**DESIGN OF IOT BASED WEATHER MONITORING SYSTEM**

**Abstract:**

Weather monitoring is critical in many aspects. Weather has a direct influence on the agriculture industry, food manufacturing, and many other industries. The condition of the environment, whether hot or cold, humid or dry, calm or turbulent, clear or shady is referred to as the atmosphere. Most temperature anomalies occur in the lower atmosphere, much below the stratosphere. Climate, in general, refers to regular temperature and precipitation movement, whereas atmosphere refers to longer timeframes for normal weather conditions. When the term "climate" is used without capacity, it is intended to denote the Earth's climate. It is physically impossible to track atmospheric conditions. The method suggested in this research is a modern approach used for evaluating climate conditions at a specific location and making data visible throughout a network range. The technology underlying this is the Internet of Things (IoT), which is a cutting-edge and cost-effective method used for connecting things to the internet and linking the infinite of things in a network. Things like electrical gadgets, sensors, and vehicle electronic equipment could be found here. The system uses sensors to monitor and adjust environmental parameters such as temperature, relative humidity, barometric pressure, and rain level, and then sends the information to a web page, where it is plotted. Data from the deployed system can be accessed through the internet by using a smartphone, laptop, computer, or tablet. Overall, the proposed system has produced good results; the predicted outcomes can be accomplished with a high degree of accuracy, while adhering to the system's design with the aim of becoming low-cost and user-friendly.

**Block Diagram:**

**NODEMCU 12E**

**TEMPERATURE & HUMIDITY SESNOR**

**BAROMETRIC PRESURE SENSOR**

**RAIN SENSOR**

**R P S**

**I2C 16X2 LCD**

**WI-FI**

**BLYNK IOT SERVER**

**Software Requirement:**

* Arduino IDE
* Proteus Simulator
* Embedded C Language
* Blynk IoT Server

**Hardware Requirement:**

* ESP8266 family NodeMCU 12E Microcontroller
* DHT11 Sensor
* Barometric Pressure Sensor (BPM)
* Rain Sensor
* I2C 16x2 LCD