CONTRIVER®
Bengaluru

Department of Testing and Programming, Bengaluru

INTERNSHIP TRAINING REPORT

Submitted in partial fulfillment of the requirements for the certification of

30 days internship training program

SUBMITTED BY

PRAJWAL MS	**(1VE18EC070)**
YOGESH J	**(1VE18EC103)**
DIKSHITH SR	**(4BW17EC027)**
SANDEEP C	**(1AY18MT411)**
KAMAL KUMAR K	**(4BW17EC031)**

Under the Guidance of

Mr. Akash S and Mr. Vishnu Prasad JK

Bachelor of Electronics Engineering

Department of Testing and Programming, Bengaluru

M/S CONTRIVER®
#127/1, Chamalapura Street, Nanjangud,
Mysore 571301,
Karnataka, India
2021

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#127/1, Chamalapura Street, Nanjangud, Mysore 571301.

Department of Testing and Programming, Bengaluru

TRARING CERTIFICATE

*This is to certify that **Sri. PRAJWAL M S (1VE18EC070).** bonafide student of **Sri Venkateshwara College of Engineering** in partial fulfillment for the award of "**Training Certificate**" in **Department of testing and programming** of the **CONTRIVER, Bengaluru** during the year 2021. It is certified that he as undergone internship during the time period from 01/03/2021 to 19/03/2021 of all working days corrections/suggestions indicated for internal validation have been incorporated in the report deposited to the guide and trainer. The training report has been approved as it satisfies the organizational requirements in respect of Internship training prescribed for the said qualification.*

Shri. AKASH S Bachelor of Electronics engineering. Trainer of T&P	**Mr. VISHNU PRASAD J K** B.E. Trainer of T&P, Guide	**Shri. SANJAY B** DMT, B.E. Sr. Production Head and Chief Executive Officer

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Department of Testing and Programming, Bengaluru

TRAINING CERTIFICATE

*This is to certify that **Sri. YOGESH J(1VE18EC103).** bonafide students of **Sri Venkateshwara College of Engineering** in partial fulfillment for the award of "**Training Certificate**" in **Department of testing and programming** of the **CONTRIVER, Bengaluru** during the year 2021. It is certified that he as undergone internship during the time period from 01/03/2021 to 19/03/2021 of all working days corrections/suggestions indicated for internal validation have been incorporated in the report deposited to the guide and trainer. The training report has been approved as it satisfies the organizational requirements in respect of Internship training prescribed for the said qualification.*

Shri. AKASH S **Bachelor of Electronics engineering.** **Trainer of T&D**	**Mr. VISHNU PRASAD J K** **B.E.** **Trainer of T&D,** **Guide**	**Shri. SANJAY B** **DMT, B.E.** **Sr. Production Head and Chief** **Executive Officer**

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Department of Testing and Programming,Bengaluru

TRAINING CERTIFICATE

*This is to certify that **Sri. DIKSHITH SR (4BW17EC027).** bonafide students of **BGS Institute of technology** in partial fulfillment for the award of "**Training Certificate**" in **Department of testing and programming** of the **CONTRIVER, Bengaluru** during the year* 2021. *It is certified that he as undergone internship during the time period from 01/03/2021 to 19/03/2021 of all working days corrections/suggestions indicated for internal validation have been incorporated in the report deposited to the guide and trainer. The training report has been approved as it satisfies the organizational requirements in respect of Internship training prescribed for the said qualification.*

Shri. AKASH S	**Mr. VISHNU PRASAD J K**	**Shri. SANJAY B**
Bachelor of Electronics engineering.	**B.E.**	**DMT, B.E.**
Trainer of T&D	**Trainer of T&D,**	**Sr. Production Head and Chief**
	Guide	**Executive Officer**

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Department of Testing and Programming,Bengaluru

TRAINING CERTIFICATE

*This is to certify that **Sri. SANDEEP C(1AY18MT411).** bonafide students of **ACHARAYA Institute of Technology** in partial fulfillment for the award of "**Training Certificate**" in **Department of testing and programming** of the **CONTRIVER, Bengaluru** during the year 2021. It is certified that he as undergone internship during the time period from 01/03/2021 to 19/03/2021 of all working days corrections/suggestions indicated for internal validation have been incorporated in the report deposited to the guide and trainer. The training report has been approved as it satisfies the organizational requirements in respect of Internship training prescribed for the said qualification.*

Shri. AKASH S	**Mr. VISHNU PRASAD J K**	**Shri. SANJAY B**
Bachelor of Electronics engineering.	**B.E.**	**DMT, B.E.**
Trainer of T&D	**Trainer of T&D,**	**Sr. Production Head and**
	Guide	**Chief Executive Officer**

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Department of Testing and Programming,Bengaluru

TRAINING CERTIFICATE

This is to certify that **Sri. KAMAL KUMAR K (4BW17EC031).** *bonafide students of* **BGS Institute of technology** *in partial fulfillment for the award of "Training Certificate"in* **Department of testing and programming** *of the* **CONTRIVER, Bengaluru** *during the year* 2021. *It is certified that he as undergone internship during the time period from 01/03/2021 to 19/03/2021 of all working days corrections/suggestions indicated for internal validation have been incorporated in the report deposited to the guide and trainer. The training report has been approved as it satisfies the organizational requirements in respect of Internship training prescribed for the said qualification.*

Shri. AKASH S
Bachelor of Electronics engineering.
Trainer of T&D

Mr. VISHNU PRASAD J K
B.E.
Trainer of T&D,
Guide

Shri. SANJAY B
DMT, B.E.
Sr. Production Head and Chief
Executive Officer

ACKNOWLEDGEMENT

It is our privilege to express gratitude to all those inspired us and guided to complete the internship-training program. This work has remained incomplete without the direct and indirect help of many people who have guided us in the success of this internship. We are grateful to them.

Date: 12/04/2021   **PRAJWAL MS,**
                                                                                     YOGESH J,
Place: Bengaluru   **DEEKSITH S R,**
                                                                                     SANDEEP C,
                                                                                      KAMAL KUMAR K

RESUME

PRAJWAL M S
ELECTRONIC AND COMMUNICATION ENGINEER

CONTACT INFORMATION

ADDRESS:
#3553/H27 1ST FLOOR
M VENKATESH BUILDING,
7TH CROSS GAYATHRINAGAR
BANGALORE-560021

EMAIL ID: gowdaprajwal009@gmail.com
CONTACT NO: 7483833037

OBJECTIVE

Dedicated and experienced accounting professional with proven success managing finances for mid-size commercial organization. Seeking an opportunity to use my decade of experience to serve the state government.

ACADEMIC INFORMATION

EDUCATION QUALIFICATIONS:

COURSE/EXAM	INSTITUTION	YEAR OF PASSING	MARKS OBTAINED IN %
S.S.L.C	*Sri Vani High School, Bangalore*	*2016*	*91.04*
PUC (PCMB)	*Alvas PU Collage, Moodbidri*	*2018*	*69.24*
B.E IN ELECTRONIC AND COMMUNICATION ENGINEERING	*Sri Venkateshwara collage of engineering, Bangalore*	*Pursuing*	*-*

TRAINING/ INTERNSHIP

INTERNSHIP	*Contriver (IOT), IC Solution (Web development), Leantech labs (Web development)*

COMPUTER SKILLS

- Packages   :   MS Office, MS powerpoint, MS excel
- Engineering Tools   : HTML, CSS, JavaScript, C programming

EXPERIENCE

- Three Month as a Frontend developer at Leantech Labs

PROJECT DETAILS

ENGINEERING PROJECT:

1. **Car Price Prediction using Machine Learning**
   Abstract: To predict the Price of different automobile based on the given data set. Using this data set we have to train a Machine Learning model to find efficiency and price of the car.

2. **Web Page Design**
   Abstract: To design a Web Page of Restaurant, School, etc using a frontend development.

3. **Automatic Door open and close System**
   Abstract: To make a Life easy and make a smart door by controlling the Door automatically or by making use of Iot Devices.

PERSONAL STRENGTH

- Hardworking, dedicated, responsible, self confident.

PERSONAL PROFILE

Name	: Prajwal.M.S
Father's name	: Somashekar.G
DOB	: 23-02-2000
Marital Status	: Single
Nationality	: Indian
Languages Known	: English, Kannada.
Personal address	: #3553/H27 1st floor, M Venkatesh building, 7th cross, gayathrinagar, Bangalore-560021

DECLARATION

I hereby declare that all the information's are correct and true to the best of my knowledge and belief.

DATE: Yours Sincerely,

Place: Bangalore   (PRAJWAL MS)

RESUME

YOGESH J
ELECTRONIC AND COMMUNICATION ENGINEER

CONTACT INFORMATION

ADDRESS:
#103 2nd cross cp layout
Devinagar Bangalore-560094

EMAIL ID: mallempatiyogesh00@gmail.com
CONTACT NO: 9741257708

OBJECTIVE

Dedicated and experienced accounting professional with proven success managing finances for mid-size commercial organization. Seeking an opportunity to use my decade of experience to serve the state government.

ACADEMIC INFORMATION

EDUCATION QUALIFICATIONS:

COURSE/EXAM	INSTITUTION	YEAR OF PASSING	MARKS OBTAINED IN %
S.S.L.C	*Mother Teresa High School*	*2016*	*94.04*
PUC (PCME)	*Vidyamandir Ind PU college*	*2018*	*69.24*
B.E IN ELECTRONIC AND COMMUNICATION ENGINEERING	*Sri Venkateshwara collage of engineering, Bangalore*	*Pursuing*	-

TRAINING/ INTERNSHIP

INTERNSHIP	*Contriver (IOT))*

COMPUTER SKILLS

- Packages   :   MS Office, MS powerpoint, MS excel
- Engineering Tools   :   C programming

PROJECT DETAILS

ENGINEERING PROJECT:
1. **Automatic Door open and close System**
   Abstract: To make a Life easy and make a smart door by controlling the Door automatically or by making use of Iot Devices.

PERSONAL STRENGTH

- Hardworking, dedicated, responsible, self confident.

PERSONAL PROFILE

Name   : Yogesh J

Father's name   : Jayachandra Naidu M

DOB   : 21-12-2000

Marital Status   : Single

Nationality   : Indian

Languages Known   : English, Kannada,Telugu,Tamil

Personal address   : #103 2nd cross cp layout
                                      Devinagar Bangalore-560094

DECLARATION

I hereby declare that all the information's are correct and true to the best of my knowledge and belief.

DATE: Yours Sincerely,

Place: Bangalore   (YOGESH J)

<u>RESUME</u>

Dikshith S R
ELECTRONICS AND COMMUNICATION ENGINEER

CONTACT INFORMATION

<u>ADDRESS:</u>
282, Near RTO, 1st Block, 1st Stage
Peenya, Bengaluru-560058

EMAIL ID: dikshithshetty1515@gmail.com
CONTACT NO: 8147662981

OBJECTIVE

To be a part of your organization where I could implement and improve my technical knowledge and personal skills in the same to scale new heights for the company and myself.

ACADEMIC INFORMATION

<u>EDUCATION QUALIFICATIONS:</u>

COURSE/EXAM	INSTITUTION	YEAR OF PASSING	MARKS OBTAINED IN %
S.S.L.C	*Sri Vidya Kendra, Bengaluru*	*2015*	*92.14*
PUC (PCMB)	*Vidya Mandir IND PU College, Bengaluru*	*2017*	*72.14*
B.E IN ELECTRONICS AND COMMUNICATION ENGINEERING	*BGS Institute of Technology, Mandya*	*2021*	*64.55*

<u>TRAINING/ INTERNSHIP</u>

INTERNSHIP	*Bosch Limited(SENSORS)* *Contriver (IOT)*

COMPUTER SKILLS

- Packages   : MS Office, MS powerpoint, MS excel
- Engineering Tools   : C programming, IT and Project management, Soft skills

PROJECT DETAILS

ENGINEERING PROJECT:

1. **WI-FI Controlled**
   Abstract: Elderly and the physically challenged persons can move, by just selecting the direction with which they will be provided with. This will be a boon for many disabled people to operate the wheelchair on their own.

2. **Automatic Door open and close System**
   Abstract: To make a Life easy and make a smart door by controlling the Door automatically or by making use of IOT Devices.

PERSONAL STRENGTH

- Hardworking, Flexible, Honest, self-confident.

PERSONAL PROFILE

Name   : Dikshith S R

Father's name   : Ramashetty S B

DOB   : 15-04-1999

Marital Status   : Single

Nationality   : Indian

Languages Known   : English, Kannada, and Hindi.

Personal address   : 282, Near RTO, 1st Block, 1st Stage, Peenya,
                          Bengaluru-560058

DECLARATION

I hereby declare that all the information's are correct and true to the best of my knowledge and belief.

DATE: Yours Sincerely,

Place: Bangalore   (Dikshith S R)

RESUME

SANDEEP C
MECHATRONICS ENGINEER

CONTACT INFORMATION

ADDRESS:
9/1 3RD MAIN,
ATTIGUPPE, VIJAYNAGAR
BANGLORE- 560040

EMAIL ID: sandeepc.18.bemt@acharya.ac.in
CONTACT NO: 9686672014

OBJECTIVE

To work for organization and this opportunity provides me to improve my skillsand knowledge to growth along with the organization objective.

ACADEMIC INFORMATION

EDUCATION QUALIFICATIONS:

COURSE/EXAM	INSTITUTION	YEAR OF PASSING	MARKS OBTAINED IN %
S.S.L.C	*Moraraji Desai Residential School*	*2014*	*74.24*
DIPLOMA IN MECHATRONICS (3+1)	*GOVT .Tool Room and Training Centre*	*2018*	*82.00*
B.E IN MECHATRONICS ENGINEERING	*Acharya institute of technology, Banglore*	*Pursuing*	*7.3/10 (SGPA)*

WORKSHOP/ INTERNSHIP

INTERNSHIP	*Contriver (IOT)), Introduction to IOT and its applications using Arduino, Node MCU ESP 8266, Blynk app etc…*
WORKSHOP	*MICROSOFT TRAINING on Robotics with raspberry Pi3 using python.*

COMPUTER SKILLS

- ➢ Packages   : MS Office, MS powerpoint, MS excel
- ➢ Engineering Tools   : Solid Edge, Embedded C Programming, PLC, NI Labview

IN-PLANT EXPERIENCE

- ➢ One year in-plant trainee in Ducom instruments private limited.

     Company profile: Ducom Instruments has led the way in designing and manufacturing advanced materials testing instruments with a specialization in tribology.
- ➢ Having knowledge about the assembly of mechanical, electrical and electronics components.
- ➢ Good experience in Hand soldering, using lab equipment's like Multimeter, power supply.
- ➢ Having knowledge about the Bare PCB board testing, assembly, testing of fully assembled PCB, Troubleshooting.
- ➢ Having knowledge about sensors and troubleshooting.
- ➢ Having knowledge about sensors integration, calibration and testing.
- ➢ Basic analyzing skill of electrical and electronics circuits & drawings with good practical knowledge.
- ➢ Having knowledge about hydraulics & Pneumatics.
- ➢ Capable to work in a team.

PROJECT DETAILS

ENGINEERING PROJECT:

1. **Hybrid electricity generation on highways**
    Abstract: In this project work Vertical axis wind turbines (VAWT), are designed to be placed on the medians therefore fluid flow from both sides of the highway will be considered in the design. Using all of the collected data, existing streetlights on the medians can be fitted with these wind turbines. The design of the turbines consists of blades, collars, a shaft, gears and a generator. Additionally, since the wind source will fluctuate, a storage system for the power generated was designed to distribute and maintain a constant source of power. Solar energy begins with sun. Solar panels also known as photovoltaics are used to power electrical loads. Light from the sun is renewable energy resources that provide clean energy, produced by solar panels.

PERSONAL STRENGTH

- ➢ Hardworking, dedicated, responsible, self confident.

PERSONAL PROFILE

Name   : Sandeep C

Father's name   : Chikka Ashwathappa

DOB   : 10-01-1999

Marital Status   : Single

Nationality	: Indian
Languages Known	: English, Kannada, Telugu
Personal address	: Iragappanahalli (V), Sadali (P), Shidlaghatta (Tq),Chikkaballapur (D)
	Pincode - 562104

DECLARATION

I hereby declare that all the information's are correct and true to the best of my knowledge and belief.

DATE: Yours Sincerely,

Place: Bangalore   (SANDEEP C)

RESUME

KAMAL KUMAR K
ELECTRONICS AND COMMUNICATION ENGINEERING

CONTACT INFORMATION

ADDRESS:
KAMAL KUMAR K S/O KUMAR B
PATTASOMANAHALLI (*)
PANDAVAPURA THALUK
MANDYA DISTRICT
571434

EMAIL ID : kamalkumark9090@gmail.com
CONTACT NO : 7483833037

OBJECTIVE

Looking for a challenging role in a reputable organization to utilize my technical, management skills for the growth of the organization as well as to enhance my knowledge about new and emerging trends in the IT Sector.

ACADEMIC INFORMATION

EDUCATION QUALIFICATION:

COURSE/EXAM	INSTITUTION	YEAR OF PASSING	MARKS OBTAINED IN %
S.S.L.C	*BGS High School Pandavapura*	*2015*	*90.00*
PUC (PCMB)	*BGS Science PU College Pandavapura*	*2017*	*86.00*
B.E IN ELECTRONIC AND COMMUNICATION ENGINEERING	*BGS Institute of Technology BG Nagar*	*2021*	*70.00*

TRAINING/ INTERNSHIP

INTERNSHIP	*Perceiving a One-month Internship program on "INTERNET OF THINGS", conducted by CONTRIVER, from 1st March 2021 to 18th March 2021*

TECHNICAL SKILLS

- **Programming Language:** C, IOT, Basics of Python, Java, HTML, CSS.
- **Operating System**: Windows, Linux.

EXPERIENCE

- Two Month as a Graphic Designer at TEAM MARKETEER.

PROJECT DETAILS

- **Title: Prediction of Cardiac Diseases based on ECG analysis using Machine Learning**
  Description: The aim of this research is to use the historical medical data to predict CHD using Machine Learning (ML) technology.

- **Title: Determination of Soil Moisture Using IOT, Arduino Uno Sensor**
  Description: This project was mainly focused to Check the Soil Moisture using IOT, Arduino it was very helpful for Farmers to maintain a proper water Supply for Plants.

- **Title: Automatic Door open and close System**
  Description: To make a Life easy and make a smart door by controlling the Door automatically or by making use of IOT Devices.

PERSONAL STRENGTH

- Teamwork and collaboration, Decision making, Leadership, Active listening and Effective Communication.

PERSONAL PROFILE

Name	: Kamal Kumar K
Father Name	: Kumar B
DOB	: 10-01-2000
Marital Status	: Single
Nationality	: Indian
Languages Known	: English, Kannada, Tamil.

DECLARATION

I hereby declared that the above details are true to the best of myknowledge.

Place   : Pandavapur   [KAMAL KUMAR K]

TAKE AWAY TOPICS FROM GUEST LECTURER

- Introduction to IOT, Working Principle, Architecture and Application of the IOT.
- Introduction to Embedded System, Working Principle of the Embedded System and Embedded Development life cycle.
- Introduction to Sensors, Type of Sensors and their Working Principle, Architecture and Application.
- Hands-on and simulation session on Arduino Uno and Temperature sensor using Arduino and Proteous software.
- Introduction to Nodemcu, Features of Nodemcu and Communication Protocol in Embedded System.
- Hands-on session on MIT App inventor.
- Hands-on and simulation session on Node Mcu and some sensors using Arduino, Blynk, Think speak, UBIDOTS.
- Session on Industrial Significance of IOT.

INTRODUCTION TO IOT-

The Internet of Things (IoT) is a system of interrelated computing devices, mechanical and digital machines, objects, animals or people that are provided with unique identifiers and the ability to transfer data over a network without requiring human-to-human or human-to- computer interaction. The Internet of Things is actually a pretty simple concept, it means taking all the physical places and things in the world and connecting them to the internet.

When something is connected to the internet ,that means that it can send information or receive information, or both. This ability to send and/or receive information makes things "smart."

To be smart, a thing doesn't need to have super storage or a super computer inside of it - it just needs access to it. All a thing has to do is *connect* to super storage or to a super computer. In the Internet of Things, all the things that are being connected to the internet can be put into three categories:

- Things that collect information and then send it
- Things that receive information and then act on it.
- Things that do both.

SENSORS-

Temperature sensor: Temperature Sensors measure the amount of heat energy or even coldness that is generated by an object or system, allowing us to "sense" or detect any physical change to that temperature producing either an analogue or digital output. A temperature sensor consists of two basic physical types: Contact Temperature Sensor & Non-contact Temperature Sensor.

Proximate sensor: A proximity sensor is a non-contact sensor that detects the presence of an object (often referred to as the "target") when the target enters the sensor's field. Depending on the type of proximity sensor, sound, light, infrared radiation (IR), or electromagnetic fields may be utilized by the sensor to detect a target. Proximity sensors are used in phones, recycling plants, self-driving cars, anti-aircraft systems, and assembly lines. There are many types of proximity sensors, and they each sense targets in distinct ways.

IR Sensor: An either emitting or detecting infrared radiation. It is also capable of measuring the heat being emitted by the objects. They are now used in a variety of IoT projects, especially in Healthcare as they make monitoring of blood flow and blood pressure simple. They are even used in a wide array of regular smart devices such as smartwatches and smartphones as well. Other common use includes home appliances & remote control, breath analysis, infrared vision.

Ultrasonic Sensor: An ultrasonic sensor is an instrument that measures the distance to an object using ultrasonic sound waves. An ultrasonic sensor uses a transducer to send and receive ultrasonic pulses that relay back information about an object's proximity. High- frequency sound waves reflect from boundaries to produce distinct echo patterns.

PIR Motion Sensor: PIR sensors allow you to sense motion, almost always used to detect whether a human has moved in or out of the sensors range. They are small, inexpensive, low-power, easy to use and don't wear out. For that reason they are commonly found in appliances and gadgets used in homes or businesses. They are often referred to as PIR, "Passive Infrared", "Pyroelectric", or "IR motion" sensors.

DHT11 Sensor: DHT11 is a low-cost digital sensor for sensing temperature and humidity. This sensor can be easily interfaced with any micro-controller such as Arduino, Raspberry Pi etc… to measure humidity and temperature instantaneously. DHT11 humidity and temperature sensor is available as a sensor and as a module. This sensor is used in various applications such as measuring humidity and temperature values in heating, ventilation and air conditioning systems.

Moisture sensor: Soil moisture sensors measure the volumetric water content in soil. Since the direct gravimetric measurement of free soil moisture requires removing, drying, and weighing of a sample, soil moisture sensors measure the volumetric water content indirectly by using some other property of the soil, such as electrical resistance, dielectric constant, or interaction with neutrons, as a proxy for the moisture content.

MIT INVENTOR APP-

App Inventor lets us to develop applications for Android phones using a web browser and either a connected phone or an on-screen phone emulator. The MIT App Inventor servers store our work and help us to keep track of our projects.

We build apps by working with:

• The App Inventor Designer, where we select the components for our app.

• The App Inventor Blocks Editor, where we assemble program blocks that specify how the components should behave. We assemble programs visually, fitting pieces together like pieces of a puzzle.

Our app appears on the phone step-by-step as we add pieces to it, so we can test our work as we build. If we don't have an Android phone, we can build our apps using the Android emulator, software that runs on our computer and behaves just like the phone. The App Inventor development environment is supported for Mac OS X, GNU/Linux, and Windows operating systems, and several popular Android phone models. Applications created with App Inventor can be installed on any Android phone. Before the use of App Inventor, we need to set up our computer and install the App Inventor Setup package on our computer.

We can build many different types of apps with App Inventor. To use App Inventor, we do not need to be a professional developer. This is because instead of writing code, we visually design the way the app looks and use blocks to specify the app's behavior. The App Inventor team has created blocks for just about everything we can do with an Android phone, as well as blocks for doing "programming-like" stuff-- blocks to store information, blocks for repeating actions, and blocks to perform actions under certain conditions.

BLYNK-

Blynk was designed for the Internet of Things. It can control hardware remotely, it can display sensor data, it can store data, visualize it and do many other cool things. There are three major components in the platform. Blynk Server - responsible for all the communications between the smartphone and hardware.

There are three major components in the platform:

- **Blynk App** - allows to you create amazing interfaces for your projects using various widgets we provide.
- **Blynk Serv**er - responsible for all the communications between the Smartphone and hardware. It's open-source, could easily handle thousands of devices and can even be launched on a Raspberry Pi.
- **Blynk Libraries** - for all the popular hardware platforms - enable communication with the server and process all the incoming and out coming commands.
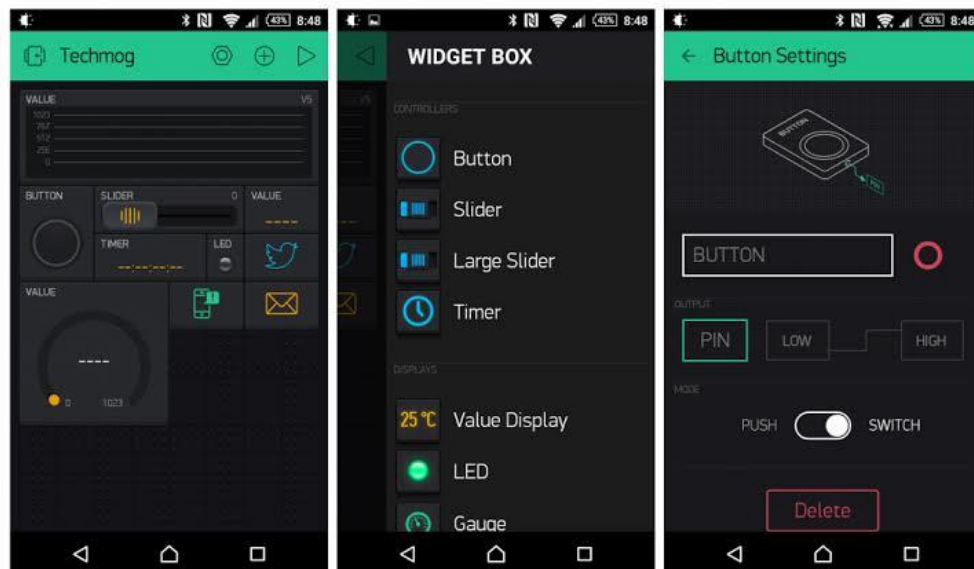
Think Speak-

ThingSpeak is an IoT analytics platform service that allows you to aggregate, visualize and analyze live data streams in the cloud. ThingSpeak provides instant visualizations of data posted by your devices to ThingSpeak. With the ability to execute MATLAB code in ThingSpeak you can perform online analysis and processing of the data as it comes in. ThingSpeak is often used for prototyping and proof of concept IoT systems that require analytics.

ThingSpeak Key Features

ThingSpeak allows you to aggregate, visualize and analyse live data streams in the cloud. Some of the key capabilities of ThingSpeak include the ability to:

- Easily configure devices to send data to ThingSpeak using popular IoT protocols.
- Visualize your sensor data in real-time.
- Aggregate data on-demand from third-party sources.
- Use the power of MATLAB to make sense of your IoT data.
- Run your IoT analytics automatically based on schedules or events.
- Prototype and build IoT systems without setting up servers or developing web software.
- Automatically act on your data and communicate using third-party services like Twilio or Twitter.
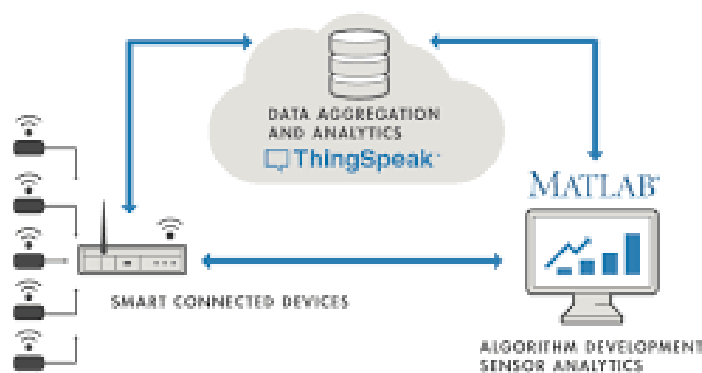
UBIDOTS-

Ubidots is an Internet of Things (IoT) data analytics and visualization company. We turn sensor data into information that matters for business-decisions, machine-to-machine interactions, educational research, and increase economization of global resources. Ubidots exists as an easy and affordable means to integrate the power of the IoT into your business or research.

Ubidots technology and engineering stack was developed to deliver a secure, white-glove experience for our users. Device friendly APIs (accessed over HTTP/MQTT/TCP/UDP protocols) provide a simple and secure connection for sending and retrieving data to and from our cloud service in real-time. Ubidots' time-series backend services are performance optimized for IoT data storage, computation, and retrieval. Our application enablement platform supports interactive, real-time data visualization (widgets), and an IoT App Builder that allows developers to extend the platform with their own HTML/JS code for private customization when desired. Ubidots exists to empower your data from device to visualization.

FEEDBACK/OPINOIN OF THE INTERSHIP

The IOT Internship Which was conducted by Contriver was very useful and it was very informative for me. This was a Offline internship were we learnt the concept and executed practically. It helped me in gaining the pratical knowledge in particular area with the conceptual understanding and helped me to build various IOT projects. I Thank Contriver and my mentor for giving this wonderful opportunity to persue the internship and yo gain knowledge.

Industrial Significance of the topic-

MIT APP INVENTOR:

- Android app development.
- Selection of machining parameters wit android applications.

Syllabus/Concepts that can be included/recommended in engineering curriculum (Academics):

- EMBEDDED SYSTEMS
- PYTHON BASICS

Area of improvements/Drawbacks in the internship program:

Could have added industry related topics. More focus must be given on how to write codes for different sensors and Hands-on session .

CONTENTS

LIST OF FIGURES

Chapter 1

1.1 INTRODUCTION

An Automatic Garage Door Opener System is a simple project based on PIR Sensor and Arduino Uno, which automatically opens and closes the door by detecting a person or object. You might have seen Automatic Door Opener Systems at shopping malls, cinemas, hospitals etc. where, as soon as a person approaches the door (at about 2 or 3 feet), the door automatically slides open. And after some time (about 5 to 10 seconds), the door closes by sliding in the reverse direction. Such Automatic Door Opener Systems are very useful as you do not need a person to standby the door and open it whenever a guest comes. Also, since the doors are opened and closed only when a person approaches the door, there is significantly less loss of air conditioning. So, in order to understand the potential of this concept, we have implemented a simple Automatic Door Opener System using Nodemcu and PIR Sensor.

1.2 STATEMENT OF THE PROBLEM

Automatic garage door open and close system

1.3 Objective of the project

To make the smart home and to use of technology, we make life easier by making automatic door opening and closing system using PIR sensor. Here PIR sensor sense the motion of the person or object and it automatically open or close the door. And for security purposes we can make use of a biometric, face recognition or we can make use of blynk app to operate the door

2. Literature Survey

Automatic door opening system is used throughout the world. They are used in many places such as shopping malls, public buildings, airports, hospitals, theatres, etc. These systems are used to open the door when a person comes near to the entrance of the door and close after entered into the door. The automatic door opening system consists of sensing process, main controller circuit and motor. The system block diagram of the automatic door opening system with entry counter for university library room. In this system, the entry door and exit door are made to automatically open.

The entry unit is outdoor equipped for the entry door while the exit unit is indoor equipped for the exit door. The PIR sensor senses the infrared energy produced by the human body from a considerable distance. This sensing signal is fed to a microcontroller to operate the door motor through motor driver. The entry unit is equipped at the entry door of library. If there is no further movement within the PIR operating range, the LCD shows welcome message. When a body approaches within the operating range of the sensor, it sends a logical command to open the door, the LCD show "Door Opened" and count the entry person. The counting result is shown on 7- segment display. And then the door automatically closes with a fixed time delay and the LCD show "Door Closed".

In the exit unit, the door is opened or closed by sensing PIR sensor. Real time format is shown on LCD according to RTC module. The quotes for library are also shown on LCD. The Arduino based automatic door opening system with entry counter for university library was designed and simulated. To program the microcontroller, Arduino IDE was used. Proteus Professional software was used to simulate the design. Presence of every module has been reasoned out and placed carefully, thus contributing to the best working of the system. In this way, the overall system has been successfully implemented.[1]

The project mainly aims in designing a completely automated security access system for domestic and industrial applications. Security is the bigger concern for an individual or a firm. Recognizing the need of security, we developed an automated security access system with user friendly access. This project makes use of DTMF technology to enter the password which makes very secure opening or closing of door. When the user enters the wrong password then the system automatically sends alerting SMS messages to the predefined authority number. This onboard computer consists of number of input and output ports. The onboard computer is commonly

The input and output port of the micro controller are interfaced with different input and output modules depending on the requirements. In other words micro controller acts as a communication medium for all the modules involved in the project.

The controlling device of the whole system is a PIC Microcontroller. DTMF decoder reader, Stepper motor, GSM modem, LCD display is interfaced to the Microcontroller. Whenever a call is made to the phone in the system, it will be answered automatically and password is entered through phone keypad. The DTMF decoder gets the password and feds as input to Microcontroller. The Microcontroller validates the password. If the password is valid it opens the door which is linked to the stepper motor interfaced to the Controller. The status of the door is displayed on the LCD display. When there is any wrong entry of the password the system alerts automatically in the form of SMS messages to the respective authorities. The Microcontroller used in the project is programmed using Embedded 'C' language. An embedded system is a combination of software and hardware to perform a dedicated task. Some of the main devices used in embedded products are Microprocessors and Microcontrollers. Microprocessors are commonly referred to as general purpose processors as they simply accept the inputs, process it and give the output. In contrast, a microcontroller not only accepts the data as inputs but also manipulates it, interfaces the data with various devices, controls the data and thus finally gives the result. The project "**Automatic Door Opening and Closing**" using PIC16F72 microcontroller is an exclusive project which is used to control door using mobile phone.[2]

Electric gates are an easy way to ensure the security of private premises (Rouse, 2016). The advancement of technology has increased the safety and security of people physically and emotionally. One of the reasons for the emergence of smart home is the in-creasing risk of burglary and busy lifestyle (Win et al., 2016). The busy lifestyle has influence the needs to remotely control and monitor their home. Internet of Things (Lee and Lee, 2015) solves this problem as ubiquitous devices such as smart phone, Internet TV, sensors and etc. are connected to the Internet combine together to form a communication between human and machine.

These days, the issues like keys that have been left behind and missing keys frequently happens in our daily lives (Jeong, 2016). In addition, the remote key can be also be duplicated. It is essential to strengthen the smart home system through administrative aspects. The smart home project by (Jeong, 2016; Mowad et al., 2014; Win et al., 2016) proposed an authentication

strengthen the security in home site. However, the alert is only notified to the buzzer or to the site only. For this project, we want to add the access control method on the server side to the smart home project. Chowdhury et al., (2013) and Sahani et al., (2015) proposed face recognition in home security system. Contrary to our study, the authentication is based on access control system.[3]

Automatic door opening systems using IR sensors plays a very important role in domestic applications. The elimination of manual supervision adds up as an additional advantage for its usage. Its significance can be proved by considering the following specialties of kit designed. An IR sensor measures the infrared levels radiating from objects in its field of view. The sensor used in this app note has a range of about six meters. IR sensors are able to sense motion, and are often used to detect whether a human has moved into or out of the sensor's range. They are small, inexpensive, low-power, easy to use, and resilient. They are commonly found in appliances and gadgets used in homes and businesses. They are often referred to as PIR, "Passive Infrared", "Pyroelectric", or "IR motion" sensors. All objects with a temperature above absolute zero emit HEAT in form of radiation that is invisible to human beings because it is in the infrared region. The hotter the object is the more infrared radiation is emitted. The passive term in passive infra-red sensor refers to the fact that PIR sensors don't generate or radiate any energy for detection purposes. They work by detecting energy given off by other objects. When a human passes in front of an IR sensor, it converts their body heat into an output voltage change and this triggers the detection. When an object is detected, the output pin of PIR sensor has a voltage level of 3.3v [4]

An Automatic Door Opener System is a simple project based on PIR Sensor and Arduino, which automatically opens and closes the door by detecting a person or object.You might have seen Automatic Door Opener Systems at shopping malls, cinemas, hospitals etc. where, as soon as a person approaches the door (at about 2 or 3 feet), the door automatically slides open. And after some time (about 5 to 10 seconds), the door closes by sliding in the reverse direction.

In the Automatic Door Opening System, the main component or hardware is the sensor which detects the persons (well, the motion of the person in our case). For this purpose, we will

be using the PIR Motion Detector Sensor. We have already seen in the Arduino PIR Sensor Tutorial about how a PIR Sensor Works and how to interface a PIR Sensor to an Arduino.[5]

REFERENCES

- Michael McRoberts, "Beginning Arduino", second edition,2016
- John Baichtal, "Arduino for Beginners" Daiki Nishida et.al., "Development of intelligent automatic door system", IEEE International Conference on Robotics and Automation (ICRA),2014
- J. Shankar Kartik, K. Ram Kumar and V.S. Srimadhavan, "SMS Alert and Embedded Network Video Monitoring Terminal", International Journal of Security, Privacy and Trust Management (IJSPTM), Volume 2, October 2013.
- INTERNET OF THINGS: USAGE AND APPLICATION (pp.57-70). Chapter: 4. Publisher: Penerbit Universiti Teknikal Malaysia Melaka.
- Motion Based Automatic Garage Door Opener Sk,Madarshareef .

3. METHODLOGY

Automatic door opening system is used throughout the world. They are used in many places such as shopping malls, public buildings, airports, hospitals, theatres, etc. These systems are used to open the door when a person comes near to the entrance of the door and close after entered into the door. The automatic door opening system consists of sensing process, main controller circuit and motor. The entry unit is outdoor equipped for the entry door while the exit unit is indoor equipped for the exit door. The PIR sensor senses the infrared energy produced by the human body from a considerable distance. This sensing signal is fed to a Arduino Uno to operate the door motor(DC motor) through motor driver. The entry unit is equipped at the entry door of library. If there is no further movement within the PIR operating range, the red led will glow which means gate is closed. When a body approaches within the operating range of the sensor, it sends a logical command to open the door, the green led will glow. In the exit unit, the door is opened or closed by sensing PIR sensor. Instead of LED if we use LCD screen we can print few messages such as,The entry unit is equipped at the entry door of library. If there is no further movement within the PIR operating range, the LCD shows welcome message. When a body approaches within the operating range of the sensor, it sends a logical command to open the door, the LCD show "Door Opened" and count the entry person. The counting result is shown on 7-segment display.\

And then the door automatically closes with a fixed time delay and the LCD show "Door Closed". In the exit unit, the door is opened or closed by sensing PIR sensor. Real time format is shown on LCD according to RTC module. The quotes for library is also shown on LCD. Here we are using Arduino Uno because it can be controlled by a mobile through blynk app. It is one of the major advantage of using Arduino Uno. Only a specific user or admin can be able to use the axis of the door.

4. DESIGN SPECIFICATION

4.1(a) Hardware Components Required:

- Arduino Uno
- PIR Sensor
- L298N Motor Driver Module
- CD Tray with 5V Motor OR Dc motor.
- Breadboard
- Connecting Wires
- Power Supply

4.1(b) Components description:

- **Arduino Uno**: Arduino Uno is an open-source microcontroller board based on the Microchip ATmega328P microcontroller and developed by Arduino.cc.

- **PIR Sensor**: Detecting motion is done with the help of PIR Sensor.

- **L298N Motor Driver Module**: Motor Driver is an important part of the project as it is responsible for driving the motor of the door (CD Tray Motor in this case). In this project, we have used the very common and very popular L298N Motor Driver Module.

Fig4.1:NODEMCU   **Fig 4.2:PIR Sensor**

Fig 4.3:Arduino Uno   **Fig 4.4:L298 MOTOR DRIVER**

4.2 CIRCUIT DESCRIPTION
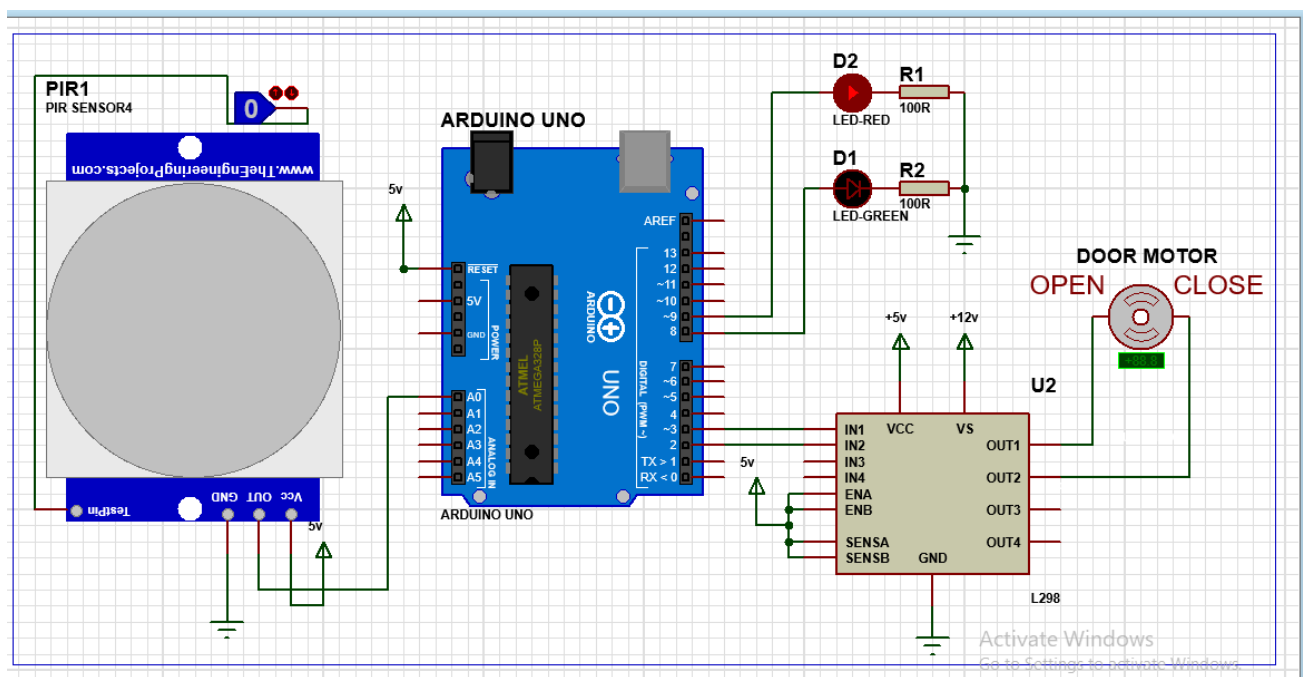
- **Circuit diagram:**

Fig 4.5: Circuit Diagram

4.3 Circuit Design:

First, the Data OUT of the PIR Sensor is connected to Digital Pin 8 of Arduino. The other two pins of PIR Sensor i.e. Vs and GND are connected to +5V and GND respectively. Coming to the Motor Driver, we have used the second channel of the L298N Motor Driver Module. Hence, the IN3 and IN4 of the L298N Motor Driver are connected to Digital Pins 2 and 3 of Arduino.

The Enable Pin of the Second Motor on the L298N Module us connected to +5V. Usually, all the L298N Modules consists of a jumper to directly connected the Enable pins to +5V. You can use this option. Since the motor used in the project is a 5V Motor, I've connected a 5V Supply to the Motor Driver Module.Finally, the Motor of the CD Tray is connected to the OUT3 and OUT4 of L298N Motor Driver Module
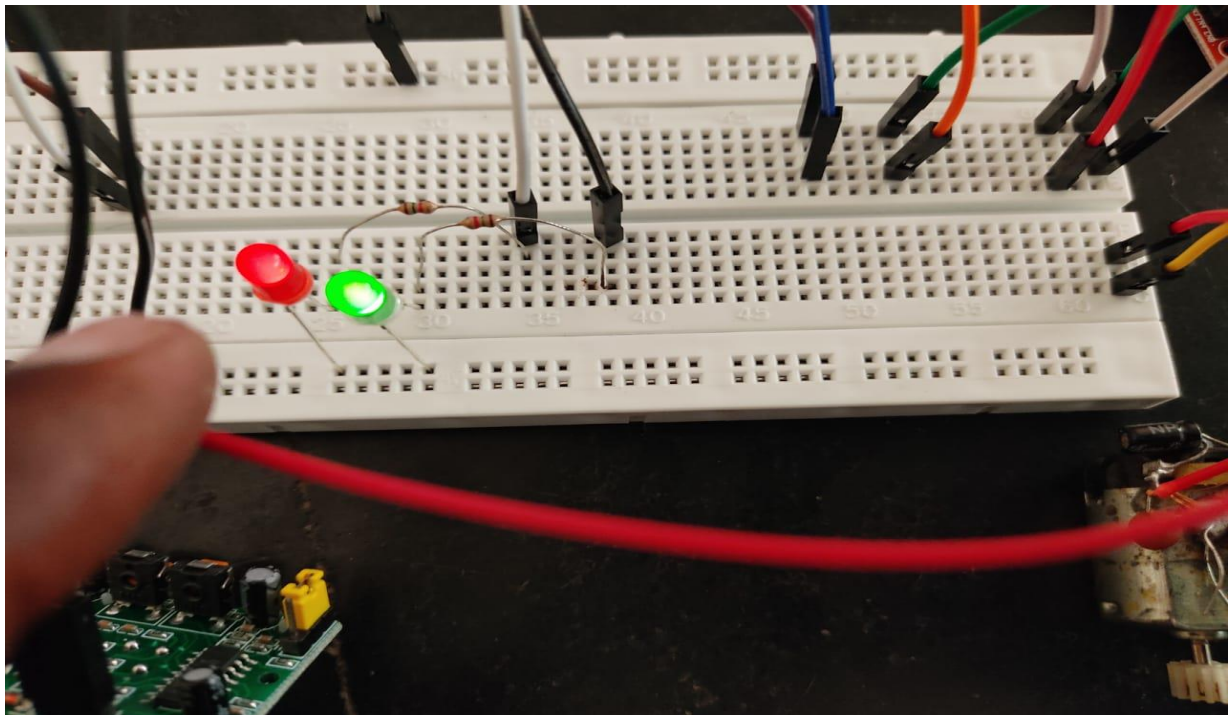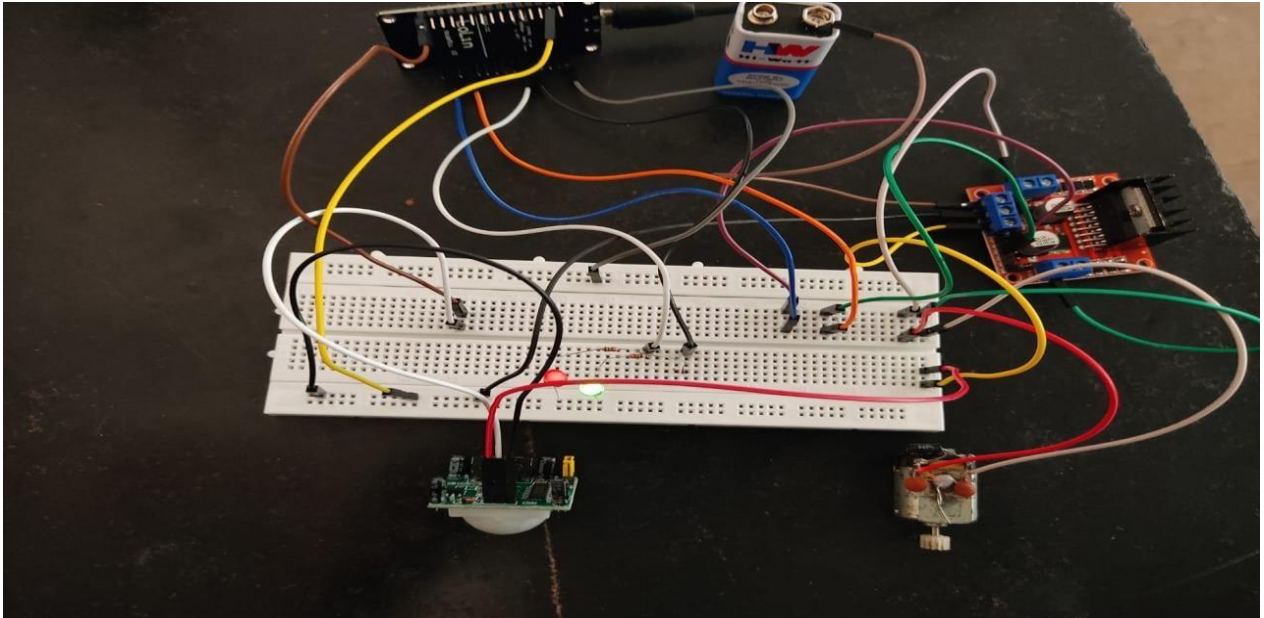
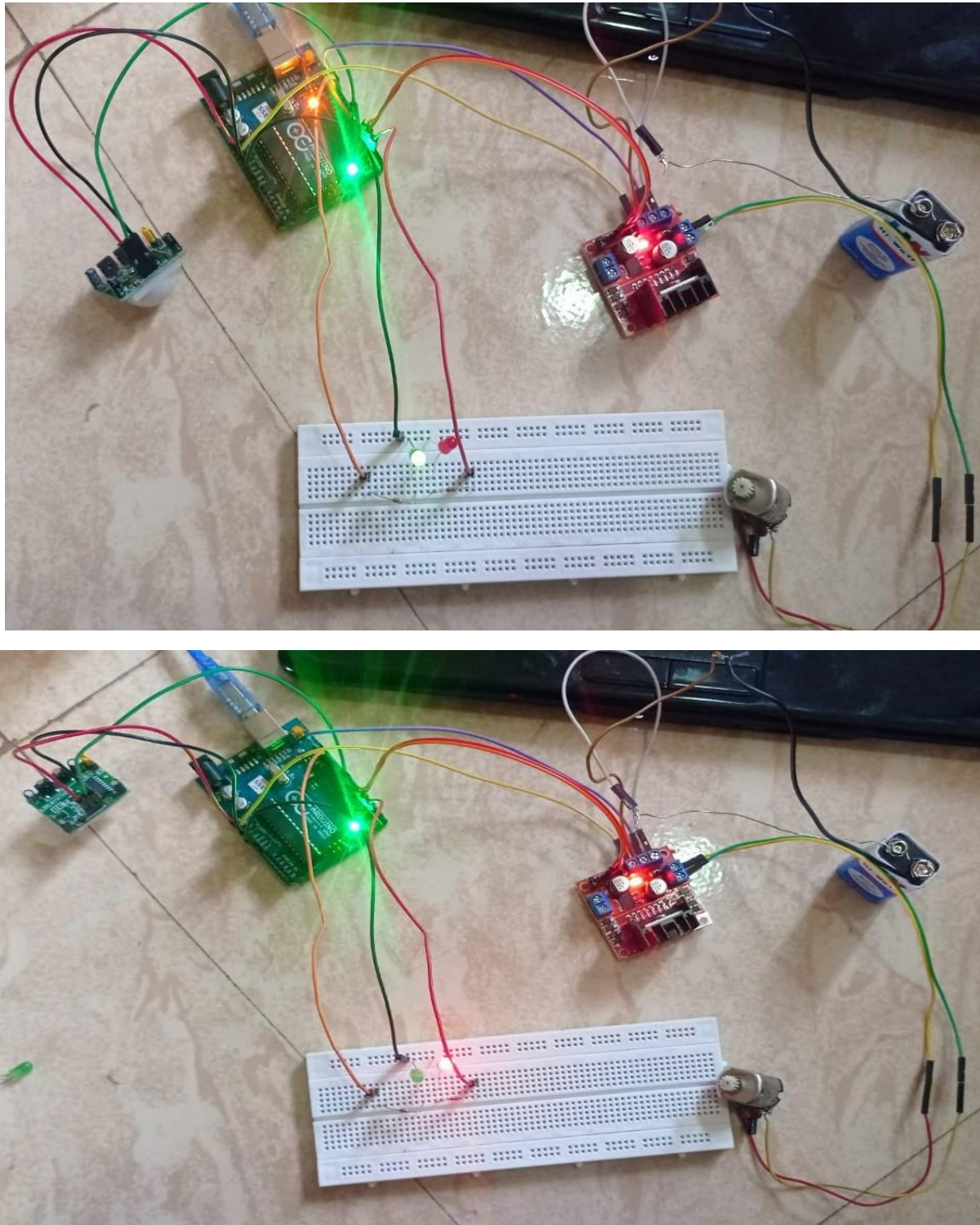## 5. TESTING AND PERFORMANCE

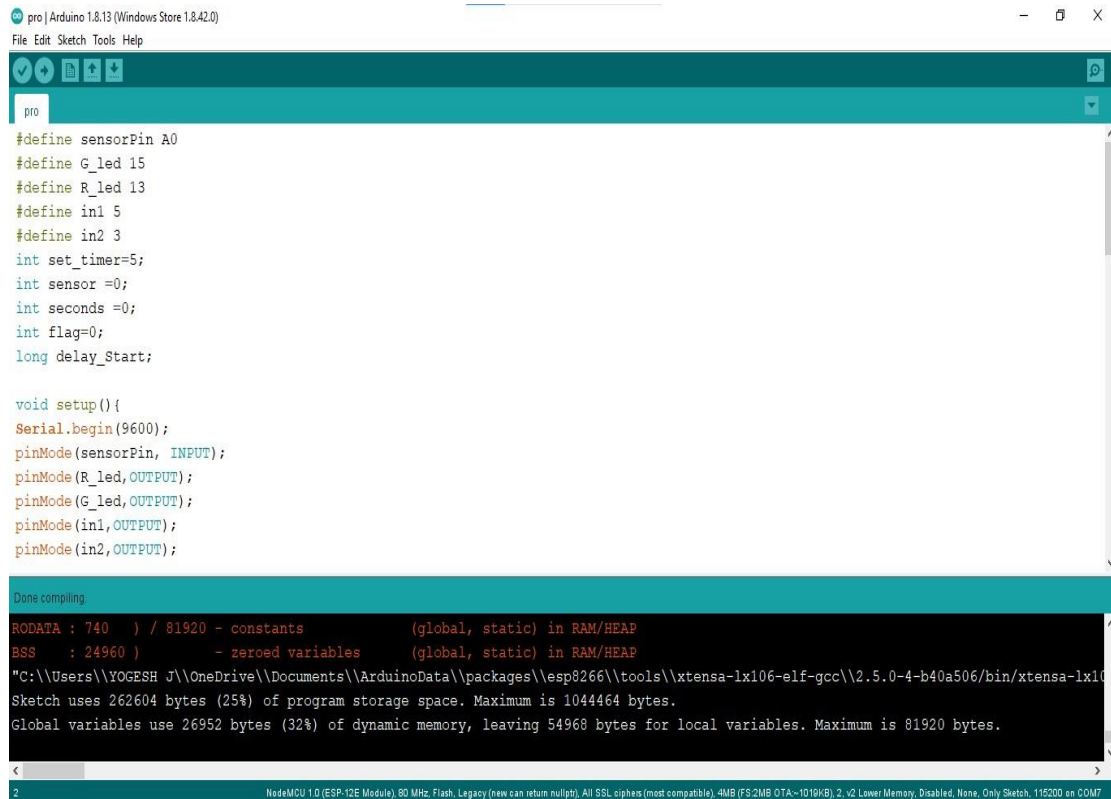**Fig 5.1:Working Model-1**

Fig 5.2:Working Model-2

Fig 5.3: Compilation of the code

6. CONCLUSION

The project "AUTOMATIC GARAGE DOOR OPENING AND CLOSING" was designed to automated security access system for domestic and industrial applications. The system makes use of a several components listed above initially. The output from PIR sensor is fed as input to the Nodemcu. The Nodemcu will continuously monitors the output from PIR sensor and generates logic low or high. The output generated from PIR sensor is used to control the DC motor. The system uses motion sensor for opening of the door. If the motion is detected then the door will be open.

CHAPTER 7

7.1 SCOPE FOR FUTURE WORK-

The Project can be extended by using the LED display to print the message or count of the people who entered or exit. Further by using the Node mcu we can link it to Blynk app to control manually only by the admin for the security purpose. It can be further strengthen by using the Biometric lock or Face recognition.

7.2 REFERENCE-

- Michael McRoberts, "Beginning Arduino", second edition,2016
- John Baichtal, "Arduino for Beginners" Daiki Nishida et.al., "Development of intelligent automatic door system", IEEE International Conference on Robotics and Automation (ICRA),2014
- J. Shankar Kartik, K. Ram Kumar and V.S. Srimadhavan, "SMS Alert and Embedded Network Video Monitoring Terminal", International Journal of Security, Privacy and Trust Management (IJSPTM), Volume 2, October 2013.

7.3 APPENDIX-

The Code for the Project is given below:

```
int a; // variable for sensor value storage
int pir=7; // pir sensor pin
int greenled=13; //green led pin
        int redled=2; //redledpin
int in1=3; // motordriver in1
int in2=4; // motordriver in2
void setup() {
pinMode(greenled,OUTPUT);
pinMode(redled,OUTPUT);
pinMode(in1,OUTPUT);
pinMode(in2,OUTPUT);
Serial.begin(9600); // initializing serial baudrate value
// put your setup code here, to run once:
}
void loop() {
a=digitalRead(pir); // reading the value from pir sensor
        Serial.println(a); // printing pir value 0 or 1
if(a==1) // comparing a (pir value) with 1
{
Serial.println("detected"); // pir status
digitalWrite(greenled,HIGH); // greenled output on
digitalWrite(redled,LOW); // redled output off
digitalWrite(in1,HIGH); // motor on forward
digitalWrite(in2,LOW);// motor off reverse direction
delay(2000); // delay
}
```

```
else
 {
Serial.println(" not detected"); // pir status
 digitalWrite(greenled,LOW); // greenled output on
  digitalWrite(redled,HIGH); // redled output off
 digitalWrite(in1,LOW); // motor on forward
   digitalWrite(in2,LOW);// motor off reverse direction

 delay(2000); // delay
 }
  // put your main code here, to run repeatedly:
 }
```