



<b>Department : Electronics and Communication Engineering</b>		
<b>Academic Year :2021-22</b>		
<b>Sr. No.</b>	<b>Programme Code</b>	<b>Name of the Programme</b>
01.	406-4116	B.Tech. (ECE)

Following students have carried out their Project work/ Internship/  
Field Project/Industrial Training for the academic session 2021-22

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01.	A Chandu Abhishek Kumar	4-6
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21.	Amit Mishra	16-18
22.	Anurag Kumar Dubey	16-18
23.	Jaya Venkata Sai Mamillapalli	19-21



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25.	Allu Hemantha Reddy	19-21
26.	Tangudu Sai Pavan	19-21
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29.	Cheepurupalli Bhaskar	22-24
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77.	Vaishnavi Roy	52-54
78.	Priyanka Kashyap	52-54

वर्धमानाध्यक्ष (इले. एव संचार अभियंत्रिकी)  
H.O.D. (Elect. & Comm. Engineering)  
प्रौद्योगिकी संस्थान  
Institute of Technology  
गु. घा. वि., बिलासपुर (छ.ग.)  
G. G. V. Bilaspur (C.G.)

Signature and Seal of the Head

A

Project Report

On

**SOCIAL DISTANCING INDICATOR**

Submitted in partial fulfilment of the requirement for the award of

**BACHELOR OF TECHNOLOGY**

in

**ELECTRONICS & COMMUNICATION ENGINEERING**

UNDER THE GUIDANCE OF

**Mr. Sudeep Kumar**

**Assistant professor**

**Submitted by:**

A Chandu Abhishek Kumar 19106601

Rompelli Sai Charan 19106651

T Mallu Naidu 19106663

Prudhvi Muni Rakesh 19106646

Burru Venkata Siddartha Yadav 19106615



**DEPARTMENT OF ELECTRONICS & COMMUNICATION  
ENGINEERING**

**SCHOOL OF STUDIES IN ENGINEERING & TECHNOLOGY**

**GURU GHASIDAS VISHWAVIDYALAYA**

**BILASPUR, INDIA**

**APRIL 2022**



## ABSTRACT

---

The rampant coronavirus disease 2019(COVID-19) has brought global crisis with its deadly spread almost all countries. The absence of any active therapeutic agents and therefore the lack of immunity against COVID-19 increases the vulnerability of the population. The virus is transmitted between people through direct, indirect, or close contact with infected people. To help prevent the social transmission of COVID-19, this paper presents a new smart social distance system that allows individuals to keep social distances between others in indoor and outdoor environments, avoiding exposure to COVID-19 and slowing its spread locally and across the country. Though prevention is better than cure, social distancing is the best and feasible approach to fight against this pandemic. One of the foremost important practices in these outbreaks is to make sure a secure distance between people publicly. This tool could assist the efforts of the governments to regulate the virus. This approach of social distancing will give an alarm when a person is closer than an allowable limit. This study is proposed to support the actions on Covid19 spread reduction. It provides answer for detecting people gathering publicly in places like banks, shopping malls. The concept of a person detection is employed to accurately detect a person's presence in areas of interest and is then followed by measuring the space between the persons. It is often implemented in closed areas or institutions, monitor the extent of peoples commitment, and supply analysis and a faster approach to detect possibly corona suspicion cases. The suggested portable device will always notify the person who is violating the norm of 1 m.

**Keywords:** Arduino UNO, Ultrasonic sensor, social distance, Corona virus





DEPARTMENT OF ELECTRONICS & COMMUNICATION  
ENGINEERING  
SCHOOL OF STUDIES IN ENGINEERING & TECHNOLOGY  
GURU GHASIDAS VISHWAVIDYALAYA  
BILASPUR (C.G)

CERTIFICATE

We hereby certify that the work which is being presented in the B.Tech. Minor Project Report entitled "SOCIAL DISTANCING INDICATOR", in partial fulfillment of the requirements for the award of the Bachelor of Technology in Electronics & Communication Engineering and submitted to the Department of Electronics & Communication Engineering, Institute of Technology, Guru Ghasidas Vishwavidyalaya, Bilaspur, Chhattisgarh, India is an authentic record of my own work carried out during a period from December 2021 to April 2022( 6<sup>th</sup> semester) under the supervision of Assistant Professor Sudeep Kumar, ECE Department.

The matter presented in this Project Report has not been submitted by me or by anyone else for the award of any other degree elsewhere.

Signature of Students

A Chandu Abhishek Kumar 19106601    Rompelli Sai Charan 19106651    T Mallu Naidu 19106663  
Prudhvi Muni Rakesh 19106646    Burru Siddartha Yadav 19106615

This is to certify that the above statement made by the students is correct to the best of my knowledge.

Signature of Supervisors

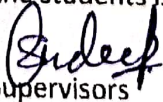
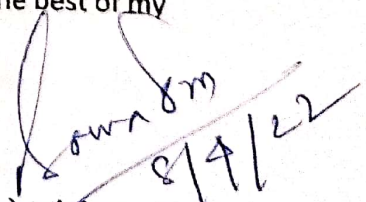
Sudeep Kumar

Assistant Professor

Date:

Head

Department of Electronics & Communication Engineering

  
  
विभागाध्यक्ष (इले. एवं संचार अभियंत्रिकी)  
H.O.D. (Elect. & Comm. Engineering)  
प्रौद्योगिकी संस्थान  
Institute of Technology  
गु. घा. वि., बिलासपुर (छ.ग.)  
G. G. V., Bilaspur (C.G.)  
8/4/22



**Mini Project on  
SPEECH RECOGNITION USING PYTHON**



*Department of Electronics & Communication Engineering  
School of Studies in engineering and Technology  
Guru Ghasidas Vishwavidyalaya, Bilaspur, C.G.*

**Under Supervision of**

Mr. SUDEEP KUMAR.

Mr. SHRAWAN KUMAR PATEL.

*Assistant Professor*

*Department of Electronics & Communication Engineering*

**Submitted By:**

SABIT RANJAN SAHOO

SYED MOHD AMAAN

## CERTIFICATE

This is to certify that this project entitled "SPEECH RECOGNITION USING PYTHON" is done by the following students under my direct supervision. This project work has been carried out by them in the laboratories of the Department of Electronics and Communication Engineering, School of Studies in Engineering and Technology, Guru Ghasidas Vishwavidyalaya in fulfilment of Mini Project as the curriculum of the program.

*Sudeep*

Signature of the Supervisor

Mr. Sudeep Kumar.

Assistant Professor, Dept. of ECE

Signature of the Supervisor

Mr. Shrawan Kumar Patel

Assistant Professor, Dept. of ECE

*Shrawan 8/4/22*

विभागाध्यक्ष (इले. एवं संचार अभियंत्रिकी)  
H.O.D. (Elect. & Comm. Engineering)  
प्रौद्योगिकी संस्थान  
Institute of Technology  
गु. घा. वि., बिलासपुर (छ.ग.) 2  
G. G. V., Bilaspur (C.G.)



## 2 ABSTRACT:

Speech recognition Technology is one of the fast growing engineering technologies. This project is designed and developed keeping that fact in mind, and a little effort is made to achieve this aim.

Speech Recognition (SR) is the ability to translate a dictation or spoken word to text. Speech Recognition known as "automatic speech recognition" (ASR), or speech to text (STT).

- 2.1 Speech recognition is the process of converting an acoustic signal, captured by a microphone or any peripherals, to a set of words.
- 2.2 To achieve speech understanding we can use linguistic processing.
- 2.3 The recognized words can be an end in themselves, as for applications such as commands & control data entry and document preparation.

In the society every one either human or animals wish to interact with each other and tries to convey own message to others. The receiver for messages may get the exact and full idea of the senders, or may get the partial idea or sometimes can not understand anything out of it.

In some cases may happen when there is some lacking in communication (i.e when a child convey message, the mother can understand easily while others can not).

It has a number of applications in different areas and provides potential benefits, Nearly 20% people of the world are suffering from various disabilities; many of them are blind or unable to use their hands effectively. The speech recognition system in those particular cases provide a significant help to them, so that they can share information with people by operating computer through voice input.

Consider the Thousands of people in world they are not able to use their hands making typing impossible. our project is for these people who can't type, and see, even for those of us who are lazy and don't feel like it Our project is capable to recognize the speech and convert the input audio into text; it also enables a user to perform operations such as (open, close, exit, read etc.) program application and a file by providing voice input. example open Word processing, google chrome, Notepad and calculator etc.

MINI PROJECT REPORT ON  
**SMART WASHBASIN**

(Home automation)

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT OF THE AWARD OF  
**BACHELOR OF TECHNOLOGY**

IN

**ELECTRONICS AND COMMUNICATION ENGINEERING**

UNDER THE GUIDENCE OF

**MR. SUDEEP KUMAR (ASST. PROFESSOR, ECE)**

**MR. SHRAWAN K PATEL (ASST. PROFESSOR, ECE)**

**SUBMITTED BY:**

KEERTHI SAI SATHWIK -19106628

RAMBARKI PAVAN KUMAR -19106647

POTHU SAI SURYA -19106639

SADASIVUNI SAI RAHUL -19106654

KOLLU SYAM PRABHATH BHUSHAN VARMA -19106629



**SCHOOL OF STUDIES IN ENGINEERING AND TECHNOLOGY,  
GURU GHASIDAS VISHWAVIDYALAYA,  
KONI, BILASPUR.**

CERTIFICATION

This is to certify that this project called "SMART WASHBASIN (Home automation)" is done by the following students under my direct supervision. This project work has been carried out by them in the laboratories of the Department of Electronics and Communication Engineering, School of Studies in Engineering and Technology, Guru Ghasidas Vishwavidyalaya in fulfillment of mini project as the curriculum of the program.

SIGNATURE OF STUDENTS:

KOLLU SYAM PRABHATH BHUSHAN VARMA -19106629

KEERTHI SAI SATWIK -19106628

SADASIVUNI SAI RAHUL -19106654

RAMBARKI PAVAN KUMAR -19106647

POTHU SAI SURYA -19106639

This is to certify that the above statement made by the students is correct to the best of my knowledge.



SIGNATURE OF SUPERVISOR:

**MR. SUDEEP KUMAR (ASSISTANT PROFESSOR, ECE)**

and

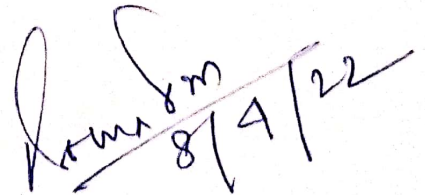
**MR. SHRAWAN PATEL (ASSISTANT PROFESSOR, ECE)**

Dept. of ECE,

SoS in Engineering and Technology,

Guru Ghasidas Vishwavidyalaya, Bilaspur, C.G.

DATE:



विभागाध्यक्ष (इले. एवं संचार अभियंत्रिकी)  
H.O.D. (Elect. & Comm. Engineering)  
प्रौद्योगिकी संस्थान  
Institute of Technology  
गु. घा. वि., बिलासपुर (छ.ग.)  
G. G. V., Bilaspur (C.G.)

## **ABSTRACT**

Make your automatic smart washbasin work when you put your hands underneath just below the water tap outlet. And it automatically stops when we forget to turn off the tap. This infrared-based automatic washbasin tap controller system detects any interruption of the IR rays by your hands or utensils and water automatically starts flowing out of the tap.

# **A Minor Project Report**

On

**“Ezzcom Classroom (Institute Management System)”**



**Department of Electronics & Communication Engineering  
School of Studies in Engineering and Technology  
Guru Ghasidas Vishwavidyalaya, Bilaspur (Chhattisgarh)**

**Under Supervision of**

Mr. SUDEEP KUMAR

Mr. SHRAWAN KUMAR PATEL

**Assistant Professor**

**Department of Electronics & Communication Engineering**

**Submitted By**

Murshid Raza (19106635)

Sumeet Sharma (19106661)

Tanmay Dutta (19106665)

Vikas Bisariya (19106671)

Virendra Yadav (19106672)

## CERTIFICATE

This is to certify that the report of the project submitted is an outcome of the project work entitled "Ezzcom classroom" carried out by Sumeet Sharma (19106661), Tanmay Dutta (19106665), Virendra Yadav (19106672), Murshid Raza (19106635) & Vikas Bisariya (19106671) Batch 2019-23 of 6<sup>th</sup> semester carried out under my guidance and supervision for the award of Degree in Bachelor of Engineering in Electronics and Communication Engineering of Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.), India.

To the best of my knowledge the report

- i) Embodies the work of the candidate him/herself,
- ii) Has duly been completed,
- iii) Fulfils the requirement of the Ordinance relating to the B.Tech degree of the University and
- iv) Is up to the desired standard for the purpose of which is submitted.

(Signature of the Guide)

Prof. Shrawan Kumar Patel  
Department of Electronics &  
Communication Engineering

(Signature of the Guide)

Prof. Sudeep Kumar  
Department of Electronics &  
Communication Engineering

The project work as mentioned above is hereby being recommended and forwarded for examination and evaluation.

(Signature of Head of Department) with seal  
विभागाध्यक्ष (इले. एवं संचार अभियंत्रिकी)  
प्रौद्योगिकी संस्थान  
Institute of Technology  
गु. घा. वि., बिलासपुर (छ.ग.)  
G. G. V., Bilaspur (C.G.)

## ABSTRACT

This project is aimed at developing an Online Institution Management System that is important to the educational institute or college. This system may be used to monitor college students and to provide a simple interface for the maintenance of student and staff information, and their various activities. This application is being developed for an engineering college to maintain and facilitate ease of access to information. For this, the users must be registered with the system. Ezzcom classroom is an Internet-based web- application that aims at providing information to all levels of management within an organization. This system is used as an information management system for the college.

We have used Django based back end with docxtpl and rest framework, PostgreSQL for database management, and OAuht2.0 for token-based authentication. The user interface of the platform is designed with React.js HTML, CSS, which makes the interface attractive, the functionality of the whole website is controlled by Django based backend, which is integrated with Convolutional Neural Network to deal with plagiarism

# **CAR PARKING SYSTEM DESIGN**

## **(A Mini Project)**

**Submitted by :-**

**Rishabh Upadhyay**

**Ankit Kumar**

**Amrit Raj**

**Amit Mishra**

**Anurag Kumar Dubey**

**Under Supervision of**

**Mr. SUDEEP KUMAR**

**Assistant Professor**

**Mr. SHRAWAN KUMAR PATEL**

**Assistant Professor**

**Department of Electronics & Communication Engineering**



**Department of Electronics & Communication Engineering**

**School of Studies in Engineering and Technology,**

**Guru Ghasidas Vishwavidyalaya, Bilaspur(C.G.)**

**Session: 2021-22**



## CERTIFICATION

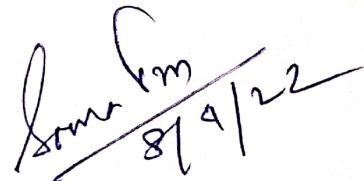
This is to certify that this project entitled "CAR PARKING SYSTEM DESIGN" is done by the following students under my direct supervision. This project work has been carried out by them in the laboratories of the Department of Electronics and Communication Engineering, School of Studies in Engineering and Technology, Guru Ghasidas Vishwavidyalaya in fulfillment of mini project as the curriculum of the program.



**Signature of the supervisor**

Mr. Sudeep Kumar

Assistant Professor, Dept. of ECE



विभागाध्यक्ष (इले. एवं संचार अभियंत्रिकी)  
H.O.D. (Elect. & Comm. Engineering)  
प्रौद्योगिकी संस्थान  
Institute of Technology  
गु. घा. वि., बिलासपुर (छ.ग.)  
G. G. V., Bilaspur (C.G.)

# ABSTRACT

Presently multi day's vehicle parking is a basic issue and step by step its necessity is expanding. In India we are as yet utilizing the manual vehicle parking framework and that is the reason we are confronting issues like wastage of time and fuel discovering free space around the parking ground when we have to park our vehicle which requires a decent measure of lighting. Another issue is clutter that occurs while parking on the grounds that there is no specific framework anybody can park anyplace that at some point makes harm the vehicles while moving out or in the parking area. Security is likewise an issue there.

To tackle these issues we are exhibiting new vehicle parking system. The system fills in as pursues: where the quantity of accessible stopping spaces will be shown in the LED display. While stopping out the driver should give the code to the administrator at the leave gate.

The work presented in this project gives more insight and deeper understanding of constituting modules of parking system. This project investigates the optimized parking system through FPGA employing "logic forgathers" including multiple registers as their logic block.

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*A MINI PROJECT REPORT ON*

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**“AUTOMATIC STREET LIGHT USING  
ARDUINO AND PIR SENSOR”**

Submitted in partial fulfilment of the requirements of the award  
of the Degree

Of

**BACHELOR OF TECHNOLOGY**

in

**DEPARTMENT OF ECE**

by

MAMILLAPALI JAYA VENKATA SAI (19106634)

KANCHI VENKATA MAHITH (19106627) .

ALLU HEMANTHA REDDY (19106603)

TANGUDU SAI PAVAN (19106664)

SAGAM NARASIMHAM (19106655)

*UNDER THE GUIDANCE OF*

**Asst.Prof SUDEEP KUMAR**

&

**Asst.Prof SHRAWAN KUMAR PATEL**



**SCHOOL OF STUDIES IN ENGINEERING AND TECHNOLOGY,  
GURU GHASIDAS VISHWAVIDYALAYA,  
KONI, BILASPUR, INDIA.**

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# ABSTRACT

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Smart Street light is an automated system which automates the street. The main aim of Smart Street light is to reduce the power consumption when there are no vehicle movements on the road. The Smart Street light will glow with high intensity when there are vehicles on the road otherwise the lights will remain dim. With advancement of technology, things are becoming simpler and easier for everyone in the world today. Automation is the use of control systems and information technologies to reduce the need for human work in the production of goods and services. In the scope of industrialization, automation is a step beyond mechanization, whereas mechanization provided human operators with machinery to assist the users with the muscular requirements of work, automation greatly decreases the need for human sensory and mental requirements as well. Automation plays an increasingly important role in the world economy and in daily experience. Automatic systems are being preferred over manual system. The research work shows automatic control of streetlights as a result of which power is saved to an extent. The Smart street light provides a solution for energy saving which is achieved by sensing an approaching vehicle using the IR sensors and then switching ON a block of street lights ahead of the vehicle with high intensity. As the vehicle passes by, the trailing lights turn dim automatically. Thus, we save a lot of energy. So when there are no vehicles on the highway, then all the lights will remain dim.

# CERTIFICATE

This is to certify that Project Entitled "AUTOMATIC STREET LIGHT USING ARDUINO AND PIR SENSOR" that is submitted by our Team

"KANCHI VENKATA MAHITH, SAGAM NARASIMHAM, TANGUDU SAI PAVAN, ALLU HEMANTHA REDDY, MAMILLAPALLI JAYA VENKATA SAI" in partial fulfilment of the requirement of the award of the Degree in B tech in Department of ELECTRONICS AND COMMUNICATION ENGINEERING of SOSET, GGV, is a record of the candidate owned work carried out by him under my own supervision. The matter embodies in thesis is original and has not been submitted for the award of any other degree.

DATE:

*Sudeep*  
GUIDE:

PROJECT

*Sourav S m*  
*8/4/22*  
विभागाध्यक्ष (इले. एवं संचार अभियंत्रिकी)  
H.O.D. (Elect. & Comm. Engineering)  
प्रौद्योगिकी संस्थान  
Institute of Technology  
गु. घा. वि., विलासपुर (छ.ग.)  
G.G. V., Bilaspur (C.G.)

Minor Project Report on

# Alcohol Detection of Drunk Drivers with Automatic Car Engine Locking System

Under the Guidance of

Asst.Prof SUDEEP KUMAR & Asst.Prof Shrawan Kumar Patel

Department of Electronics & Communication, ITGGV

**Bachelor of Technology**

In

**Electronics & Communication**

At



**GURU GHASIDAS**  
**UNIVERSITY**

UNIVERSITY



Department of Electronics & Communication, ITGGV

CERTIFICATE

This is to certify that the B. Tech Project Work Report entitled "Alcohol Detection of Drunk Drivers with Automatic Car Engine Locking System" submitted by the group

NAME OF THE STUDENT	ROLL NO.
DAMODAR GURI	19106619
CHEEPURUPALLI BHASKAR	19106616
VANKALA VENKATESH	19106670
LANDA SAIKIRAN	19106632

as the record of the work carried out by them, is accepted as the B.Tech. Project Report submission in the partial fulfillment of the requirements for the award of the degree of Bachelor of Technology in Electronics & Communication.

*Sudeep*

.....  
**Mr. SUDEEP KUMAR**  
ECE Department, ITGGV  
Koni, BSP

.....  
**Mr. Shrawan Kumar Patel**  
ECE Department, ITGGV  
Koni, BSP

*Soma Das*  
8/4/22

.....  
**Dr. SOMA DAS**  
विभागाध्यक्ष (इ. ए. ई. वी. वि. विलासपुर (उ.प्र.))  
H.O.D. (Elect. & Comm. Engineering)  
**HOD, ECE, ITGGV**  
Institute of Technology  
गु. घा. वि., विलासपुर (उ.प्र.)  
G. G. V., Bilaspur (C.G.)

## ABSTRACT:

This study developed a prototype alcohol detection and engine locking system by using an Arduino Uno microcontroller interfaced with an alcohol sensor along with an LCD screen and a DC motor to demonstrate the concept. The system uses MQ-3 alcohol sensor to continuously monitor the blood alcohol content (BAC) to detect the existence of liquor in the exhalation of a driver. By placing the sensor on the steering wheel, our system has the capacity to continuously check alcohol level from the driver's breath. The ignition will fail to start if the sensors detects content of alcohol in the driver's breath. In case the driver got drunk while driving, the sensor will still detect alcohol in his breath and stop the engine so that the car would not accelerate any further and the driver can park by the roadside.



MINI PROJECT  
REPORT ON FIRE SENSOR DETECTOR  
ALARM AND PREVENTION

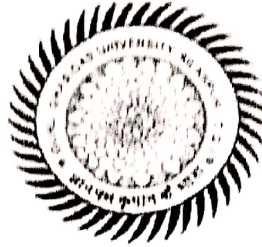


GURU GHASIDAS VISHWAVIDYALAYA  
A CENTRAL UNIVERSITY

➤ **UNDER GUIDANCE OF**

- |  |                           |
|--|---------------------------|
| 1. MR. SUDEEP KUMAR<br>(DEPARTMENT OF ECE)       | 1. ANISH KUMAR (19106608) |
| 2. MR. SARWAN KUMAR PATEL<br>(DEPARTMENT OF ECE) | 2. DEEPAK (19106620)      |
|  | 3. ARPIT ANAND (19106611) |
|  | 4. YASH PANDAY(18106059)  |

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING  
SCHOOL OF STUDIES IN ENGINEERING AND TECHNOLOGY  
GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)  
(A Central University established by the Central University Act 2009 No. 25 of 2009)



CERTIFICATE

It is certified that the mini project entitled "**Fire Sensor Detector Alarm And Prevention**" submitted by **Arpit Anand, Anish Kumar, Deepak, and Yash Pandey** in partial fulfillment of the requirements of the award of the degree of Bachelor of Technology in Electronics and Communication Engineering, School of studies in Engineering and Technology, Guru Ghasidas Vishwavidyalaya, Bilaspur, is carried out by them in the Department of Electronics and Communication Engineering during the session 2022-23 under supervision and guidance of **Mr Sudeep Kumar** (Asst. Professor) and **Mr. Shrawan Kumar Patel** (Asst. Professor), Department of Electronics & Communication Engineering, School of Studies in Engineering & Technology, Guru Ghasidas Vishwavidyalaya, Bilaspur CG.

  
A/8/22

विभागाध्यक्ष (इले. एवं संचार अभियंता) /  
H.O.D. (Electronics Engineering) /  
प्रौद्योगिकी संस्थान /  
Head of Department /  
Electronics & Communication Engineering /  
Institute of Technology /  
गु. घा. वि., विलासपुर (छ.ग.) /  
School of Studies in Engineering & Technology /  
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.) /  
Guru Ghasidas Vishwavidyalaya, Bilaspur CG

## ABSTRACT

Fire alarm system plays an important role in maintaining and monitoring the safe of all kind environments and situations. However the usability of many existing fire Alarm system is well know but could be produce with high cost. Subsequently, it is not affordable for the lowincome users. The main objective of this project is to make a fire control system with low cost. The project has three main systems the detection system the monitoring system and the appliance system. The detection system operates as the fire detector and smoke detector. This paper discusses the design and implementation of a fire alarm system using the ARDUINO UNO R3 which operates the entire system. The detectors are placed in parallel in different levels. Any signal from each detector at any level is monitored using monitoring system. The appliance system has components like GSM for sending SMS services, buzzer for alarming, servos for automatic lockdown of doors in emergency exits and motor pump fire extinguishing foam to stop the fire and GPS module to indicate the location where the fire is occurred for the fire extinguishing car. The entire system is controlled by microcontroller. The microcontroller is programmed in such way by using C-Programming with ARDUINO IDE. From the project done, the System can detects smoke, flame, heat etc. sensed by the detector, followed by the monitoring system which indicates smoke, light, flame, heat etc. at that particular level. Finally when the sensors form each level triggered individually, the main Buzzer operates, send SMS. Then it shows in the control panel LCD display which area is affected and which is safe. Then it runs the emergency exit servo motor to escape and the water pump motor to the affected zone to stop the fire.

A MINI PROJECT REPORT

ON

# **TOPIC: Design and Analysis of Microstrip Patch Antenna**



Session:2021-22

B.Tech, VI Semester

**DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING**

**SCHOOL OF STUDIES IN ENGINEERING & TECHNOLOGY,**

**GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR(C.G.)**

**(A Central University)**

**Under the guidance of**

**1. MR. SUDEEP KUMAR**

**(DEPARTMENT OF ECE)**

**2. MR. SHRAWAN KUMAR PATEL**

**(DEPARTMENT OF ECE)**

**Submitted by**

**1. KOUSHIK GHOSH (19106630)**

**2. JYOTISH KUMAR (19106625)**

**3. HEMANT KUMAR (19106624)**

**4. KAMAL SINGH (19106626)**

**5. AJAY KUMAR (19106602)**



## ABSTRACT

The performance and advantages of microstrip patch antennas such as low weight, low profile, and low cost made them the perfect choice for communication systems engineers. They have the capability to integrate with microwave circuits and therefore they are very well suited for applications such as cell devices, WLAN applications, navigation systems and many others.

In this project; a compact rectangular patch antennas are designed. The final part of this work has been concentrated on studying an array antenna with two and four elements. The antennas of the design examples of this work has been manufactured and tested in laboratory. The results are compared with conventional patch antenna. This proposed antenna is resonated at a frequency of 2.4 GHz and is suitable to Wi-Fi applications.

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING  
SCHOOL OF STUDIES IN ENGINEERING AND TECHNOLOGY GURU  
GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)

(A Central University established by the Central University Act 2009 No. 25 of 2009)



**CERTIFICATE**

It is certified that the minor project entitled “**Design and Analysis of Microstrip Patch Antenna**” submitted by **Koushik Ghosh, Jyotish Kumar, Hemant Kumar, Kamal Singh and Ajay Kumar** in partial fulfillment of the requirements of the award of the degree of Bachelor of Technology in Electronics and Communication Engineering, School of studies in Engineering and Technology, Guru Ghasidas Vishwavidyalaya, Bilaspur, is carried out by them in the Department of Electronics and Communication Engineering during session 2022-23 under supervision and guidance of **Mr. Sudeep Kumar (Assistant Professor)**, Department of Electronics & Communication Engineering, School of Studies in Engineering & Technology, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G).

Under The Guidance of  
**Mr. Sudeep Kumar**  
(Assistant Professor)

**Dr. Soma Das**

विभागाध्यक्ष (इलेक्ट्रॉनिक्स एवं संचार अभियंत्रिकी)  
Head of Department  
H.O.D. (Elect. & Comm. Engineering)  
प्रौद्योगिकी संस्थान  
Department of Electronics & Communication Engineering  
Institute of Technology  
गुरु गणेश विश्वविद्यालय (उ.ग.)  
School of Studies in Engineering & Technology  
G. G. V., Bilaspur (C.G.)  
Guru Ghasidas Vishwavidyalaya, Bilaspur

# IOT BASED HOME AUTOMATION SYSTEM

Pre-Final year project report submitted to the department of Electronics & communication  
Engineering in partial  
fulfilment of the requirements for the Bachelor of Technology

By

**Nitish Kumar Jha (19106637)**

**Sandhya (19106656)**

**Smriti Haldar (19106660)**

Under the guidance of

***Mr. Sudeep kumar & Mr. Shrawan Patel***

Assistant Professor

Department of Electronics & communication Engineering



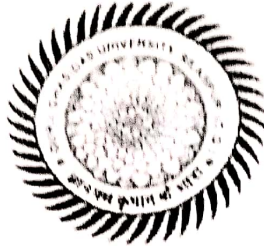
Department of **Electronics & Communication Engineering**

INSTITUTE OF TECHNOLOGY, Guru Ghasidas University

Koni Bilaspur 495 009, Chhattisgarh

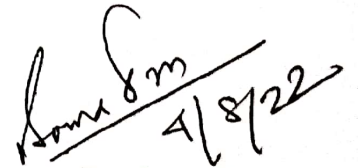
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING  
SCHOOL OF STUDIES IN ENGINEERING AND TECHNOLOGY  
GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)

(A Central University established by the Central University Act 2009 No. 25 of 2009)



**CERTIFICATE**

It is certified that the minor project entitled “IoT Based Home Automation System” submitted by **Nitish Kumar Jha, Sandhya and Smriti Haldar** in partial fulfillment of the requirements of the award of the degree of Bachelor of Technology in Electronics and Communication Engineering, School of studies in Engineering and Technology, Guru Ghasidas Vishwavidyalaya, Bilaspur, is carried out by them in the Department of Electronics and Communication Engineering during session 2022-23 under supervision and guidance of **Mr. Sudeep Kumar and Mr. Shrawan Patel**, Assistant Professor, Department of Electronics & Communication Engineering, School of Studies in Engineering & Technology, Guru Ghasidas Vishwavidyalaya, Bilaspur CG.

  
4/8/22

**Dr. Soma Das**

Head of Department

Department of Electronics & Communication Engineering  
विभागाध्यक्ष (इले. एव संचार अभियंत्रिकी)  
School of Studies in Engineering & Technology  
प्रौद्योगिकी संस्थान  
Guru Ghasidas Vishwavidyalaya, Bilaspur CG  
Institute of Technology  
गु. घा. वि., बिलासपुर (छ.ग.)  
G. G. V., Bilaspur (C.G.)



## ABSTRACT

**T**his project presents the overall design of Home Automation System (HAS) with low cost and wireless system. It specifically focuses on the development of an IOT based home automation system that is able to control various components via internet or be automatically programmed to operate from ambient conditions. In this project, we design the development of a firmware for smart control which can successfully be automated minimizing human interaction to preserve the integrity within whole electrical devices in the home. We used Node MCU, a popular open source IOT platform, to execute the process of automation. Different components of the system will use different transmission mode that will be implemented to communicate the control of the devices by the user through Node MCU to the actual appliance. The main control system implements wireless technology to provide remote access from smart phone. We are using a cloud server-based communication that would add to the practicality of the project by enabling unrestricted access of the appliances to the user irrespective of the distance factor. We provided a data transmission network to create a stronger automation. The system intended to control electrical appliances and devices in house with relatively low cost design, user-friendly interface and ease of installation. The status of the appliance would be available, along with the control on an android platform. This system is designed to assist and provide support in order to 1fulfil the needs of elderly and disabled in home. Also, the smart home concept in the system improves the standard living at home.

Mini Project Report  
On  
**DIGITAL KEYPAD SECURITY DOOR LOCK SYSTEM**  
Submitted in the partial fulfilment for the award of degree of  
Bachelor of Technology  
In  
Electronics and Communication Engineering

By

**Mainak Biswas (18106032)**  
**Praveen Thakre (18106041)**  
**B. Ashish (18106015)**  
**Anand Kumar Thakur (18106008)**  
**Mayank (18106034)**  
**Alok Aditya (18106003)**  
B. Tech, VI Semester

Under the guidance of

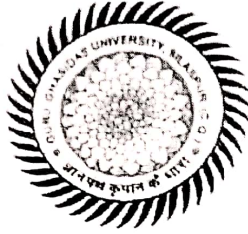
**Mr. Sudeep Kumar & Mr. Shrawan Kumar Patel**  
**(Asst. Professor) & (Asst. Professor)**



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SCHOOL OF STUDIES IN ENGINEERING AND  
TECHNOLOGY  
GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)  
**SESSION: 2021-22**

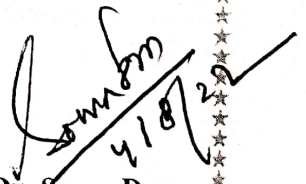
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING  
SCHOOL OF STUDIES IN ENGINEERING AND TECHNOLOGY  
GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)

(A Central University established by the Central University Act 2009 No. 25 of 2009)



CERTIFICATE

It is certified that the mini project entitled "DIGITAL KEYPAD SECURITY DOOR LOCK SYSTEM" submitted by **Anand kumar thakur, B. Ashish, Mainak Biswas, Praveen Thakre, Mayank and Alok Aditya** in partial fulfillment of the requirements of the award of the degree of Bachelor of Technology in Electronics and Communication Engineering, School of studies in Engineering and Technology, Guru Ghasidas Vishwavidyalaya, Bilaspur, is carried out by them in the Department of Electronics and Communication Engineering during the session 2022-23 under supervision and guidance of **Mr Sudeep Kumar** (Asst. Professor) and **Mr. Shrawan Kumar Patel** (Asst. Professor), Department of Electronics & Communication Engineering, School of Studies in Engineering & Technology, Guru Ghasidas Vishwavidyalaya, Bilaspur CG.

  
4/8/22

Dr. Soma Das

विभागाध्यक्ष (इले. एवं कम्यु. इंजीनियरिंग) Department  
H.O.D. (Elect. & Comm. Engineering)  
Electronics & Communication Engineering  
School of Studies in Engineering & Technology  
गुरु. घो. वि., बिलासपुर (छ.ग.)  
G. G. V. Bilaspur (C.G.)  
Guru Ghasidas Vishwavidyalaya, Bilaspur CG

## ABSTRACT

The need for safety can be achieved by making locks which can be electrical or mechanical locked with one or a few keys, but for locking a big area many locks are required. As everyone knows old fashioned locks are heavy weight and fragile also depending on the tools, therefore electronic locks are given more value than those of mechanical locks. Nowadays every device's operation is based on digital technology.

For example, technology-based identity devices are used for automatic door unlocking or locking. These locking systems are used to control the movement of doors and are functional without requiring a key to lock or unlock the door. These locking systems are controlled by a keypad and are installed at the side hedge of the door. The main objective of this project is to give safety at every common place like home, public places. This user would give a known password. The information will be stored in the database. When the correct passcode is entered, the microcontroller will give instructions to the servo motor. Servo motor will perform the action on door unlocking. Thus, what we want is digital technology to construct an integrated and well customized safety system at a price which is reasonable.

If the user inputs the wrong password the door will not unlock. The door is unlocked only when the correct password is entered. Sometimes people may forget to lock the door by themselves, so we have an in-built auto door locking system that automatically locks the door a few minutes after the correct password is entered. Digital door lock is a part of IoT (Internet of Things). It is designed and implemented to enhance security.

**A  
Project Report  
On**

# **THERMOREGULATED FAN SPEED CONTROL & MONITORING USING ARDUINO**

**Submitted in partial fulfillment of the requirement for the award of  
BACHELOR OF TECHNOLOGY**

**in**

**Electronics and Communication Engineering  
SOSET, ITGGV**

**UNDER THE GUIDANCE OF**

**SUDEEP KUMAR (Asst. Prof Dept ECE)**

**SHRAWAN KUMAR PATEL (Asst. Prof Dept ECE)**

**SUBMITTED BY**

**PRAGATI PAL**

**ROLL NO: 19106640**

**GIRIRAJ GAUTAM**

**ROLL NO: 19106623**

**ASHUTOSH KUMAR**

**ROLL NO: 19106613**

**YASH SINGH CHAUHAN**

**ROLL NO: 19106673**

**SAURABH GUPTA**

**ROLL NO: 19106657**

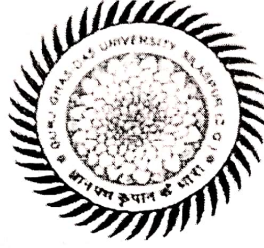


**DEPARTMENT OF ELECTRONICS AND COMMUNICATION  
ENGINEERING, SCHOOL OF STUDIES IN ENGINEERING  
AND TECHNOLOGY, ITGGV, BILASPUR, INDIA**




DEPARTMENT OF ELECTRONICS AND COMMUNICATION  
ENGINEERING SCHOOL OF STUDIES IN ENGINEERING AND  
TECHNOLOGY GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)

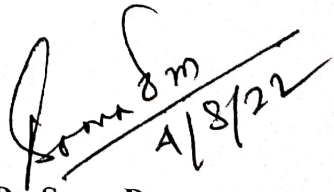
(A Central University established by the Central University Act 2009 No. 25 of 2009)



**CERTIFICATE**

It is certified that the minor project entitled “**Thermoregulated Fan Speed Control & Monitoring Using Arduino**” submitted by **Giriraj Gautam, Pragati Pal, Yash Singh Chauhan, Ashutosh Kumar, and Saurabh Gupta** in partial fulfillment of the requirements of the award of the degree of Bachelor of Technology in Electronics and Communication Engineering, School of studies in Engineering and Technology, Guru Ghasidas Vishwavidyalaya, Bilaspur, is carried out by them in the Department of Electronics and Communication Engineering during session 2022-23 under supervision and guidance of **Sudeep Kumar Asst. Professor**, Department of Electronics & Communication Engineering, School of Studies in Engineering & Technology, Guru Ghasidas Vishwavidyalaya, Bilaspur CG.

  
**Sudeep Kumar**  
Asst. Professor

  
**Dr. Soma Das**  
विभागाध्यक्ष (इले. एवं संचार अभियंत्रिकी)  
Head of Department (Engineering)  
प्रौद्योगिकी संस्थान  
Department of Electronics &  
Communication Engineering, School of  
G. G. V., Bilaspur (C.G.)  
Studies in Engineering & Technology, Guru  
Ghasidas Vishwavidyalaya, Bilaspur CG

20

## **Abstract**

In current times, Electronics play a vital role and help meet the computational power and automation to mechanical and scientific needs. With ever growing and exponential scaling of electricity consumption, we have to save electricity as much as we can. In this, automation helps immensely in smartly conserving energy consumption of a system. The proposed project is a standalone automatic fan speed controller that controls the speed of an electric fan according to our requirement based on the ambient temperature of surroundings. Use of embedded technology makes this closed loop feedback control system efficient and reliable. Arduino microcontroller allows dynamic and faster control. Liquid crystal display (LCD) makes the system user friendly. The sensed temperature and fan speed level values are simultaneously displayed on the LCD panel. It is very compact as it is constructed by using few components and can be interfaced for several applications including air-conditioners, water-heaters, heat-exchangers and the cooling fans fitted in electrical and electronic appliances thus helps in reducing power wastage and expenditure.

**MINI PROJECT** *Report*  
*ON*  
**REPORT ON SPEED CONTROLLED**  
**DC MOTOR**



**Guru Ghasidas Vishwavidyalaya**  
**Central University**

**School of Studies in Engineering & Technology,**  
**Department of Electronics and Communication Engineering**

**Under Supervision of:**

**Mr. Sudeep Kumar**  
**(Assistant Professor)**

**Mr. Shrawan Kumar Patel**  
**(Assistant Professor)**

**Submitted By:**

**Aman Nigam (19106604)**

**Deepanshu Patel (19106621)**

**Ashik Babu (19106612)**

**Disha Shukla (19106622)**

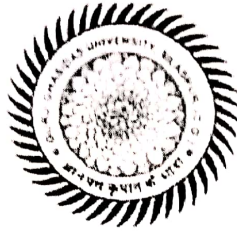


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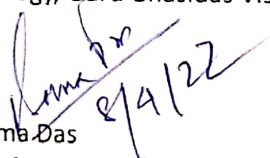
GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)

(A Central University established by the Central University Act 2009 No. 25 of  
2009)



**CERTIFICATE**

It is certified that the minor project entitled "<<Speed control Motor >>" submitted by **Aman Nigam, Deepanshu Patel, Ashik Babu and Disha Shukla** in partial fulfillment of the requirements of the award of the degree of Bachelor of Technology in Electronics and Communication Engineering, School of studies in Engineering and Technology, Guru Ghasidas Vishwavidyalaya, Bilaspur, is carried out by them in the Department of Electronics and Communication Engineering during session 2022 under supervision and guidance of **Mr. Sudeep Kumar and Mr. Shrawn Patel**, <<Assistant Professor>>, Department of Electronics & Communication Engineering, School of Studies in Engineering & Technology, Guru Ghasidas Vishwavidyalaya, Bilaspur CG.

  
Dr. Soma Das

Head of Department Department of Electronics & Communication Engineering School of Studies in  
Engineering & Technology

Guru Ghasidas Vishwavidyalaya, Bilaspur CG

विभागाध्यक्ष (इले. एवं संचार अभियंत्रिकी)

H.O.D. (Elect. & Comm. Engineering)

प्रौद्योगिकी संस्थान

Institute of Technology

गु. घा. वि., बिलासपुर (छ.ग.)

G. G. V., Bilaspur (C.G.)



## Abstract

This work presents a simple speed control application for a DC motor in laboratory use. The speed control of direct current (DC) motor for various applications is very important. The purpose of this application is to maintain the desired speed.

on a generator operating on the same axis to the motor. A detailed analysis is provided on the equipment and the techniques that have been used for the control of the power electronic device. The scope of this work was to plan and test the controller, in terms of energy efficiency and economical operation.

This study presents the critical results of the tests focusing on the best operational point and discusses the related conclusions. The controller's operation was efficient in both low and high speeds that were tested.

V

MINI PROJECT ON

FIRE ALARM CONTROL UNIT



GURU GHASIDAS VISHWAVIDYALAYA

SCHOOL OF ENGINEERING AND TECHNOLOGY

Branch ELECTRONICS AND COMMUNICATION ENGINEERING

Submitted To

Mr. Sudeep kumar sir (Associative professor)

Mr. Sharwan patel sir (Associative professor)

ECE Department  
Koni, Bilaspur

Submitted by:

B. Dinesh-18106016

D. Saikiran-18106021

G. Venkataratnam-18106025

P. SaiKumar-18106038

R. Pavan-18106044





DEPARTMENT OF ELECTRONICS & COMMUNICATION  
ENGINEERING  
SCHOOL OF STUDIES IN ENGINEERING & TECHNOLOGY  
GURU GHASIDAS VISHWAVIDYALAYA  
BILASPUR (C.G.)

CERTIFICATE

We hereby certify that the work which is being presented in the B.Tech. Minor Project Report entitled "FIRE ALARM CONTROL UNIT", in partial fulfillment of the requirements for the award of the Bachelor of Technology in Electronics & Communication Engineering and submitted to the Department of Electronics & Communication Engineering, Institute of Technology, Guru Ghasidas Vishwavidyalaya, Bilaspur, Chhattisgarh, India is an authentic record of my own work carried out during a period from December 2021 to April 2022 (6<sup>th</sup> semester) under the supervision of Assistant Professor Sudeep Kumar, ECE Department.

The matter presented in this Project Report has not been submitted by me or by anyone else for the award of any other degree elsewhere.

Signature of Students

B.Dinesh 18106016

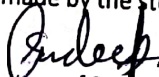
D Sai Kiran 18106021

G Venkataratnam 18106025

P Sai kumar 18106038

R Pavan 18106044

This is to certify that the above statement made by the students is correct to the best of my knowledge.

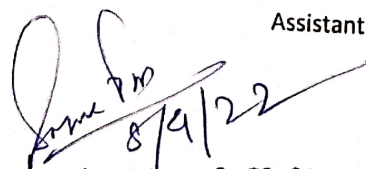
  
Signature of Supervisors

Sudeep Kumar

Assistant Professor

Date:

Head

  
विभागाध्यक्ष (इले. एवं संचार अभियंत्रिकी)  
H.O.D. (Elect. & Comm. Engineering)  
Department of Electronics & Communication Engineering  
प्रायोगिक संस्था

Institute of Technology

गु. घा. वि., विलासपुर (छ.ग.)

G. G. V., Bilaspur (C.G.)



## ABSTRACT

Fire Alarm Circuit is a simple circuit that detects the fire and activates the Siren Sound or Buzzer. Fire Alarm Circuits are very important devices to detect fire in the right time and prevent any damage to people or property.

Fire Alarm Circuits and Smoke Sensors are a part of the security systems which help in detecting or preventing damage. Installing Fire Alarm Systems and Smoke Sensors in commercial buildings like offices, movie theatres, shopping malls and other public places is compulsory.

There are many expensive and sophisticated Fire Alarm Circuit in the form of stand-alone devices, but we have designed five very simple Fire Alarm Circuits using common components like Thermistor, LM358, Germanium Diode, LM341 and NE555.

This is a very simple alarm circuit using Thermistor, LM358 Operational - Amplifier and a Buzzer. The primary purpose of fire alarm system is to provide an early warning of fire so that people can be evacuated & immediate action can be taken to stop or eliminate of the fire effect as soon as possible. Alarm can be triggered by using detectors or by manual call point (Remotel)



## **IOT BASED SMART IRRIGATION SYSTEM**

MINI PROJECT REPORT  
B. TECH 6TH SEMESTER  
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING  
SCHOOL OF STUDIES IN ENGINEERING AND TECHNOLOGY  
GURU GHASIDAS VISHWAVIDYALAYA BILASPUR (C.G)

Under the Guidance of  
SUDEEP KUMAR SIR

### **SUBMITTED BY**

**MEENIGA DOLENDRA VAMSI KRISHNA – 18106035**  
**KOLLI APPALA RAMA HARSHA VARDHAN – 18106028**  
**PRUDHVI NAGENDRA BABU – 18106043**  
**CHITTETI HARSHA VARDHAN – 18106019**  
**AKHILENDRA SAMSANI - 18106049**



DEPARTMENT OF ELECTRONICS & COMMUNICATION  
ENGINEERING  
SCHOOL OF STUDIES IN ENGINEERING & TECHNOLOGY  
GURU GHASIDAS VISHWAVIDYALAYA  
BILASPUR (C.G)

CERTIFICATE

We hereby certify that the work which is being presented in the B.Tech. Minor Project Report entitled "IOT BASED SMART IRRIGATION SYSTEM", in partial fulfillment of the requirements for the award of the Bachelor of Technology in Electronics & Communication Engineering and submitted to the Department of Electronics & Communication Engineering, Institute of Technology, Guru Ghasidas Vishwavidyalaya, Bilaspur, Chhattisgarh, India is an authentic record of my own work carried out during a period from December 2021 to April 2022 (6<sup>th</sup> semester) under the supervision of Assistant Professor Sudeep Kumar, ECE Department.

The matter presented in this Project Report has not been submitted by me or by anyone else for the award of any other degree elsewhere.

Signature of Students

MEENIGA DOLENDRA VAMSI KRISHNA 18106035

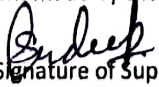
AKHILENDRA SAMSANI 18106049

KOLLI APPALA RAMA HARSHAVARDHAN 18106025

CHITTETI HARSHAVARDHAN 181060319

PRUDHVI NAGENDRA BABU 18106043

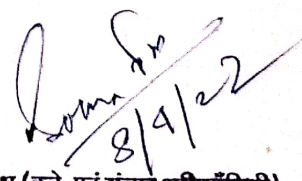
This is to certify that the above statement made by the students is correct to the best of my knowledge.

  
Signature of Supervisors

Sudeep Kumar  
Assistant Professor

Date:

Head

  
8/4/22  
विभागाध्यक्ष (इले. एवं संचार अभियंत्रिकी)  
H.O.D. (Elect. & Comm. Engineering)  
प्रौद्योगिकी संस्थान  
Institute of Technology  
गु. घा. वि., बिलासपुर (छ.ग.)  
G. G. V., Bilaspur (C.G.)



**Abstract:-**

Agriculture plays a critical role in India's food production and development. Agriculture in our country is reliant on the monsoons, which are not sufficient source of water. Therefore, irrigation is necessary in agriculture. Smart irrigation systems have the potential to increase crop yields while conserving water. The Internet of Things (IOT) is a turning point in the growth of technology. This study offers an automated irrigation system based on IOT devices that monitors and maintains the desired soil moisture content and temperature through automatic watering. These IoT devices also detect heat in the environment and allow water to flow via irrigation pipes only when moisture levels, temperature fall below/above a predefined threshold. The data collected by sensors is transferred to a server database or the cloud, where it can be analysed to design watering schedules. This technology will be more useful in locations where water is scarce and will be more efficient in meeting its requirements.



**GURU GHASIDAS UNIVERSITY**  
**PROJECT REPORT**  
**ON**  
**WEBCAM MOTION DETECTOR USING**  
**PYTHON**



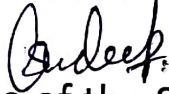
**UNDER THE SUPERVISION OF**  
**PROF.SUDEEP KUMAR**  
**(DEPT. OF ECE)**

**SUBMITTED BY-**

- 1. PRASANJIT SAHA-19106642**
- 2. PREM KUMAR-19106643**
- 3. PRINCE JAISWAL-19106644**
- 4. UJJWAL KISHOR-19106666**
- 5. UTKARSH RAJ-19106667**

## CERTIFICATION

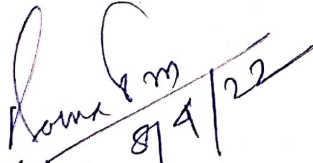
This is to certify that this project entitled "WEBCAM MOTION DETECTOR USING PYTHON" is done by the following students under my direct supervision. This project work has been carried out by them in the laboratories of the Department of Electronics and Communication Engineering. School of Studies Engineering and Technology, Guru Ghasidas Vishwavidyalaya in fulfilment of Mini Project as the curriculum of the program.



Signature of the Supervisor

Mr. Sudeep Kumar.

Assistant Professor, Dept. of ECE



Signature of the Supervisor

Mr. Shrawan Kumar Patel

Assistant Professor, Dept. of ECE

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# ABSTRACT

In today's competitive environment, the security concerns have grown tremendously. In the modern world, possession is known to be 9/10ths of the law. Hence it is imperative for one to be able to safeguard one's property from worldly harms such as thefts, destruction of property, people with malicious intent etc.

Due to the advent of technology in the modern world, the methodologies used by thieves and robbers for stealing has been improving exponentially. Therefore, it is necessary for surveillance techniques is also improve with the changing world. With the improvement in mass media and various forms of communication, it is now possible to monitor and control the environment to the advantage of the owners of the property.

The latest technologies used in the fight against thefts and destruction are the video surveillance and monitoring. By using the technologies, it is possible to monitor and capture, every inch and second of the area in interest. However so far the technologies used are passive in nature, i.e., the monitoring systems only help in detecting the crime but do not actively participate in stopping the crime, but do so while the crime is taking place.

Therefore, we have developed a methodology to detect the motion in a video stream environment and this is an idea to ensure that the monitoring systems only help in detecting the crime, but do so while the crime is taking place. Hence, a system is used to detect any motion in a live streaming video and once motion has been detected in the live stream, the software will activate a warning system and capture the live streaming video.

## CERTIFICATE

This is to certify that Project Entitled "WATER LEVEL DETECTOR USING PROTEUS SOFTWARE" that is submitted by our Team

" D. NEHA REDDY, PRIYANKA KASHYAP, REDDY AKHILA,

V.V..SRAVANTHI JAGAN KOLA , VAISHNAVI ROY "

in partial fulfilment of the requirement of the award of the Degree in B tech in Department of **ELECTRONICS AND COMMUNICATION ENGINEERING** of SOSET,GGV, is a record of the candidate owned work carried out by him under my own supervision. The matter embodies in thesis is original and has not been submitted for the award of any other degree.

DATE :

*Signature*  
87/9/22

*Signature*  
PROJECT GUIDE :

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