓	E
✓				✓	✓	✓	F

Here tick mark signifies that LED--ON and blank space- OFF.

- *It is difficult to operate it manually as it demands the frequently ON and OFF of LEDs. So, we BCD(Binary Coded Decimal) in which there are 4 inputs where we input binary digits for corresponding decimal number system.*

We call this as BCD to 7 segment display

Here is another truth table about how BCD works.

BCD Signal				Display	BCD Signal				Display
D	C	B	A		D	C	B	A	
0	0	0	0		0	1	0	1	
0	0	0	1		0	1	1	0	
0	0	1	0		0	1	1	1	
0	0	1	1		1	0	0	0	
0	1	0	0		1	0	0	1	

0 = logic low 1 = logic high

Here display is the 7 segment display, means it is table of intial input- BCD to final output from 7 segment display.s