Light Emitting Diode(LED)

An LED is a simple electronic component that emits light when current passes through it. LEDs are widely used in electronics projects as indicators or signals to show the status of a system.

LED Pin Configuration:

Anode (+): The longer pin, which connects to the positive side (5V or output pin of Arduino).

Cathode (-): The shorter pin, which connects to the negative side (GND).

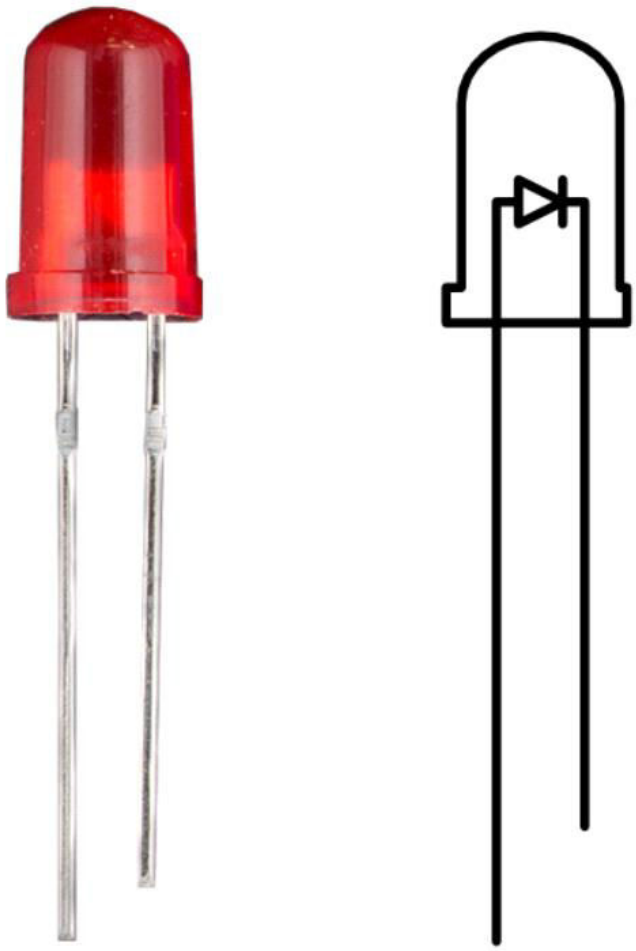

Fig1:Light Emitting Diodes

How to Use an LED with Arduino:

We can control an LED by connecting it to any digital pin of the Arduino and using the digitalWrite() function to turn it on or off.

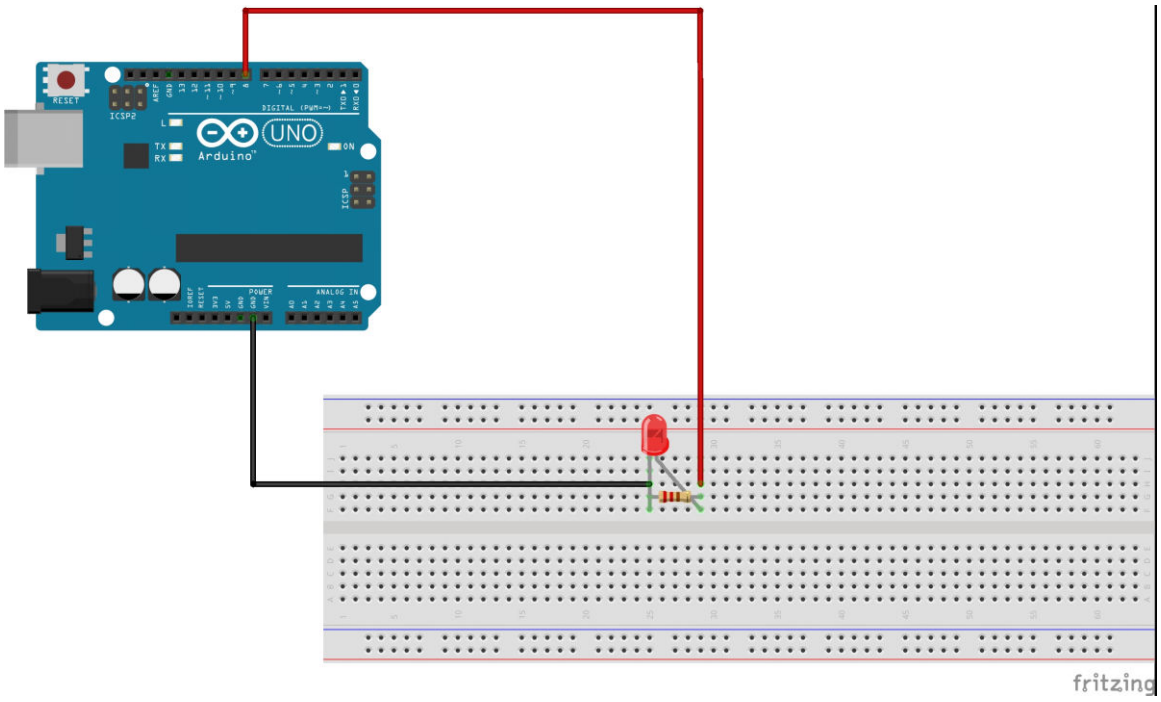

Fig2:LED with Arduino

Current-Limiting Resistor:

Always use a current-limiting resistor (typically 220Ω to 1KΩ) in series with the LED to prevent it from burning out due to excessive current. The resistor ensures that the current passing through the LED stays within safe limits.

Applications:

Status Indicators: LEDs are used to show whether a system is active or idle.

Visual Feedback: In interactive projects, LEDs provide

immediate visual feedback for user input.

Light Displays: Arrays of LEDs are used in displays, decorative lights, and patterns.