IJARCCE

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

International Journal of Advanced Research in Computer and Communication Engineering
ISO 3297:2007 Certified
Vol. 6, Issue 3, March 2017

Automated Locomotion Robot: using Arduino

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Abstract: In this report we have developed a locomotion robot which is mainly used to deliver goods and parcels from one Place to another. Input signals transmitted from a maximum distance of 150 m without a hitch, and the robot can also follow the instruction with a steady run. So it can be used to deliver products effectively. A small development board with a brain is known as Arduino. It communicates with the real world entities like LEDs and sensors.

Keywords: Arduino ATMega 2560, Bluetooth connection, Voice simulation, Android application, Sensors.

1. INTRODUCTION

Delivery robot is a mobile controlled robot which can be used to deliver goods from one place to another. This can reduce the human effort in delivering the goods. We are using Arduino microcontroller to control the robot. Initially we were come with the prototype model of our idea which can deliver products of light weight over a short range.

2. LETERATURE SURVEY

2.1 A LOW-COST AND SIMPLE ARDUINO-BASED EDUCATIONAL ROBOTICS

In this paper they have clarified about a minimal effort instructive robot. This mechanical technology unit keep running on UNO Arduino stage. This instructive robot will educate the nuts and bolts of maths, rationale programming and mechanical autonomy ideas[1-3]. Guideline is given in booklet for conveying ideas.

It benefits a piece organized environment to permit the fundamental comprehension of programming. It likewise offers every one of the means for creating in the development of a robot[3-6].

2.2 ANDROID PHONE CONTROLLED ROBOT USING BLUETOOTH

Presently a day's human can association with all question in genuine. We can lessen the human exertion by presenting new innovations. It will expand way of life. It conquers any hindrance between people and machine. Signals innovation has assumed a fundamental part in moving back this profound opening.

In this report, a careful investigation of various methods about "Human-Machine Connection" utilizing signals has been advertised. It can be caught with the assistance of an accelerometer. Then again, with the development of advanced cell its self-administering use has been rendered of no utilization. After examinations the movement innovation to limit motions through an android advanced cell with a characteristic accelerometer and Bluetooth module to arrange the energy of a machine[7][8].

2.3 ARDUINO BASED BLUETOOTH CONTROLLED ROBOT

A machine is commonly an electro-mechanical gadget that is guided by supercomputer and electronic encoding. Various robots have been worked for industrialized reason the world over. The most up to date ROBOT can conspire utilizing an application which is open through android versatile. Bluetooth articulation is utilized for gotten to through convention. Robot will take after the direction got from android mobiles. Every one of the exercises of robot movement can be prohibited. Quality and repeatability will be the result. Client can reconstruct the direction for better result[9][10].

2.4 ROBOT CONTROLLED CAR USING WI-FI MODULE

In this document, a robot is controlled through WI-FI module utilizing android portable. We can get to this robot in the absence of WI-FI motions by sending message[11]. Primary advantage of controlling this auto is we can utilize this auto for various reason. Client can watch the movement of robot. It conveys products starting with one place then onto the next. It diminishes the effort of individuals [12]. By utilizing this WI-FI module we can get to this robot for extensive variety of separation. In this advanced world these sort of creation is required for driving an extravagance life. We can redesign this robot to full fill the client require [6].

3. PROPOSED ARCHITECTURE

The robot is controlled by the android application. The system room remote can receive input signals transmitted from a maximum distance of 150 m without a hitch, and the robot can also follow the line with a steady run.

3.1 ARDUINO

A little improvement board with a mind that you can program is arduino. It speaks with the verifiable world through LEDs and sensors. Arduino is generally a moment PC. The Arduino MEGA is controlled by an ATmega2560P chip; it is the biggest chip on the board as

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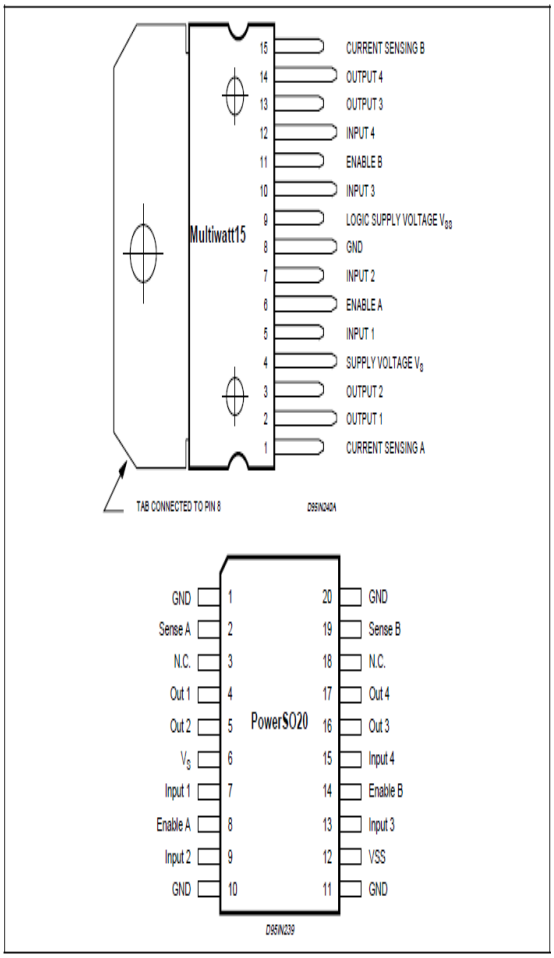
we can see on the picture beneath in which we can store our program. Figure 1 demonstrates the ridicule up of the arduino board.

Figure 1

For building up this ongoing motion robot we require the accompanying points of interest like air conditioning to-DC connector, ATmega2560. We need to speak with these segments for cycle. Arduino versatile control application is accessible in play store we can utilize this application for velocity.



3.2 BLUETOOTH MODULE

Bluetooth Serial Port Convention module which is basically intended for translucent remote correspondence. For interfacing with PC a chip is utilized which is appeared in figure 2. This assistance to take after all client direction precisely.

Figure 2

Microcontroller	ATmega2560
Operating Voltage	5V
Input Voltage (recommended)	7-12V
Input Voltage (limit)	6-20V
Digital I/O Pins	54 (of which 15 provide PWM output)
Analog Input Pins	16
DC Current per I/O Pin	20 mA
DC Current for 3.3V Pin	50 mA
Flash Memory	256 KB of which 8 KB used by bootloader
SRAM	8 KB
ROM	4 KB
ck Speed	16 MHz
_BUILTIN	13
Length	101.52 mm
Width	53.3 mm
Weight	37 g

4. CONCLUSION

Now the coding is uploaded and the Bluetooth module is connected to the android mobile. The robot is controlled by the android app downloaded from the Google play store.The system room remote can receive input signals transmitted from a maximum distance of 150 m without a hitch, and the robot can also follow the line with a steady Installation of the antenna on the transmitter and receiver circuits were required to increase the distance that can be achieved by a series of data delivery. The robot can walk straight with a maximum speed of 1.25 m /s.

DOI 10.17148/IJARCCE.2017.6344

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