WALCHAND COLLEGE OF ENGINEERING, SANGLI

(Government-Aided Autonomous Institute)

Department of Electronics Engineering

Third Year B. Tech. Project Synopsis

"IOT BASED WHEATHER STATION"

Submitted By:-

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1. Introduction

One such remark leads towards the online smart weather station system. The weather parameters should be able displaying, analysing and monitoring system using Blynk IoT platform both on the Web Dashbord as well as the Phone App in the form of live values and charts that connect user with internet that visible anywhere in the world. To analyse and monitoring system using Blynk that connect user with internet that visible anywhere in the world. Internet of Things (IoT) is playing a leading role in providing solutions to many applications with the support of software, internet and embedded systems. Climate plays an important role in human life the unprecedented growth of industries and vehicular traffic have seriously affected the purity of clean air and environment. Satellite weather report system gives condition of present which does not give the exact condition of the particular place. The building sector offers a great potential for the energy savings, where it is necessary to have accurate weather data in the exact location where the building is being built in order to improve the calibration of energy simulation programs . By develop a controlling local weather reporting system with ESP32.

Use of technology in the field of agriculture plays important role in increasing the production as well as in reducing the extra man power efforts, some of the researches tried for betterment of farmers and provides the systems that use technologies which are helpful for increasing the agriculture yield . Difficulty to monitor weather parameters through offline system such as agriculture zone during certain hazardous envy and critical situations where the people need to check manually the weather condition at the places and it will take time unless it is online system. In the evolving generation of wireless technology, the concept of smart cities and IOT has given a new remark in the world.

2. Literature Survey

In today's world many pollution monitoring systems are designed by different environmental parameters.

1.Existing system model is presented IOT based Weather monitoring and reporting system where you can collect, process, analyses, and present your measured data on webserver.

Wireless sensor network management model consists of and device, router, gateway node and management monitoring center. End device is responsible for collecting wireless sensor network data, and sending them to parent node, the data are sent to gateway node from parent node directly or by router.

2. After receiving the data from wireless sensor network, gateway node extracts data after analysing and packaging them into Ethernet format data, sends them to the server. Less formally, any device that runs server software could be considered a server as well. Servers are used to manage network resources. The services or information provided through the Internet that are connected through LAN and made available for users via smart phones, web browser or other web browser devices to make the system more intelligent, adaptable and efficient.

3. Proposed Work

1. Block Diagram Of Wheather Monitoring system:

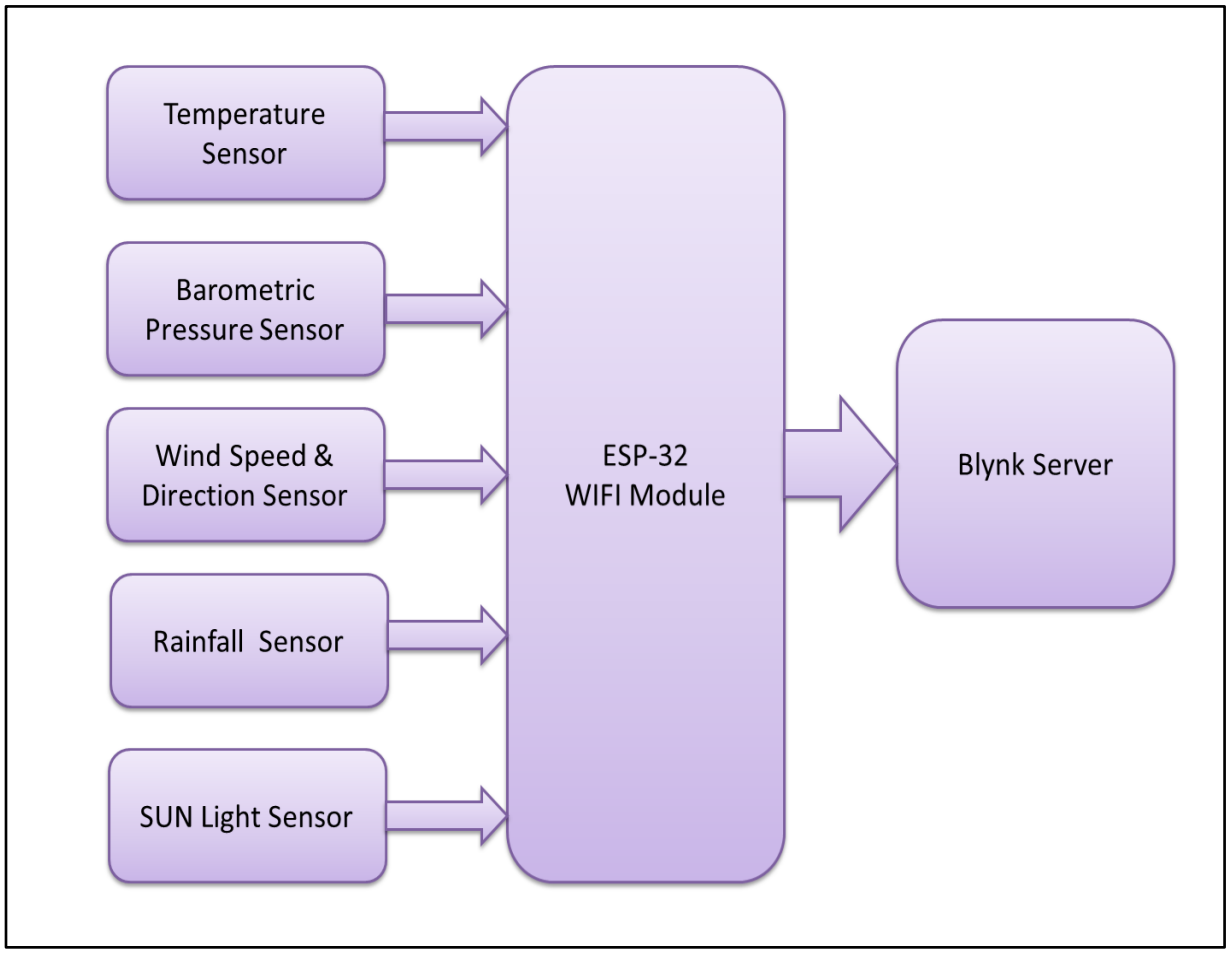

fig:Block Diagram

Generally,this project is proposed to implement the IoT technology as a communication medium in this project. The process of the system is start after the microcontroller ESP32 configured all the sensor and start to read the data from the sensor. Then, the data also be sends to the Blynk IoT platform that is via wireless communication by ESP32 Wi-Fi network. The sensors that connect to ESP32 is act

as the control unit of the system where all the data is collected here. This system automatically displays the temperature, humidity, pressure, rain, air quality, and weather condition on specific webpage of IoT in Blynk platform as well it will also display this data on the weather station display. The flowchart of the con-trolling mode process is shown in figure.

2. Circuit Diagram:

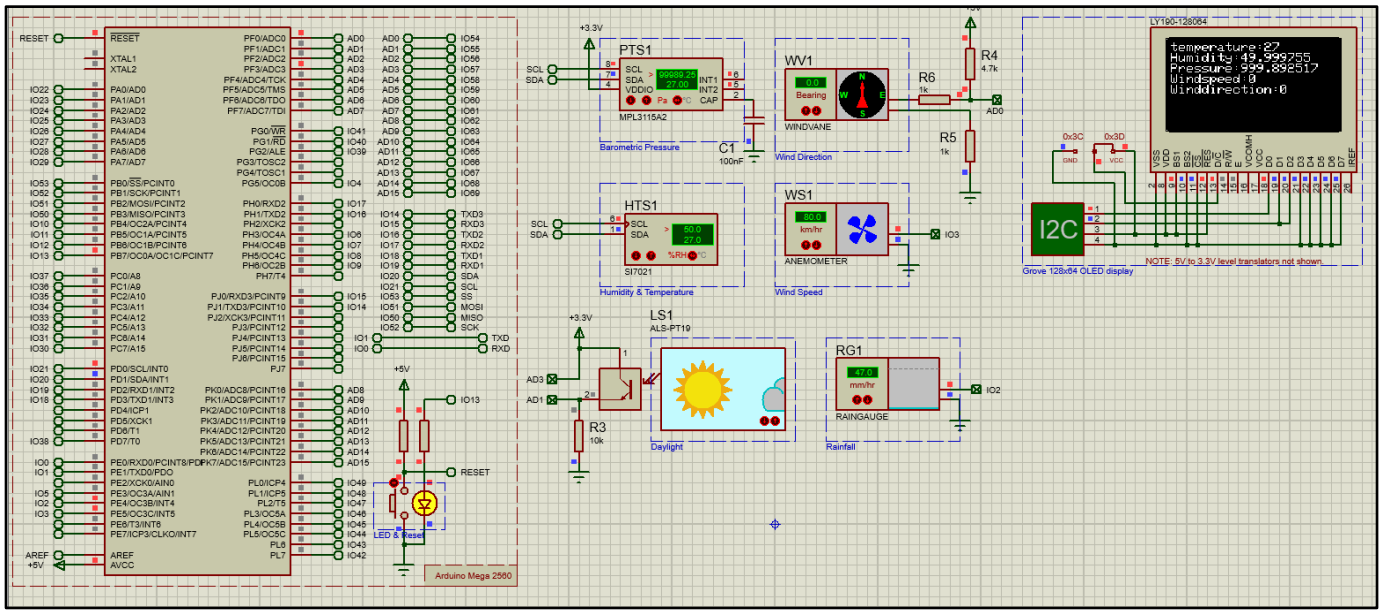

fig2:Circuit Diagram

3. objectives

1. The main objective of this project is to monitor the weather parameter anywhere in the real time.

2. That can help user to plan day to day activities.

3. Use of this technology in the field of agriculture plays important role in increasing the production as well as in reducing the extra man power efforts.

4. Methodology

This project will focus on development of the Blynk IoT platform that to show the data of the sensor. The method divided into two parts which are hardware and software development part.

1. The hardware development involves the circuit construction and develops the prototype. Meanwhile, the software part involves the IoT coding, circuit schematic diagram, circuit simulation and data acquisition.

2. By using three types of sensor to monitoring the weather parameter that are temperature, humidity, rain, and air quality the system will be able to display the weather condition by an analysis about the current weather with the sensor value data. all the data will be control by a microcontroller ESP32 .

3. Furthermore, this system will also be seen on Blynk IoT platform both on the Web dashbord as well as the Phone App in the form of live values and charts that connect user with internet that visible anywhere in the world that has been created to simplify user to check online the sensor data.

4. The data collected will be analyse and compare it with Jabatan Meteorologi Malaysia to ensure the precise of data and weather condition on current condition. The Internet of Things (IoT) will connect the system with the user wireless and online without the need of checking manually.

5. Expected Outcomes

Based on the results of analysis of all data obtained by testing the parameter with the Internet of Things based ESP32 module and blynk iot platforms, the following outcomes can be drawn:

Weather monitoring with Internet of Things (IoT) based ESP32 Module can be designed with various components hardware and software support so that it can be place anywhere in environment and measure weather parameter and display that parameter using iot based blynk platform.

6. References

1. Kulkarni, V. A, Satpute G. M (2017). "Weather Reporting System Using FPGA : A Review," vol. 4, no. 11, pp. 319–320.

2. Carlos, M, Jorge, P.B, Daniel F, Pablo S (2018). "Design, Development and Implementation of a Weather Station Prototype for Renewable Energy System," Journal Energies, 11(9), 2234, pp. 1-13.

3. https://iopscience.iop.org
4. https://how2electronics.com

List of Components

SR.NO	COMPONENT	QUANTITY
1.	ESP32	01
2.	DHT11	01
3.	SI1145 (UV Sensor)	01
4.	BMP 180 (Barometric)	01
5.	Solar Panel (6V)	01
6.	TP 4056 ,1A (LI-ION Battery Charger)	01
7.	MQ2 Sensor	01
8.	PCB	01
9.	Connecting Wires	-
10.	Male Header	-
11.	Female Header	-

Proposed Work Plan

Sr. No.	Work/ Activity	Month
1.	Group Formation.	JAN
2.	Discussion on Various Project Topic.	FEB
3.	Project Topic Finalization.	FEB
4.	Information Collection and Components selection for Project.	MAR
5.	Preparation of synopsis and submission	MAR