Concluding Unit 1

Electronics symbol

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- An **electronic symbol** is a pictogram used to represent various electrical and electronic devices or functions, such as wires, batteries, resistors, and transistors, in a schematic diagram of an electrical or electronic circuit. These symbols are largely standardized internationally today, but may vary from country to country, or engineering discipline, based on traditional conventions.

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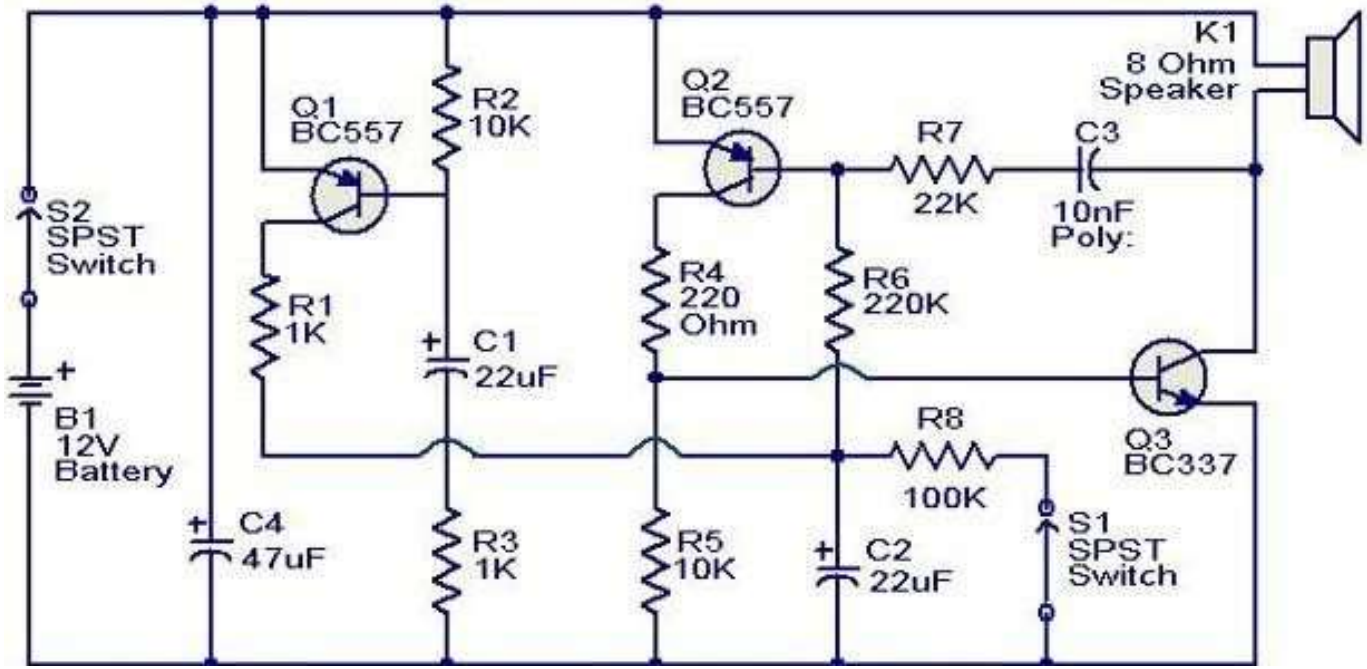
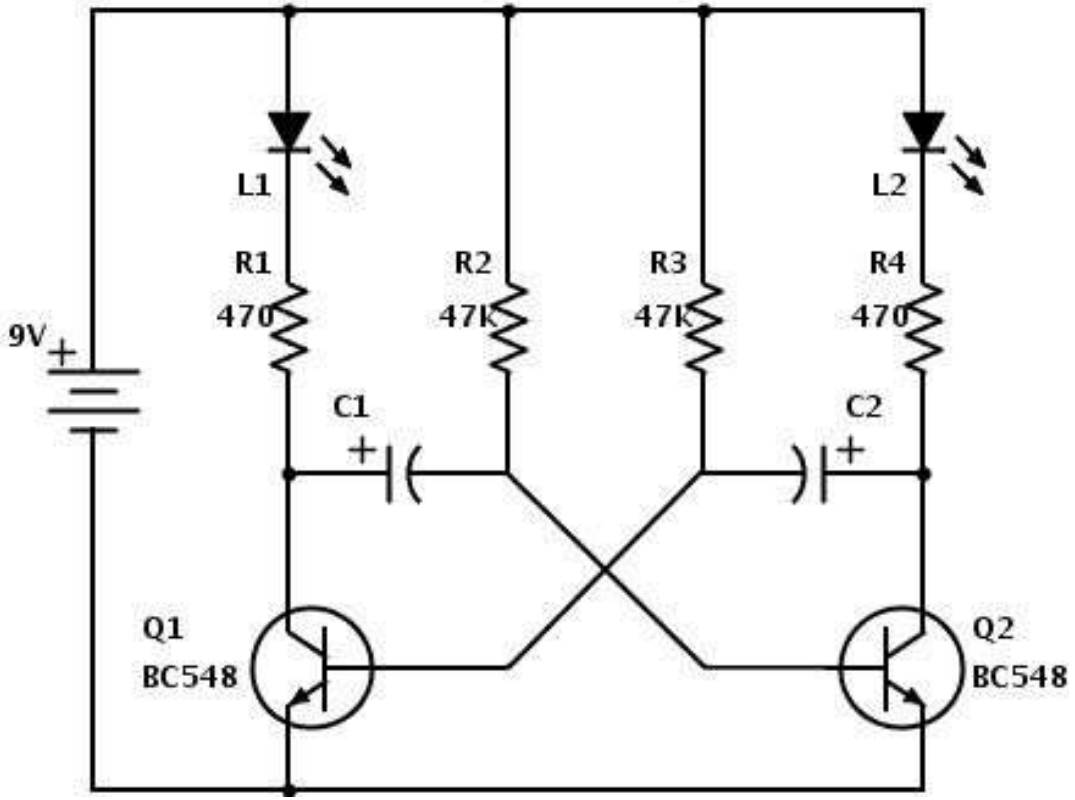
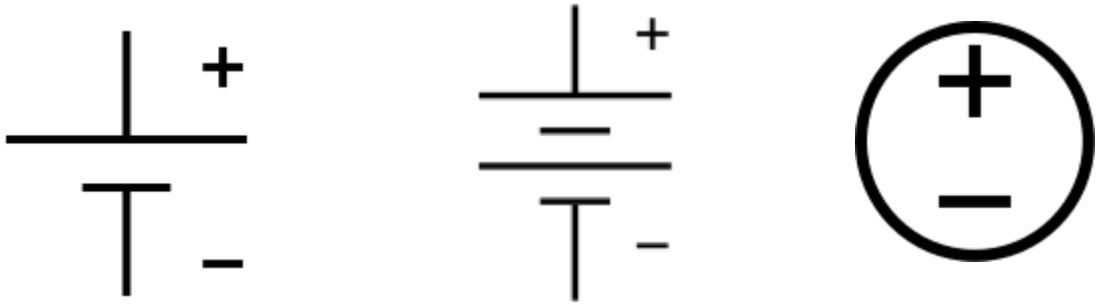




Source

An electrical source is **a device that is capable of converting non-electrical energy into electrical energy**

An example of this is a battery that can convert chemical energy into electrical energy.



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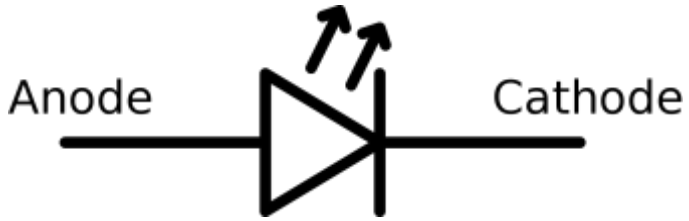
Resistor

A **resistor** is a passive two-terminal electrical component that implements electrical resistance as a circuit element.

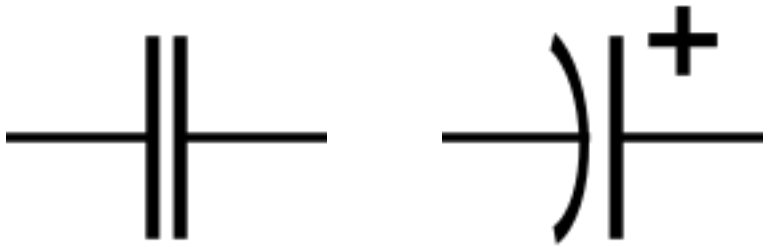
LED

A **light-emitting diode** (**LED**) is a semiconductor light source that emits light when current flows through it.



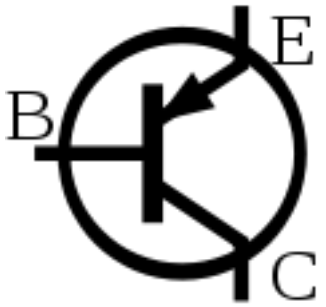
Capacitor

A **capacitor** is a device that stores electrical energy in an electric field. It is a passive electronic component with two terminals.

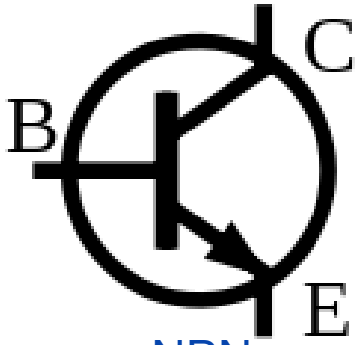


Transistor

A **transistor** is a semiconductor device used to amplify or switch electrical signals and power.



PNP



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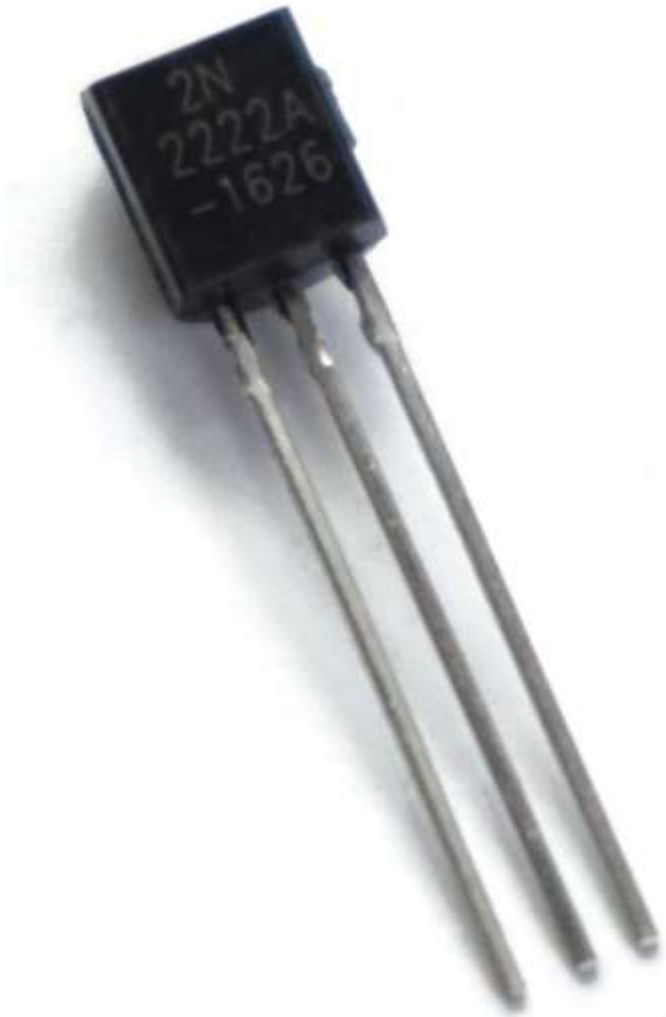
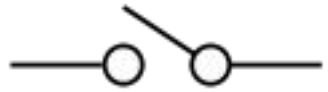
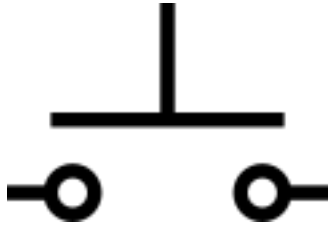


Switch

A switch is **a small control for an electrical device which you use to turn the device on or off**.



Single-pole



Pushbutton

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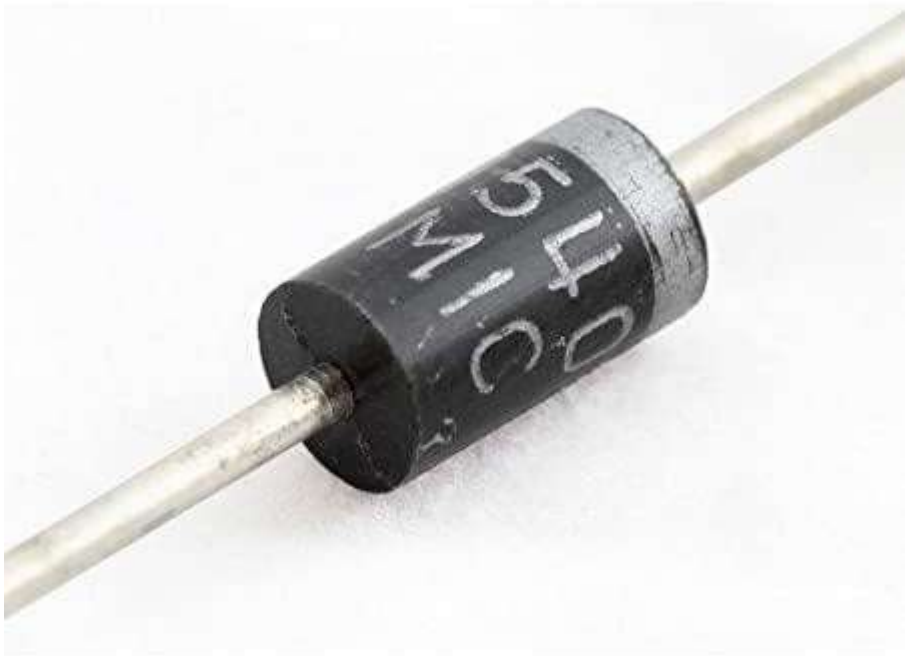
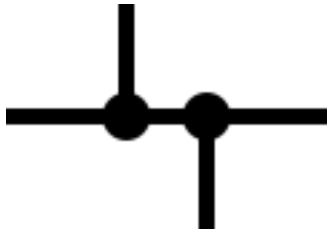
Diode

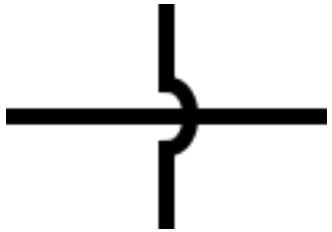
Diode, **an electrical component that allows the flow of current in only one direction**.



Trace



Trace junction



Trace crossing

Buzzer

A buzzer or beeper is **an audio signaling device**, which may be mechanical, electromechanical, or piezoelectric (piezo for short).

Polarity to the component

- Polarity is also important **for determining the direction of current flow**.
- A polarized component, a part with polarity, **can only be connected in a circuit in one direction**.

Eg.batteries, integrated circuits, transistors, voltage regulators, electrolytic capacitors, and diodes

- Non polarized component -A non-polarized component -- **a part without polarity** -- can be connected in any direction and still function the way it's supposed to function
- E.g. Resistor

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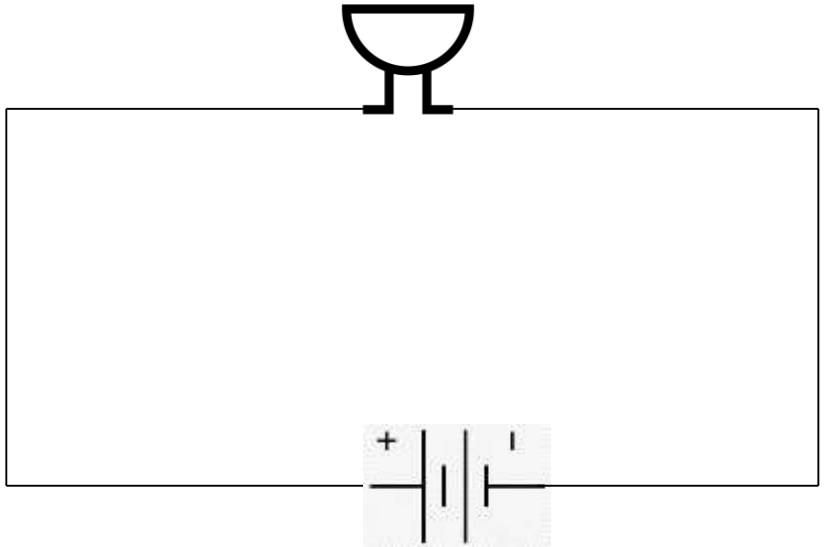
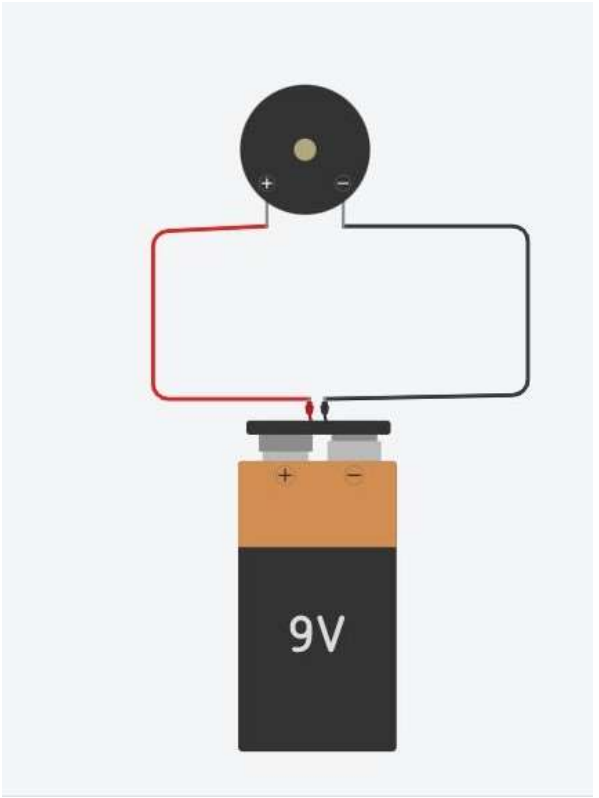
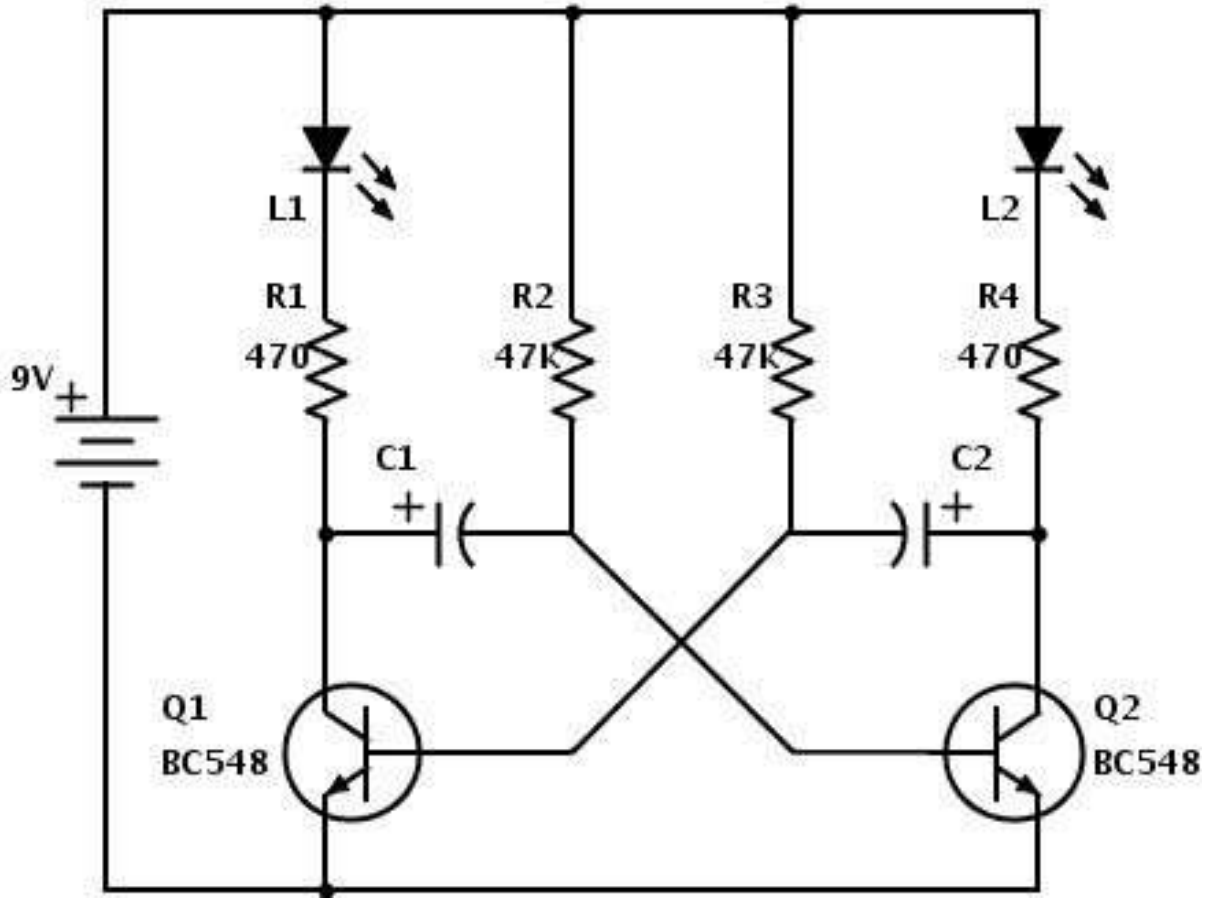




Activity

- Draw circuit
- Write down used component with quantity

Circuit 1



Arduino programming Command

- **Void setup-To** `put your setup code here, to run once`
- **Void loop-** `put your main code here, to run repeatedly`
- **pin Mode(pin,Mode)-**The Arduino pin number to set the mode of. mode: INPUT, OUTPUT,
- **Delay()-**to provide time
- **HIGH**-On condition
- **LOW**-low condition
- **digitalWrite()-**write data to digital pin from Arduino

Micro-controller –ATMEGA 328

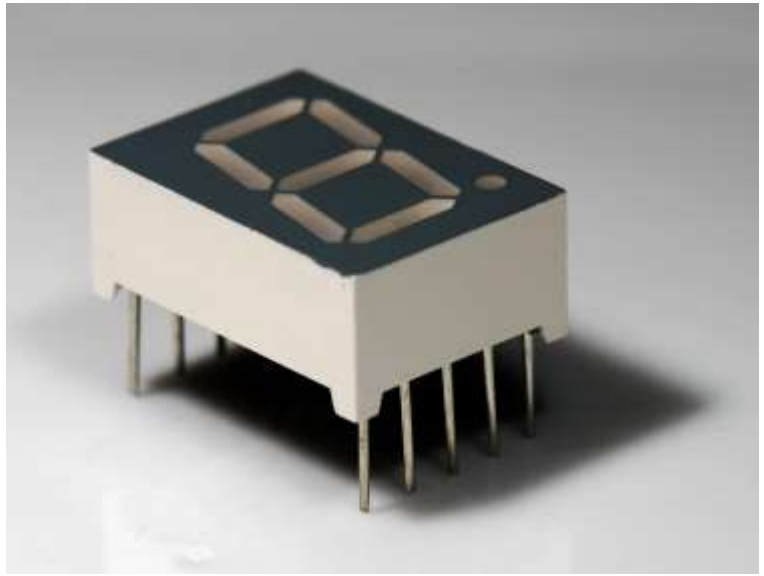
Arduino

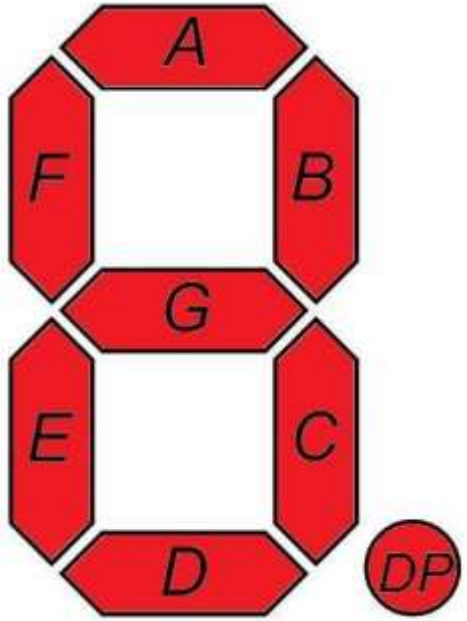
Code

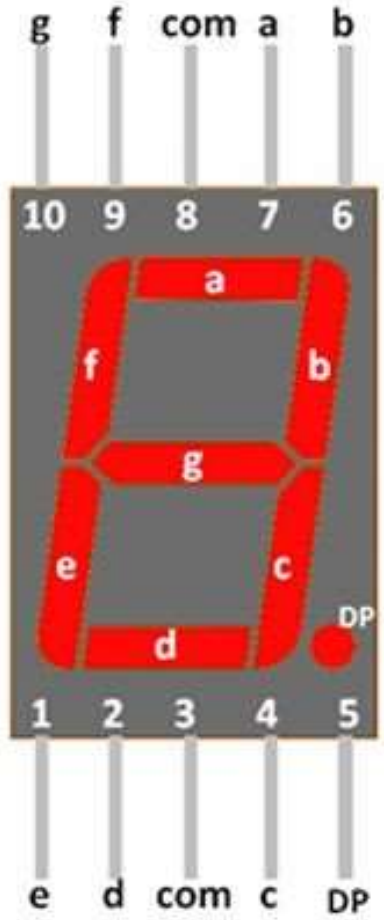
```
void setup()
{
  pinMode(13, OUTPUT);
}
void loop()
{
  digitalWrite(13, HIGH);
  delay(1000); // Wait for 1000 millisecond(s)
 digitalWrite(13, LOW);
 delay(1000); // Wait for 1000 millisecond(s)
}
```

Seven Segment display

- A seven-segment display is a form of electronic display device for displaying decimal numerals






g f com a b
10 9 8 7 6
a
f b
g
e c
DP
d
1 2 3 4 5
e d com c DP


TRAIN