

Color Detection Based Object Sorting System.

About This Project:

The purpose of this model is to design and implement a system which automatically separates products based on their color. This machine consists of three parts: conveyor belt, color sensor, and servo motor. The output and input of these parts was interfaced using Arduino microcontroller. To reduce human efforts on mechanical maneuvering different types of sorting machines are being developed. These machines are too costly due to the complexity in the fabrication process. A common requirement in the field of color sorting is that of color sensing and identification. For sorting object in industry optical sorting is very much convenient. The color sorting machine is mainly a device that can sense the different color of the object and assert them into different belt conveyor. When object moves from one placebo another with the rotation of conveyor belt, sensors as the input devices will send signal to microcontroller where microcontroller as the controller will give command to the actuator to do action. The final result was quite satisfactory. The color detecting sensors worked well and it was able to detect red, green & blue object quite nicely and change the direction of servo on right and left side to sort the object improper place. The belt moved from starting point to the end point through the roller without conflicting with the walls. The system performed well as programmed and detects the object according to their color.

This project of automatic color sorting is an excellent one because of its working principle and wide implementation. By applying the idea of this project an industry can easily sort the required product according toots color. Though it has some limitations, but by having done some modification this concept can be implemented in wide range of application.

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Block Diagram:

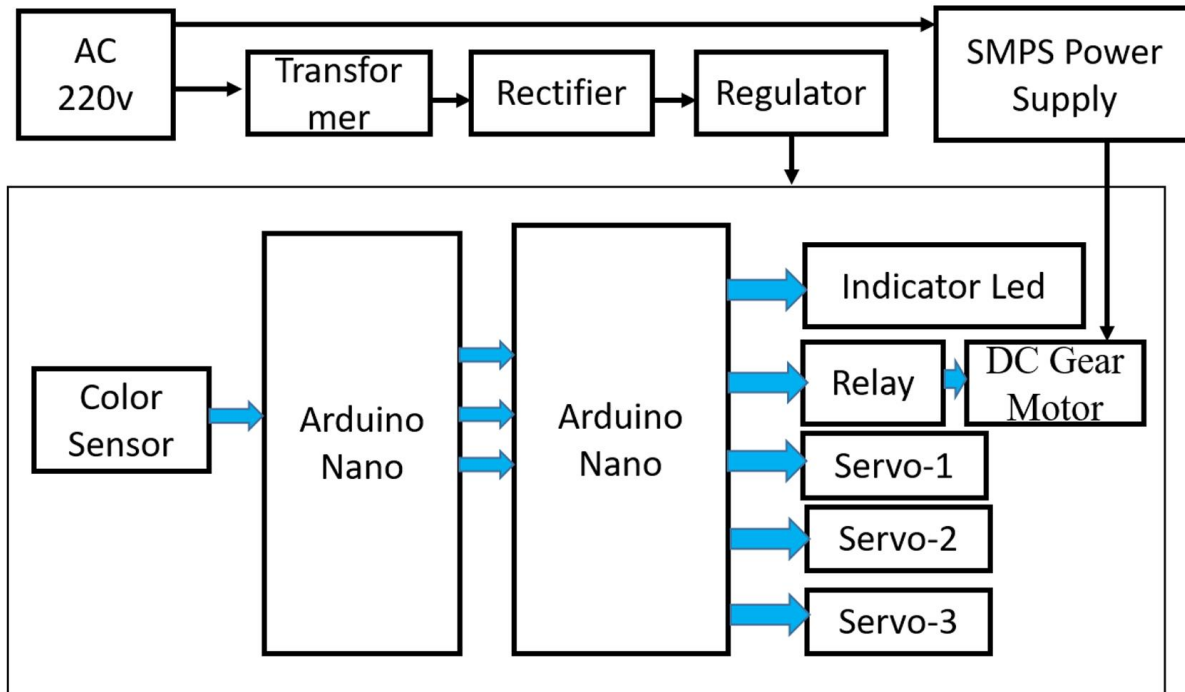


Figure: Block Diagram of Color Detection Based Object Sorting System.

Required Instrument:

- Arduino Nano.
- Servo Motor.
- Color Sensor.
- Indicator Led
- SMPS Power Supply.
- DC Gear Motor.
- L293D Motor Driver IC.

Advantages:

- Do not waste time.
- Very Cost Effective.
- Very fast sorting can be done.
- Physical power is not wasted.
- More accuracy.

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Applications:

Main applications can be for

- Sorting the product according to their color.
- Ensuring quality control in mass production.
- By some modification it can be used to detect any colored object.
- By some modification it can be used to measure the dimension of a product.
- By increasing its sensing capacity it can be used in airport.
- It is also very useful in laboratories and workshops.
- It's can be widely used any productive industry.



N.B: *Any modification of this project can be done as per your requirement. We will make the project according to your needs. Contact us with your any innovative engineering projects idea. We will help you to implement your project.*

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