IJARCCE

ISSN (Online) 2278-1021
ISSN (Print) 2319 5940

International Journal of Advanced Research in Computer and Communication Engineering
ISO 3297:2007 Certified
Vol. 5, Issue 10, October 2016

Color Sensor Robotic ARM

Mrs. Ruchi Varshney[1], Sneha Arora[2], Shivani[3], Sneha Gupta[4], Saksham Agarwal[5]

Guide (EC Department), M.I.T. Moradabad, Moradabad, India[1]

B.Tech, Student (EC), M.I.T. Moradabad, Moradabad, India[2, 3, 4, 5]

Abstract: This paper presents an application to sort colored objects with a robotic arm. This robot move according to color detecting concept. The detection of the particular colour is done by a light intensity to frequency converter method. In this project we make robot that detect the bomb. The objective of the project is pick the bomb and place at another location. The controller used 89s52 which belongs to the familiar 8051 family which produces an output with low delay and also its cost is low. It is interfaced with color sensor, motors to control the robotic structure. The components are easily available and of low cost, thus making the proposed system cheap and efficient.

Keywords: Robotic arm, Microcontroller, Light to frequency converter, DC servo motor.

I. INTRODUCTION

This is very innovative project because we are working on different type of technology with unique concept. In this project we make robot that diffuse the bomb. This robot have unique feature such as color detecting.
This robot moves according to color detecting concept..
This robot walk:

- Forward.
- Backward.
- Right.
- Left.
- Back.
- According to different types of color coding is done in keil software.
- Pick and place according to color.

II. MODE OF THE PROJECT

In this project the different type of modes are:

A. Transmitter Mode: In this mode we use the color detecting and display concept.
In this concept we use color sensor that sense the different type of color such as:

- White
- Black
- Red
- Blue.
- Green.
- Yellow.
- Etc

This type of command send to robot and this robot operate according to command.

B. Receiver Mode:
At this part the robot operates inthe following:

- Forward.
- Backward.
- Left.
- Right.
- Pick
- And place of ay device according to color command.

Other feature

This robot has a unique feature such as:

- Anti-accident avoiding feature.
- The Depth detection and with protection.
- The Bomb detection by metal detector.
- Weep the buzzer and indication on LED.

III. COMPONENTSAND SOFTWARE USED

A. Transmitter

- Microcontroller (at89s52).
- Transformer (step down).
- Diode.
- Capacitor (1000uf,27pf,10uf).
- Resistor (470ohm,1k,10k).
- LED.
- ADC 0809.
- Op07.
- Pnp and npn transistor.
- LCD.
- Ht-12e
- Ht-12d.
- Rf modulator.
- Color sensor.

B. Receiver

- Transformer (step down).
- Diode.
- Capacitors (1000uf,27pf,10uf).
- Camera,
- Resistors (470ohm,1k,10k).
- LED.

ISSN (Online) 2278-1021
ISSN (Print) 2319 5940

International Journal of Advanced Research in Computer and Communication Engineering
ISO 3297:2007 Certified
Vol. 5, Issue 10, October 2016

- Pnp and npntransistor.
- Relay.
- Sensor plates.
- IR sensor.
- LM-339.
- Optocoupler.
- Darlington pair of transistor.

C. Software Used

The proteus software is used for the circuit designing .keil software is used for the coding and the ARES is used for the pcb designing.

IV. PROJECT METHODOLOGY

We make a project in different modes: **I st mode:** In this mode we design over all frame script such as:

- Idea of project.
- Components list.
- Circuit diagram.

2nd mode: In this mode the following things are done:

- Calculate the components value.
- Decide the component rating.
- Name of components that may be used in the project.
- Purchase the components.

3rd Mode: This mode consists of the following:

- Assemble the components.
- Test the soldering dry or not.
- A circuit design on pcb.

4th mode: In this mode the software for coding are used as follows.

- We use keil software.
- We design a code in assembly or embedded C.
- We create the hex file.

5th mode: In this mode design a circuit diagram on proteus for simulation.

- Try to simulation on proteus.

6th mode: In this mode use the top-win software.

- The IC is programmed.

7th mode: In this mode features are tested.

V. PERFORMANCE AND EVOLUTION CRITERIA

In this project we try to best effort of technical skill. My project is prediction of new invention. That provides a new creation and scope in future.

These projects demonstrate the proper working and provide complete character.

VI. CONCLUSION

Thus we have developed colour based motion robotic arm. This is a user friendly model which uses robotic arm mechanism for defusing the bomb by cutting its wire through color based coding and a webcam for taking images.The result of the system abducts due to environmental conditions but it can be enhanced by improving camera quality.

REFERENCES

[1] Rafael C. Gonzalez and Richard E. Woods, "Digital Image Processing", Third Edition, Vol.3, Pearson Publications..
[2] Alessandro Golfarelli, Rossano Codeluppi and Marco Tartagni, "The Self-Learning Multi-Sensing Selection Process: Measuring Objects One by One", ARCES–LYRAS LAB University of Bologna, Campus of Forlì, 1-4244-1262-5/07/$25.00 ©2007 IEEE, IEEE SENSORS 2007 Conference.
[3] "The 8051 microcontroller and theembedded systems" (second edition) by Mohammad Mazidi, Janice G. Mazidi& Rollin D. Mckinlay.
[4] "Power Electronics" by M.D. Khanchandani, K.B. Singh (1998).