

# Iot Based Global Robot Using Blynk App

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## Abstract

This paper mainly targets about the managing of electrical appliances under the utilization of a android application with the help of Arduino Uno. The robots are in a position to work in different applications. The camera has ability to capture the objects and results in the assigned app. In between the wide range there is no loss of internet connection with the nodes. Behalf of wireless technology, the smart robot can be operated through an application in a android mobile phone. The implementation of the robot can be run with Arduino board, motor driver and Rasberri pi utilizing wireless technology. This type of IoT framework can be controlled and managed from anywhere in the world through appliances. The connection between mobile phone and Arduino UNO is wired connection. It has ability to work where humans cannot work and it is controlled everywhere from the world. This paper discusses about the various research works in operating IOT frameworks and robots.

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## 1. Introduction

The use of robots has globally increased in recent times. The use in military for monitoring helps to know the situation in the battle field. There are many types of robots being used in military applications. But there are certain limitations for them which has been failing in recent times. Bluetooth controlled robot were introduced in the battle field to monitor the things around. The area of communication is very limited with the Bluetooth module.

In this project, internet and wifi plays a crucial role. The control can be done from anywhere around the globe. The communication is reliable. There is no limited space communication in this project.

The micro controller play an important role in communication. It acts as the central monitoring system for the module. The UV and ultrasonic sensors are used to detect the obstacles in its path. The raspberri pi is used to monitor the surroundings through the camera. The communication is done through micro controller. The entire module is controlled with the help of blynk app. The data transformation is secured.

In 2016 the real action robot has been invented and used in the attack of Sept 11, as it is used in New York city. To detect the mine under the lands of earth it has been used by the US Military and also used in searching of buildings and caves for military people. Military commands identified the need of robot usage and has increased the count of robots which counts for almost 2800 and more over. It can be carried to any place as well as it can be used in the water and can be inserted in backpack. With an great update after at essential use it has been become popular to use.

## 2. Literature Survey

Piyush Vashistha ,et al[1] mainly talks about the utilizing of Raspberry Pi as a preparing chip and hidden engineering. It underlines the substitution of screen-based association by using encompassing advances, Mechanical technology and IoT. It involves segments, for instance, IR sensors, Pi camera Mic and Motor driver. It is a voice controlled individual associate whose developments will be controlled through voice bearings and it has the ability to scrutinize the substance

from pictures and afterward articulate the comparable to the customer by using the inbuilt speaker. It can help the ostensibly impaired to associate with the world by giving them the entrance to educational sources like Wikipedia, Mini-computer, etc by utilizing their voice as the order.

**Atanas Dimitrov,et al [2]** has explained about the working of ultrasonic sensors in finding the path. The use of ultrasonic sensor is cost efficient. The area of detection is limited upto 4 meters. It can be improved by the real time visualization. In this every part of the robot and sensor will be work accordingly to environment. The coordination of the sensor will identify the position of the robot. Ultrasonic Sensor Explorer (USE) is a modest portable robot for mapping. Rather than costly laser sensor, it utilizes modest ultrasonic sensor HC-SR04 with go up to 4 meters.. The Software comprises of two sections: firmware and application. The firmware part is an Arduino source code venture, written in C++ programming language, which is sent on the robot. The application part is Windows IoT source code, written in C# programming language, which can be run on PC, tablet, telephone or ARM gadget. The recommended robot has been tried in the college lab condition. The introduced idea demonstrates it has a potential for SLAM.

**K. Lova Raju,et al[3]** has explained about the essentially associating and checking different gadgets and sensors through Internet. This made ready for home computerization and observing which makes human life more agreeable and verified. The proposed model utilizes Node MCU board with web being remotely controlled by Android OS advanced mobile phone. Node MCU is the core of this framework and it can proceed as a miniaturized scale web server and it goes about as an interface for the wide scope of equipment modules. Another highlighting in this framework is the interruption recognition which is offered by this framework utilizing movement sensor. Every one of these exercises are constrained by utilizing Android portable Blynk app.

**Ayad Ghany Ismaeel,et al[4]** tells about the remote control frameworks, infrared (IR) gadgets, constrained in the edges of office/house, however not remote control robotized for electric/electronic gadgets from anyplace. This paper proposed an Web of Things (IoT) home robotized framework in two classifications, the equipment by means of a gadget named Worldwide Automobile and programming has been intended to robotize a most loved utilized gadgets, locally and anyplace (wide world) by means of a half and half versatile application will lessen the quantity of utilized controllers in the house by means of WiFi module ESP8266 in light of Arduino UNO. The usage of the proposed arrangement of home robotized was

accomplished in least cost (about 30\$) for office/house gadgets and with a deferral in the extend (0.4 - 1) s.

**R.Sindhuja,et al [5]** has explained about wireless sensor operated devices. Transmission of packets through wireless sensor networks is a difficult task in achieving efficiency. Limited area transmission of data is possible in WSN(Wireless Sensor Networks).End – to-end communication is reliable in WSN. Source privacy location is very difficult in WSN. We address the issue of forestalling the deduction of logical data in occasion driven remote sensor systems (WSNs). We devise a general traffic investigation strategy for surmising logical data by connecting transmission times with listening stealthily areas. To alleviate the effect of listening in, we propose resource efficient traffic standardization plans. In contrast with the cutting edge, our strategies decrease the correspondence overhead by over half; and the start to finish delay by over 30%. To do as such, we parcel the WSN to least associated commanding sets that work in a cooperative style.

**Shridevi Soma ,et al[6]**has explained about voice controlled wheel chairs. With the spending years, people are relying upon innovation all the more frequently for our help. The early models required manual exertion, however the later models incorporated the utilization of joysticks and catches to give a increasingly powerful method for administration. The proposed framework will guarantee that there is no requirement for some other human administrator. A voice-controlled wheelchair is created which will perform this activity by taking directions from the client for its development. The voice directions are given to an android application Text Search with the assistance of its Artificial Intelligence what's more, the wheelchair moves as per the given directions. The development of the wheelchair is controlled over a wifi network which is associated through different modules including the interfacing between android application and Raspberry Pi advancing the utilization of the IoT innovation.

**Dr. Antonio Carlos Bento,et al[7]** has explained about the outcomes in a test and relative research including the gadgets Node mcu 12e and Arduino UNO, concentrating for the most part on the positive and negative focuses displayed by the various gadgets when utilizing a WiFi organize. In the wake of getting the information to combine and arrange the quantitative and subjective results. In a contrast, the Arduino UNO gadget was exhibited with little limit and need to include new gadgets for correspondence by means of Wi Fi along with Nodemcu 12e, has nearly a similar market esteem also yet as of now the WiFi include inside, not with standing has more prominent limit and simplicity of use.

**HIRAL S. DOSHI,et al[8]** has explained about the advanced cells and now the web of things. We are presently in the time of web of things and in this period equipment stages like Arduino, Raspberry Pi, Orange

Pi, and so on and Cloud based administration like AWS (Amazon Web Services), Firebase, Blynk. make up the web of things become animated. Utilizing web of things has not just made innocent gadgets more astute yet in addition has decreased the human mediation while keeping the responsibility higher and keeping month to month bill under control. In this paper, we are going to actualize a straightforward yet compelling way to deal with fabricate the IoT stage for remote checking and detecting of information, home computerization, mechanical robot.

**Anuradha Iyer,et al[9]** has explained about utilizing of arduino UNO android applications. This venture targets controlling electrical apparatuses with the assistance of Arduino Uno utilizing an android application. This is predominantly planned remembering the focal points it will offer in the college. It will help decrease wastage of power in the college and the use towards covering the power tabs. The application which has been introduced on the advanced cell encourages us to remotely get to gadgets and in this way actualizremote innovation. The plan includes the utilization of Arduino Uno board and the apparatuses are associated utilizing jumper wires and a breadboard. The correspondence among telephone and Arduino Uno is remote. Additionally, confirmation token age will guarantee that solitary approved clients access or control the apparatuses in the college.

**Pooja Zaware ,et al[10]** has explained about wifi controlled bots. In this paper, the remote robot alludes to the small scale robot which live streams the monochromatic video, takes and stores the pictures. The bot is being controlled through a neighborhood Wi-Fi server by a perfect page. The goal of the proposed venture is to actualize the up to referenced innovation relating to the smaller than normal robot which is able to do playing out numerous errands at a moderate expense. Arduino Uno R3 Based Robot Control Board will be utilized to structure the robot . The framework will be structured in that capacity to stream the video live to the individual observing the bot.We have utilized two android telephones in our task with the end goal of video spilling and sound exchange. A whole new methodology for controlling the robot through Blynk has been utilized in this task. We have utilized NodeMcu ESP Module, to consolidate remote availability in the task.

**Amit Kumar ,et al[11]** tells about the speed control of Perpetual Magnet DC (PMDC) engine is finished utilizing Lab view interfaced with Arduino. The principle preferred position of utilizing Lab view with Arduino is the expense and basic in structure. The other speed control techniques like FPGA technique, fluffly control, utilizing 555 clock and PID controllers are having the disadvantage of entangled configuration included, inconsistent control, troublesome in the on the web observing with rapid engines. The reproduction

part is done in Proteus programming to approve the results. Diverse interfacing programming like LIFA and LINX is utilized to interface Lab VIEW and Arduino. The results demonstrate that the speed control of PMDC engine can be successfully finished with this arrangement. The speed control of servo engine and stepper engine should likewise be possible with the same module.

**S.S. Mohd Soban,et al[12]** has explained the utilization of various Infrared sensors to recreate a shape by distinguishing any adjustments in sensor removal when there is a hindrance put before the sensor. Then, the separation between IR sensors and the snag was set at 5 cm to limit the commotion contributed by the impression of the sensor during information assortment. A stepper engine was utilized in the test configuration to control the development of a deterrent which turns at 3600 for one complete cycle. Furthermore, Arduino Software was utilized as a smaller scale controller to control the exchanging method of the sensor and CoolTerm Software was utilized to store the sensor yield information in the content record design. For investigation, Matlab Software has been utilized to plot the chart of sensor esteem against the gathered information. IR sensors are skilled in estimating information up to 0.05 cm of goals in removal. Exploratory outcomes indicated that by utilizing IR sensors, it is conceivable to reproduce a shape through plotting the diagram for chamber, side of the equator and oval shape snags.

BLUETOOTH MODULE	INTERNET/WIFI MODULE
There are some area constraints for the communication.	The area of communication is universal
The operation frequency is very less(in range of Kohms)	The range of operation is at high frequency
Raspberry pi 0 version module is used for the vision camera monitoring	Raspberry pi 0W module is used for the camera vision monitoring
Normal microcontroller is used as the central monitoring unit.	NODEMCU is used for the monitoring of the module.
The is a delay in the transformation of data in Bluetooth module	No delay in the data transformation
Brute force alorogithm is used	Randomized algorithm is used for this module
No connection with the cloud	It is connected with the cloud

### Block Diagram

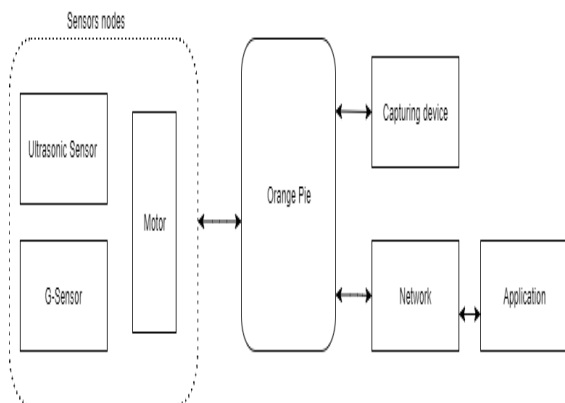


Figure 1: Architecture diagram

In this architecture diagram explains the work flow of robot using IOT. Various sensor nodes are used to execute the connection between all connections. Some of them are mentioned below here are Ultrasonic Sensor, G-Sensor, Motor etc. In sensor we need to observe strength of device and which sends information from Node to controller. From this node, video streaming can be obtained and it send through the internet of things to android device by observing the utilization of android application. It can be viewed by various moments in video format and can be operable.

### 3. Conclusion

Thus the internet/wife module is better than the bluetooth module. Many projects failed to provide reliable communication. In this project the communication is reliable it can be made with affordable amount. In this project, visual images of the field can be monitored through the mobile phone. The robot is used in military and it can be controlled from any place around the globe, we can use this to intrude in opposite army camp and monitor their actions. By using this bot, the soldiers' risk in crossing the borders could be avoided.

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