

# IOT BASED WEATHER MONITORING SYSTEM

## PROJECT REVIEW - 2

B - 12



# OUR TEAM

**SHREYAS  
SINGH**

20BCE2182

**SHIVAM  
SINGHAL**

19BCE2112

**PRASANNA  
KUMAR N**

20BCE2121

# TABLE OF CONTENTS

## INTRODUCTION

Weather Monitoring System  
For Effective Analytics

## JOURNAL 2

You can describe the  
topic of the section here

## JOURNAL 4

Weather Monitoring System  
Using Internet Of Things

## OBJECTIVE

I.

Introduction to Literature  
Review

II.

## JOURNAL 1

III.

Weather Monitoring System  
For Precision Agriculture

IV.

## JOURNAL 3

V.

weather monitoring  
system for effective  
analytics

VI.

## JOURNAL 5

VII.

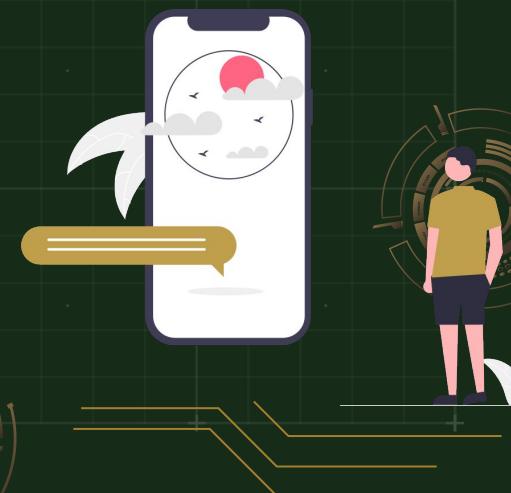
Objective of our work

# I. INTRODUCTION

Weather Monitoring system plays a large utility in varied areas from agricultural growth and development to industrial development.

Sensing the weather has been important to man over the centuries. The winds and other weather variables are of equal concern and can have an even greater impact on our modern, high-tech lifestyle.

A weather station is that facility on land or sea, which has instruments and devices for observing and measuring atmospheric parameters to provide the information for weather forecasts. Modern weather monitoring systems and networks are designed to make the measurements necessary to track these movements in a cost effective manner.



## II. WEATHER MONITORING SYSTEM FOR EFFECTIVE ANALYTICS

### OBJECTIVE

To implement and data visualization of weather parameters like temperature, humidity, PM 2.5 and PM 10 concentrations and AQI using the Raspberry Pi as server and data accessed over the intranet or internet in a specified subnet or world wide web

### ADVANTAGES

The proposed system is the most compact unit for measuring weather parameters in regions suffering from PM 2.5 pollution.  
Helps to monitor the weather metrics corresponding to pollution over a centralized data analytics server.

### DISADVANTAGES /Future Scope

The proposed system can be connected to the internet for the study from various locations.



## III. WEATHER MONITORING SYSTEM FOR PRECISION AGRICULTURE

### OBJECTIVE

To intelligently select low cost sensors (without compromising with the accuracy and precision), collect data in real time, store the data in cloud, perform visualization of data and to carry out analytics on the data

### ADVANTAGES

The proposed system would also aid the farmers to carry out the agricultural tasks on real-time bases, which in turn helps them to use the agricultural resources in efficient way and at the time when needed by the crops

### DISADVANTAGES /Future Scope

More sensors can be used to sense wind speed and direction and deploying the prototype into the agricultural field and monitor weather parameters and convert this prototype in a full-fledged Precision Weather Station

# IV. RASPBERRY PI BASED WEATHER REPORTING OVER IOT

## OBJECTIVE

To create a prototype system that takes in account different weather factors and makes them available to users by different methods. Different factors include temperature, humidity, pressure, light intensity and rainfall.

## ADVANTAGES

A portable module that can produce accurate results up to a height of 3000m and a temperature range between 0OC to 50OC.

## DISADVANTAGES /Future Scope

Periodic data sensing is used. So data is stored or the buzzer is set off only when there is a drastic change from the normal values.  
Data is available only online which can be inaccurate at times due to time latency.  
Insufficient data collected that results in low accuracy



# V. INTERNET OF THINGS FOR LOCAL WEATHER MONITORING

## OBJECTIVE

This paper proposes the compact Internet of Things (IoT) module for local weather monitoring. This IoT module was designed and developed to collect meteorological data for the purposes of power output prediction from photovoltaic panels and environmental data for the evaluation of the air quality in inhabited areas.

## ADVANTAGES

Measures Humidity, temperature, Barometric pressure, Visible spectrum, Infrared spectrum, Air quality accurately.

## DISADVANTAGES /Future Scope

Needs constant power supply since the current version of the IoT module cannot run on battery because of its significant power consumption



## VI. WEATHER MONITORING SYSTEM USING IOT

### OBJECTIVE

This system proposed for monitoring weather conditions in a particular place like temperature, humidity, CO Level using sensors, sensors detect changes in environment and send it to the users for making statistical analysis using IoT.

### ADVANTAGES

Sensors monitor the parameters using IDE & received data and result analysis will be send to end user through Wi-Fi. AT Mega 328 controller used to control the all the sensors, and it receives the data from sensors, and send it to end users through cloud.

### FUTURE SCOPE

This type of model can be used for both industrial & domestic uses (weather monitoring or Humidity monitoring) etc... Also, Alert Message can be send to users from time to time.

# VII.

## OBJECTIVE

The objective of this project is to design and implement portable weather stations. This weather station will help us to determine 3 parameters namely temperature and humidity using the DHT11 sensor and rain condition using the KG004 rain drop sensor. NodeMCU has been used to interface the sensors and the WIFI module embedded inside the NodeMCU helps in connecting with the cloud(ThinkSpeak) which will show the telemetric data. We will also create a notification whenever the raindrop sensor receives a positive signal using IFTTT

# REFERENCES

- Joseph, Ferdin Joe John. "IoT based weather monitoring system for effective analytics." *International Journal of Engineering and Advanced Technology* 8.4 (2019): 311-315.
- Math, Rajinder Kumar M., and Nagaraj V. Dharwadkar. "IoT Based low-cost weather station and monitoring system for precision agriculture in India." *2018 2nd International Conference on I-SMAC (IoT in Social, Mobile, Analytics and Cloud)(I-SMAC) I-SMAC (IoT in Social, Mobile, Analytics and Cloud)(I-SMAC), 2018 2nd International Conference on. IEEE, 2018.*
- Kavin, R., et al. "Weather monitoring system using internet of things." *2020 6th International Conference on Advanced Computing and Communication Systems (ICACCS). IEEE, 2020.*
- T. Akilan, R. Astya, A. K. Singh, A. Chitransh and A. Singh, "Raspberry Pi Based Weather Reporting over IoT," *2020 2nd International Conference on Advances in Computing, Communication Control and Networking (ICACCCN), 2020*
- S. Matuska, R. Hudec and M. Sinko, "Internet of Things for Local Weather Monitoring," *2020 ELEKTRO, 2020*

# Thank YOU

