

Smart Electronic Voting Machine Using Arduino & LCD Display

“A dissertation submitted in partial fulfillment of the requirements for the Degree of Bachelor of Technology in Electronics and Communications Engineering from the Maulana Abdul Kalam Azad University of technology”



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Project Report On IOT BASED HEALTH MONITORING SYSTEM

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ABSTRACT

The main concept of this project is to create a low cost affordable health monitoring system for people in remote locations where availability of specialist doctors is not possible. This system is portable, low cost and can be easily operated by anyone with limited knowledge.

Also this concept is developed using IoT, so that we can send the data to a remote server from which it can be accessed by doctors. This project is designed using Arduino mega 2560 micro controller development board, ADS1292r ECG shield, LM35 industrial grade temperature sensor, ESP8266 Wi-Fi controller chipset, 16X2 LCD Display. The ECG shield and LM35 are generating analog output, so they are interfaced to the analog pins of Arduino Mega.

Using the Pulseoximeter, we can get the Pulse rate and BP. All the above readings (ECG graph, Blood pressure, Heartbeat, temperature) are read through respective pins and are stored in various variables along with displaying on LCD locally. An account has to be created in any one of the IoT platforms like Allthingstalk, Thingspeak, Smartliving, IBM Bluemix etc.

The credentials of the IoT account like Username, Device-Id, Asset-Id, Secret key etc., has to be noted down to be added in the Arduino program. In the Arduino program, the above credentials are added along with unique pin numbers for assets (Parameters) to be differentiated. The parametric readings from above procedure which are stored in various variables along with their respective pin numbers (to identify them) are transmitted to the IoT account using ESP8266 Wi-Fi interface. Then the IoT platform processes them and adds to the previously stored values to log data. The logged parametric data can be accessed from anywhere by accessing our IoT account. Also, we can add multiple users to a single account to monitor data like remote specialists- doctors etc.

Project Report On **FINGERPRINT BASED ATTENDANCE SYSTEM.**

“A dissertation submitted in partial fulfillment of the requirements for the Degree of Bachelor of Technology in Electronics and Communication Engineering from the Maulana Abul Kalam Azad University of Technology”



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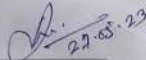
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Project Report On SMART HOME SMART CONNECTION

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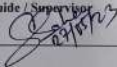
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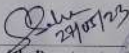
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ABSTRACT

It is a project based on smart home system where we can use our mobile phone to turn on or off our daily home appliances by using an app name “Arduino Bluetooth Controller” which is available on Google Playstore for android users and applestore iOS users.

In this app we have options to switch our daily home appliances by voice control where we can say fan on/off TV on/off or something else electronics gadgets name as I desired also we can select terminal option where we can type TV on/off or fan on/off or something else electronics gadgets name as I desired. When this system is ready to use and installed successfully in house first we have to open the app on mobile and turn it on by connecting Bluetooth when it is successfully connected it's ready to use by using voice control or typing control to switch our daily home appliances. In this way we can make our home smarter with the help of this wireless system which is easy to use and very pocket friendly budget.

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List of Components

- 1. Atmega 8a-pu Microcontroller**
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- 4. Control relays**
- 5. Connecting wires**
- 6. Vero-board**
- 7. Crystal oscillator 16Mhz**
- 8. NPN transistors**
- 9. Lights**
- 10. Resistance**
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- 12. Diodes**
- 13. Capacitors**

Project Report On **Automatic Street Lights with Solar Power Source**

“A dissertation submitted in partial fulfillment of the requirements for the Degree of Bachelor of Technology in Electronics and Communication Engineering from the Maulana Abul Kalam Azad University of Technology”



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We also have great pleasure in expressing our/my gratitude to all faculty members of Electronics & Communication Engineering department as well as Library.

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ABSTRACT

This project is based on the idea of maintaining maximum utilization and minimum loss of available energy. The plenty of solar energy available during the day time is stored in a solar cell and the stored energy is used to glow the street lights during the whole night. Also the system provides a power saving mode of operation by adapting the method of automation. A dark sensor and a light sensor provides the automatic “ON”/”OFF” facility to the street lights, so that it will glow automatically when it is required(i.e. when the surrounding will be dark) and it will be turned “OFF” automatically if sufficient light is available in the surrounding. Again the auto intensity control mechanism has been applied by the help of a microcontroller to control the light intensity of the luminaries as per the requirement. Hence the loss of energy due to unnecessary glow of the street lights can be avoided.

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Project Report On LENGTH MEASUREMENT USING LASER

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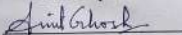
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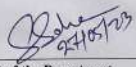
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ABSTRACT

The accurate measurement of length plays a critical role in various scientific, industrial, and engineering applications. This project focuses on the development of a Length Measurement System using Laser technology. The objective is to design a reliable and precise method to measure distances using laser beams and associated sensors.

The proposed system utilizes a laser emitter and a sensor unit. The laser emits a focused beam towards the target object, and the sensor unit detects the reflected laser light. By analyzing the time it takes for the laser light to travel to the target and back, the distance can be calculated using the speed of light. This principle, known as time-of-flight measurement, forms the basis of the system.

To ensure accuracy, the system incorporates advanced signal processing algorithms and calibration techniques. These techniques compensate for factors such as environmental conditions, sensor noise, and system errors. Additionally, the system provides real-time feedback and visualization of the measured distances through a graphical user interface.

The Length Measurement System using Laser offers numerous advantages over traditional measurement methods. It provides non-contact measurement, eliminating the need for physical contact with the target object. It offers high precision and accuracy, enabling measurements at the micron level. The system is versatile and can be employed in various industries, including manufacturing, construction, and research laboratories.

In conclusion, the Length Measurement System using Laser offers a reliable and accurate solution for distance measurement. Its non-contact nature, high precision, and adaptability make it an invaluable tool for a wide range of applications.

OBJECTIVE

The objective of the "Length Measurement Using Laser" project is to develop an accurate and efficient method for measuring distances using laser technology. By utilizing lasers, this project aims to overcome the limitations of traditional measurement techniques and provide a non-contact, precise, and reliable solution. The project will focus on designing and implementing a laser-based measurement system that can accurately determine the length or distance between two points. The resulting system will have applications in various fields such as engineering, manufacturing, construction, and research, where accurate length measurements are crucial for ensuring quality and precision in operations.

Project Report On Smart Dustbin

“A dissertation submitted in partial fulfillment of the requirements for the Degree of Bachelor of
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ABSTRACT

The main objective of the project is to design a smart dustbin which will help in keeping our environment clean and also eco friendly. We are inspired from Swaach Bharat Mission. Nowadays technologies are getting smarter day-by-day so, as to clean the environment we are designing a smart dustbin by using Arduino.

This smart dustbin management system is built on the microcontroller based system having ultrasonic sensors on the dustbin. If dustbin is not maintained than these can cause an unhealthy environment and can cause pollute that affect our health. In this proposed technology we have designed a smart dustbin using ARDUINO UNO, along with ultrasonic sensor, servo motor, and battery jumper wire.

After all hardware and software connection, now Smart Dustbin program will be run. Dustbin lid will when someone comes near at some range than wait for user to put garbage and close it. It's properly running or not. For social it will help toward health and hygiene, for business for we try to make it affordable to many as many possible. So that normal people to rich people can take benefit from it.

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**PROJECT REPORT ON
IOT BASED WOMEN SECURITY SYSTEM**

A dissertation submitted in partial fulfillment of the requirements for the
Degree of

BACHELOR OF TECHNOLOGY

IN

ELECTRONICS & COMMUNICATION ENGINEERING

(Maulana Abul Kalam Azad University of Technology)



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We/I are/am also highly grateful and would like to express our/my deep sense of gratitude to **Mr.**

PULAK MAZUMDER For his/her immense contribution, valuable guidance, suggestions, advice and continuous encouragement have helped us/me in successful completion of the project on "**IOT BASED WOMEN SECURITY SYSTEM**".

We/I also have great pleasure in expressing our/my gratitude to all faculty members of the Electronics & Communication Engineering department as well as Library.

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ABSTRACT

As far as women safety is concerned. Especially in our country the standards are going to decrease day by day. According to the National Crime Records Bureau (NCRB) the incidents of kidnapping and abductions rose to 64 per million to 74 per million which is devastating. If it goes on increasing like this, In the coming years there will be a tremendous rise in crime rate especially against women. It is our responsibility to protect our mothers, sisters, friends and each and every woman in our family.

There are many devices in the market for this application that are sending locations and alert messages to the family of the user. But, all the devices need the response from the user when they are in danger to send the alert messages or such to their family or emergency services. But there might be situations where the user has zero chances to respond or send any alert messages to their family. We came up with a solution where the alert messages and current location of the user are sent automatically to their family when they are in danger without any response from the user. This paper deals with the functionality and implementation of our idea in Embedded Systems and IoT.

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Project Report On IOT Based Home Appliances System

“A dissertation submitted in partial fulfillment of the requirements for the Degree of Bachelor of Technology in Electronics and Communication Engineering from the Maulana Abul Kalam Azad University of Technology”



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We I are/am also highly grateful and would like to express our/my deep sense of gratitude to Ms. Poulmi Banerjee. For his/her immense contribution, valuable guidance, suggestions, advice and continuous encouragement are helped us/me in successful completion of the project on "IOT Based Home Appliances System".

We I also have great pleasure in expressing our/my gratitude to all faculty members of Electronics & Communication Engineering department as well as Library.

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List of Components

- 1. NodeMCU - ESP8266**
- 2. Power supply(Power Bank)**
- 3. 4 Channel Control relays**
- 4. Connecting wires**
- 5. Breadboard**
- 6. Light Bulbs(Devices)**

Project Report On DETECTION OF AIR POLLUTION IN VEHICLES USING EMBEDDED SYSTEM

“A dissertation submitted in partial fulfillment of the requirements for the Degree of Bachelor of Technology in Electronics and Communication Engineering from the Maulana Abul Kalam Azad University of Technology”



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This is to certify that this report of B. Tech final year project, entitled "Detection of Air Pollution Using Embedded System" is a record of bona-fide work, carried out by Ayanava Lahiri, Tiyasa Rusdra & Ayana Basu under my supervision and guidance.

In my opinion, the report in its present form is in partial fulfillment of all the requirements, as specified by the *Regent Education and Research Foundation* and as per regulations of the *Maulana Abul Kalam Azad University of Technology*. In fact, it has attained the standard, necessary for submission. To the best of my knowledge, the results embodied in this report, are original in nature and worthy of incorporation in the present version of the report for B. Tech in Electronics and Communication Engineering.

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We also have great pleasure in expressing our gratitude to all faculty members of Electronics & Communication Engineering department as well as Library.

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ABSTRACT

This will have one page abstract of the project. It should be a snapshot of the total project, so that by reading this anyone can get an idea about the project.

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Project Report On
**“AUTOMATIC PLANT WATERING
SYSTEM”**

“A dissertation submitted in partial fulfillment of the requirements for the Degree of
Bachelor of Technology in Electronics and Communication Engineering from the
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We/I are/am also highly grateful and would like to express our/my deep sense of gratitude to Miss. SUPARNA PANCHANAN . For his/her immense contribution, valuable guidance, suggestions, advice and continuous encouragement are helped us/me in successful completion of the project on "AUTOMATIC PLANT WATERING SYSTEM".

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ABSTRACT

An automatic plant watering system is a device that automatically waters plants without the need for human intervention. This can be a valuable tool for people who travel frequently or who simply do not have the time to water their plants on a regular basis. Automatic plant watering systems typically use a soil moisture sensor to determine when plants need water. Once the sensor detects that the soil is dry, the system will automatically turn on a water pump and water the plants until the soil reaches a desired moisture level.

There are many different types of automatic plant watering systems available, ranging from simple, DIY kits to complex, commercial systems. The type of system that is best for you will depend on the number of plants you have, the size of your garden, and your budget.

Automatic plant watering systems can save you time and money, and they can help to ensure that your plants are always properly watered. If you are considering purchasing an automatic plant watering system, be sure to do your research to find the system that is right for you

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