

IOT Dune Buggy –Control It from Anywhere

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Abstract - In this paper we developed a robot which will be control over the internet. The IOT dune buggy is an attempt to controlling the locomotion of the robot over the internet. As an internet of things device, this robot can be controlled from anywhere on the globe with the help of internet.

The objective of this project is to reduce human efforts or time in their daily life. Because we can't present on same time at many place so we can use this robot will be control from anywhere through the internet.

Keywords: IOT, Cloud Computing, Robotics.

1. INTRODUCTION

The recent year have seen very wide interest and innovation in the IOT field. We do lots of work in the field of IOT and the IOT dune buggy was one of those. In this we can control locomotion of the robot from anywhere on the globe with the help of Internet.

In this we using the lightweight M2M cloud service, Dweet.io; this robot receives the commands from service and moves accordingly.

The user can design the android app for specially this robot and give the commands through designed app .it allows the user to make the robot moves in all four directions.

1.1 PROBLEM STATEMENT

We making the robot which can be control from anywhere in the globe through internet. And we make the robot which can reduced some human efforts in their daily life.

1.2 OBJECTIVE

The objective of this project is to reduce human efforts or time in their daily life. Because we cannot present on same time at many place so we can use this robot will be control from anywhere through the internet.

Purpose is to make the robot to reduce the human efforts and time in their daily life. We use this robot in their houses or shops. They will do surveillance in their houses and shops and they will used in the army also to do surveillance on the borders.

2. EXISTING SYSTEM

There is many technology will be used in the making of robot But in our case we used some cloud computing, IOT and some Robotics part and in technology Arduino plays a very important role in it.

Arduino

The Arduino is the open source microcontroller which is design to do a multiple work at a time and it is easy-to-use hardware and software. It's intended for artist and for the creative one they provided the platform on which they develop their skills. And in many ways it's very useful for anyone who was interested in it. Arduino can be very useful because the created our own area and in that area they can check and command was available or not by helping of controlling lights, motors, and other actuators. The microcontroller Arduino is the board which can be do the programming with the help of Arduino on the Arduino development programming and and the most commonly used the IDE which is very easy to use or very helpful to do a coding. Arduino projects can be stand-alone or they can communicate with software running on a computer. The boards can be built by hand or purchased reassembled; the software can be downloaded for free. The hardware reference designs are available under an open-source license, you are free to adapt them to your needs the availability of that software is very high and there are lots of person who developed the Arduino. Another technology will be wifi module.

Wifi module

The ESP8266 Wi-Fi module is a low cost module with full TCP/IP stack and microcontroller. It will mostly work with the Arduino when we talking about the project. And the wifi module was mostly manufactured in the Chinese based company and this export the module in the world.

Architecture

The common architecture of the robot which will control through internet.

SYSTEM ARCHITECTURE

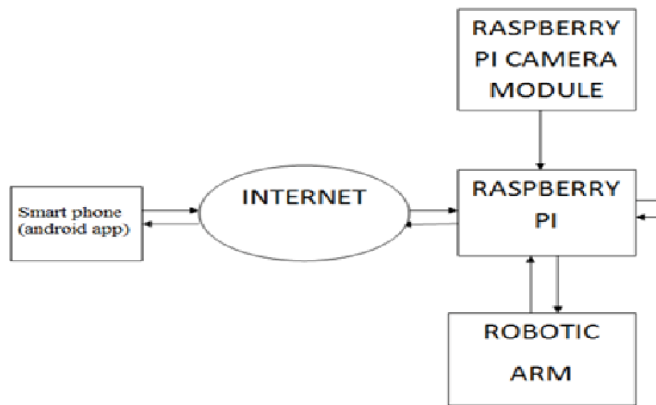


Fig-1: Architecture

Arduino IDE

The Arduino IDE software application which was written in Java, and it will be derived with the help of IDE for doing the process or compiling in the programming language the project. It is designed to introduce programming to artists and other newcomers unfamiliar and the unfamiliar means which never works before on this platform with software development. It includes with a code editor with many different features such as syntax highlighting, similar matching, and automatic detection, and is also capable of compiling and uploading programs to the board with a single click. There is typically and very difficult no need to edit make files or run programs on a command-line interface. Although building on command-line is possible if required with some third-party tools and other users such as Ino. The Arduino IDE comes with a C/C++ library that makes many common input/output operations much easier.

Cloud Computing

The most important technology is the cloud computing. Cloud computing is an information technology in which there is lots of computer can connect by the of internet means they connected over the internet. And when we transfer any file or data to other person then this process was completed by the help of cloud computing. And nowadays it was very trending we cannot transfer any data without help of cloud computing over internet. Cloud computing focus on sharing of resources to achieve economies of scale, similar to a public utility.

The working of the robot was very simple this was clearer when you see the diagram of working of robots. We will use the android studio to develop the application of robot Android Studio is the official integrated development environment (IDE) for Google's Android operating system, built on Jet Brains' IntelliJ IDEA software and designed specifically for Android development. It is available for download on Windows, macOS and Linux based operating systems. It is a replacement for the Eclipse Android

Development Tools (ADT) as primary IDE for native Android application development.

Android Studio

Android Studio was announced on May 16, 2013 at the Google in California USA. It was the platform on which we can develops the apps for mobiles and for iOS .It was very starting stage and it started from version 0.1 in May 2013, then entered beta stage starting from version 0.8 which was released in the end of June 2014. The first stable build was released in December 2014, starting from version 1.0. The current stable version is 3.0 released in October 2017. Now a day the Android studio was very trending. There lots of jobs in this field and this platform mainly work on the java programming language.

Working

This robo is basically used for the purpose of surveillance, when nobody is available at home or place then it would help to monitor the vision. When a command will pass to the server to Android app then robo activities starts like moving right and left. The wifi module will help to the robot to connect via internet. Without internet we can't access robot directly. The robo uses sensor and detect the data from environment and shows it on the display.

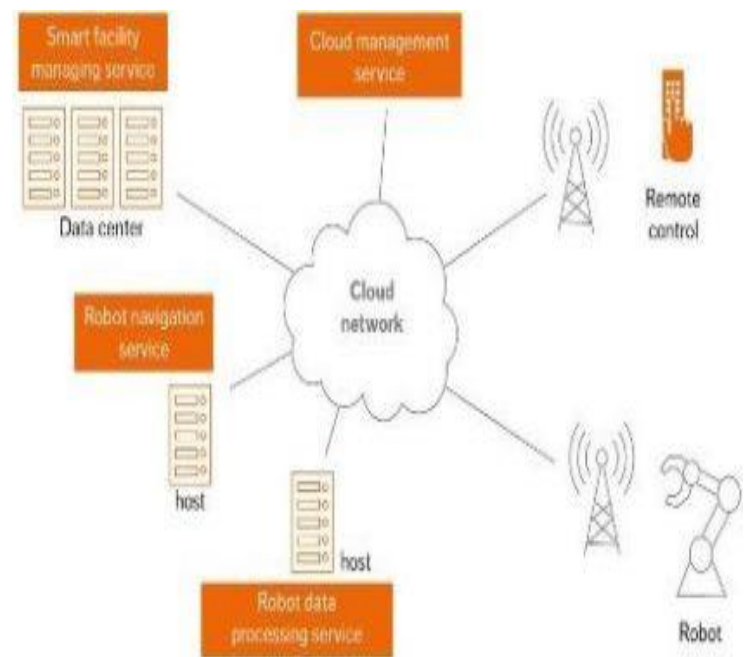


Fig -2: Working

3. PROPOSED SYSTEM

The robo car can be easily moved from one place to another just by a single device. Robo car can be used for security purpose with the installation of a camera. We can make the car do various task like moving an object from one place to another without applying any physical force.

Literature Survey

The open-source Arduino Software (IDE) makes it easy to Write code and upload it to the board. It runs on Windows, Mac OS X and Linux. The environment is written in Java And based on processing and other open-source software.

As an application neutral platform, it gives the opportunity to create applications that are as much a part of the phone as anything provided out of the box. We have the some feature which will be used for future.

Android features:

- No licensing, distribution, or development fees
- Wifi hardware access
- Comprehensive APIs for location based services such as GPS
- IPC message passing
- Shared data stores
- APIs for accelerometer and compass hardware
- AN integrated open sources web kit browsers

Using eclipse with the ADT plug in for Android development offers some significant advantages.

Eclipse is an open source IDE particularly popular for java development it's available to download for each of the development platforms supported by android (windows, mac OS and Linux).

There are lots of things we headlight which can be used in the future. We mainly used these robots in army for robot bomb or doing the surveillance at the border. But the issue only is the connectivity but nowadays internet is everywhere so we can use that in future definitely.

Future Scope and Expected Results

The future scope of the robot was very increases over year by year. We do the study about this and then we found the results and the result was in the graphical form.

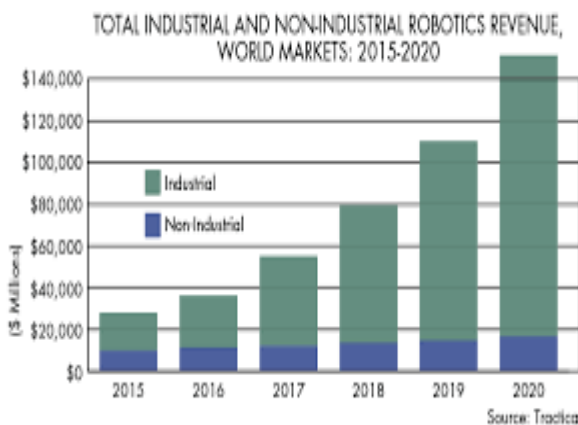


Fig -3: Total Industrial & Non-Industrial Robotics Revenue

3. CONCLUSIONS

Internet of things is a new technology which provides many applications to connect the things to things and human to things through the internet. The projects we present are using the open source software and the hardware. This robot was work on the real time control loop and more advanced is that it will take the commands through the internet. And we add some sensor in the robot according to our work. We add some like temperature sensor, heat sensor etc and we can use the robot in the wide range and control the robot from anywhere in the globe by the help of internet.

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