Parshvanath Charitable Trust's
A. P. SHAH INSTITUTE OF TECHNOLOGY
(Approved by AICTE New Delhi & Govt. of Maharashtra, Affiliated to University of Mumbai)
(Religious Jain Minority)

Department of Information Technology

Academic Year: 2018-19 **Class / Branch: BEIT**

Project Title: An Automated Fruits Quality Detection Framework Using Colour Spectrography.

Group No:16

Group Members:

1)Surajkumar Yadav (15104022)

2) Barun Roy (16204023)

3) Khan Mohd Shoeb (16204029)

4)Ajaykranti Vishwakarma (14104022)

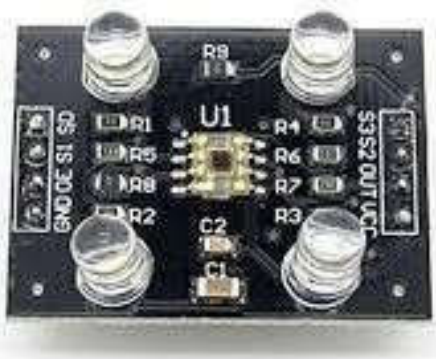
Guide: Prof. Rahul Ambekar

Arduino Boards :

Arduino is an open source electronics platform based on easy-to-use hardware and software .arduino boards are able to read inputs-light on a sensors,a finger on a button,or a Twitter message -and turn it into an output-activating a motor,turning on a led.

The arduino project provides tge Arduino integrated development environment (IDE),which is a cross platform application written in the programming language java.

Color Sensor TCS230 Module:

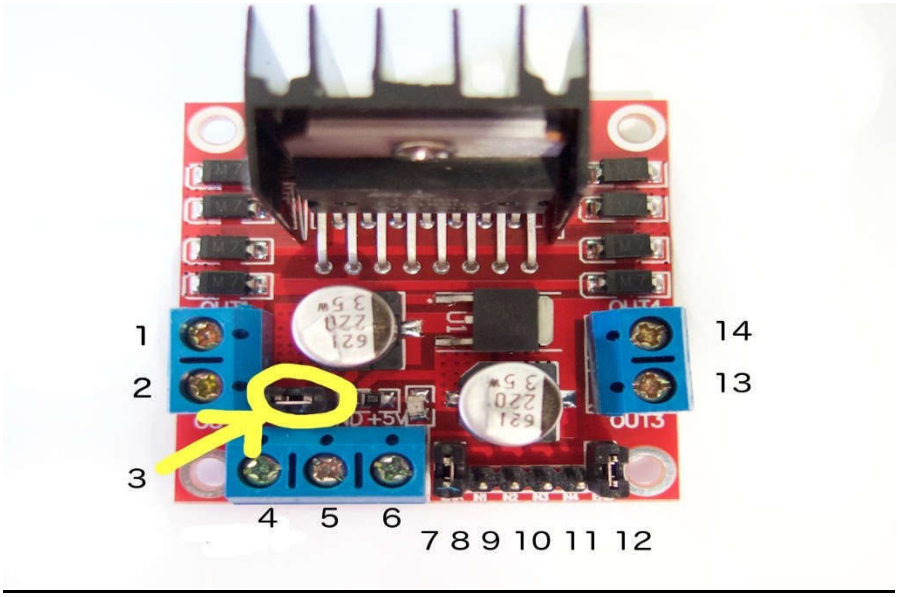


The TCS230 senses color light with the help of an 8 x 8 array of photodiodes. Then using a Current-to-Frequency Converter the readings from the photodiodes are

converted into a square wave with a frequency directly proportional to the light intensity. Finally, using the Arduino Board we can read the square wave output and get the results for the color.

If we take a closer look at the sensor we can see how it detects various colors. The photodiodes have three different color filters. Sixteen of them have red filters, another 16 have green filters, another 16 have blue filters and the other 16 photodiodes are clear with no filters.

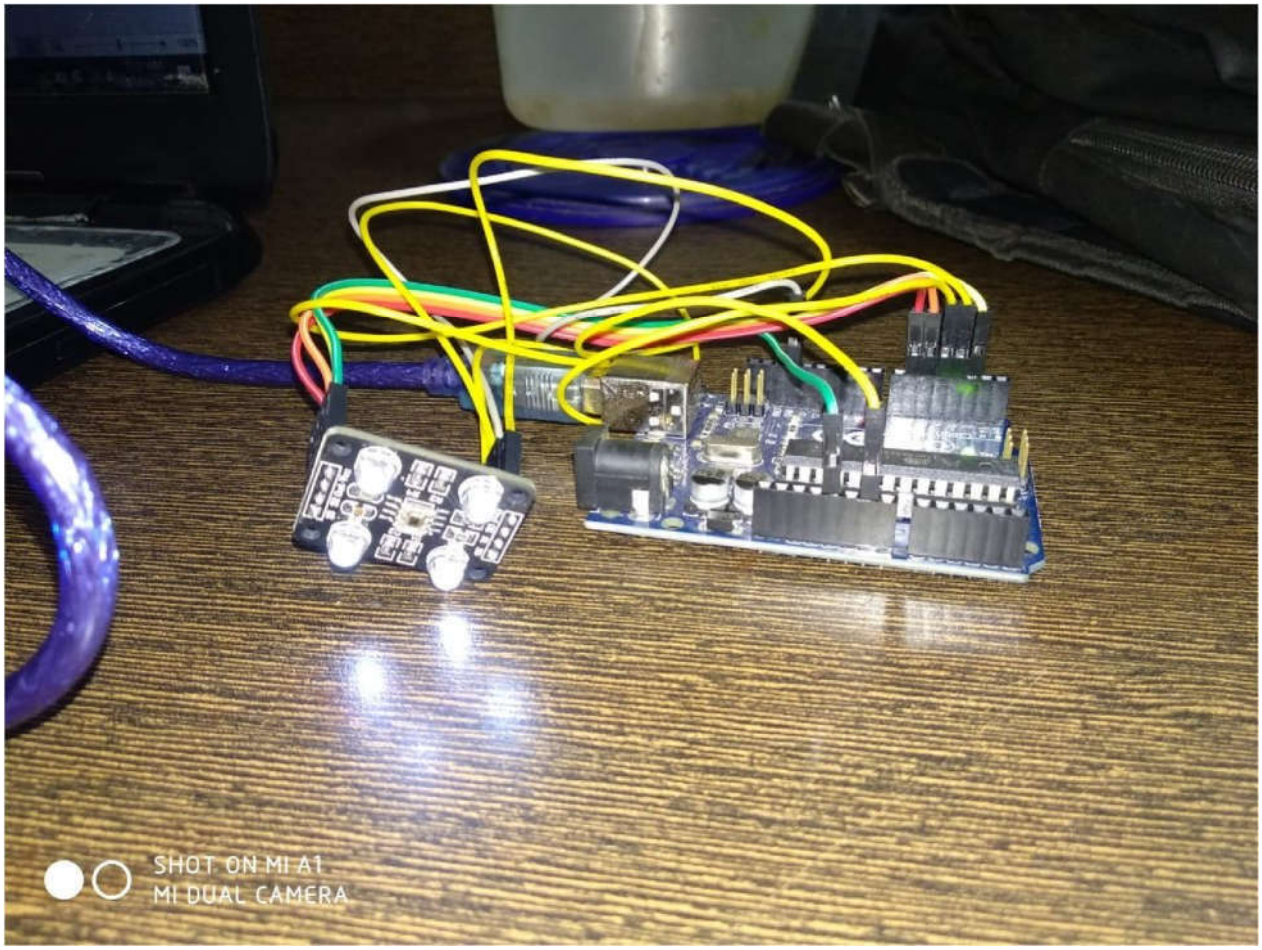
L298 H-Bridge Motor Driver

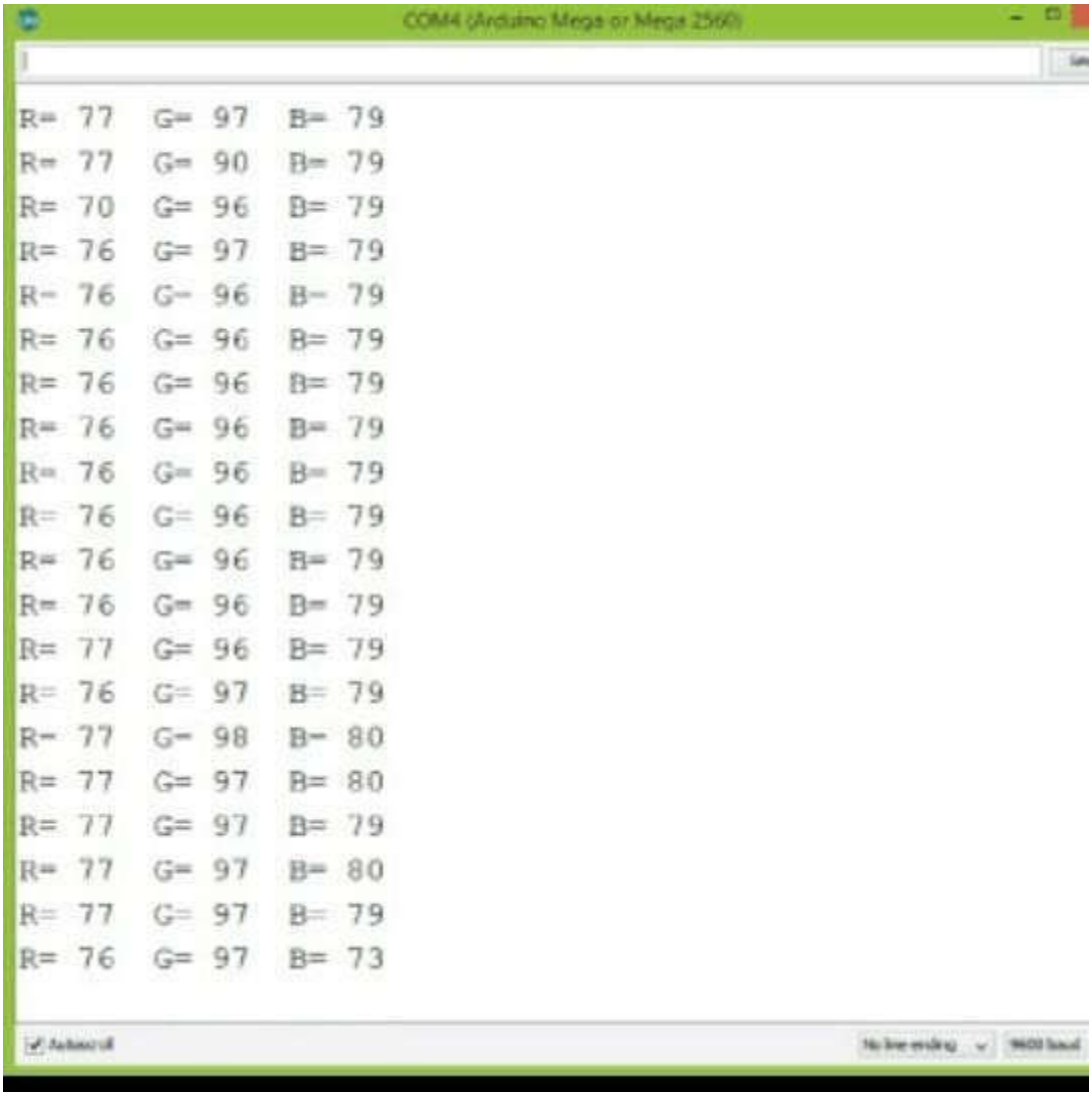


This dual bidirectional motor driver is based on the very popular L298 Dual H-Bridge Motor Driver Integrated Circuit. Thc circuit will allow you to easily and independently control two motors of up to 2A each in both directions.It is ideal for robotic applications and well suited for connection to a microcontroller requiring just a couple of control lines per motor it can also be interfaced with simple manual switches, TTL logic gates, relays, etc.The circuit incorporates 4 direction LED 12 per motor), a heat sink, screw terminals,well as eight Schottky EMF protection diodes Two high-power current sense resistors are also incorporated which allow monitoring of the current drawn on each motor through your microcontroller.An on-board user accessible 5V regulator is also incorporated which can also be used

to supply any additional circuits requiring regulated 5V DC supply of up to about 1A.

Connected system:




COM4 (Arduino Mega or Mega 2560)
R= 77 G= 97 B= 79
R= 77 G= 90 B= 79
R= 70 G= 96 B= 79
R= 76 G= 97 B= 79
R= 76 G= 96 B= 79
R= 76 G= 96 B= 79
R= 76 G= 96 B= 79
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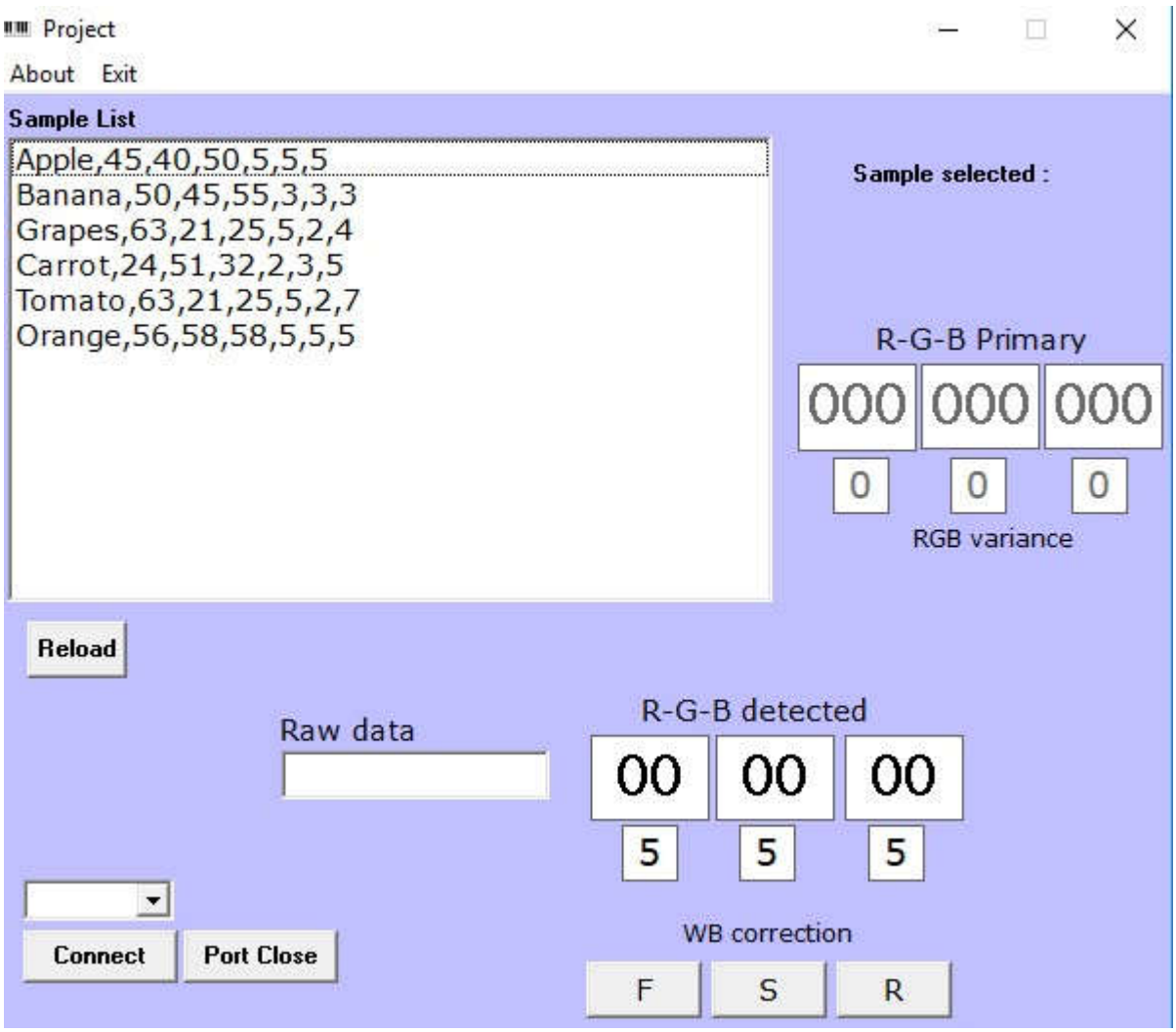
R= 76 G= 96 B= 79
R= 76 G= 96 B= 79
R= 76 G= 96 B= 79
R= 76 G= 96 B= 79
R= 77 G= 96 B= 79
R= 76 G= 97 B= 79
R= 77 G= 98 B= 80
R= 77 G= 97 B= 80
R= 77 G= 97 B= 79
R= 77 G= 97 B= 80
R= 77 G= 97 B= 79
R= 76 G= 97 B= 73

GUI :


Project
About
Exit
Sample List
Apple,45,40,50,5,5,5
Banana,50,45,55,3,3,3
Grapes,63,21,25,5,2,4
Carrot,24,51,32,2,3,5
Tomato,63,21,25,5,2,7
Orange,56,58,58,5,5,5
Sample selected :
R-G-B Primary
000
000
000
0
0
0
RGB variance
Reload
Raw data
R-G-B detected
00
00
00
5
5
5
Connect
Port Close
WB correction
F
S
R