# **Color Sorting System Using Color Sensor and Servo Motor**

### **1. Introduction**

The **Color Sorting System** is an innovative project designed to automate the process of sorting objects based on their colors. This system utilizes an **Arduino microcontroller** along with a **color sensor** to detect and differentiate colors accurately. The primary goal is to identify objects of various colors and sort them accordingly, which can be highly beneficial in industries like recycling, manufacturing, and packaging. By integrating simple hardware components with efficient coding, the project demonstrates how automation can improve efficiency and reduce manual labor in sorting tasks.

This project specifically focuses on the use of a **color sensor** to detect colors and a **servo motor** to sort the objects based on the detected color.

### **2. Objective**

* To design an automated color sorting system using an Arduino board.
* To accurately detect different colors using a color sensor.
* To sort objects based on color using a servo motor.
* To demonstrate basic principles of automation and microcontroller-based systems.

### **3. Components Used**

* **Arduino Uno** (Microcontroller)
* **Color Sensor (TCS34725 or similar)**
* **Servo Motor (SG90 or MG90S)**
* **Jumper Wires**
* **Breadboard**
* **Power Supply**
* **Objects for Sorting (colored balls, cubes, etc.)**