**3118- ENVIRONMENTAL MONITORING**

# INNOVATION AND CIRCUIT DESIGN

# Phase 2: Innovation

After thorough research and analysis, we arrived at an innovative solution to solve the above problem as detailed in phase 1 of our project.

We will be using the **ESP32 micro controller** these suit the best for our project.

We chose this because we only need temperature and humidity data and post it to a public platform

* **Sensor**

1. Digital Humidity and Temperature Sensor –DHT11 or DHT22.

Install a basic weather station with temperature sensor and humidity sensor at a central location in the park.

* **Connectivity**

**Use a ESP32 microcontroller to connect to the weather station and collect data**

1. WIFI

2. LORA

* **Cloud**

**Use the ADAFRUIT cloud to store the data.**

1.Ada fruit IO

* **Protocol**

**Program the iot device in python to collect data from the weather station.**

**Update the data at regular intervals (eg. At every 15 minutes).**

**Here the message queuing telemetry transport protocol is used.**

1. MQTT

* **Mobile compatibility**

Ensure that the web page is mobile responsive so visitors can access the web page quickly.

* **Accessibility**

**Provide a QR CODE at the park entrance that visitors can scan to access the web page quickly.**

**Block diagram**

ENVIRONMENTAL SENSORS

DHT11 OR DHT22

ESP32 MICROCONTROLLER

POWER SUPPLY

PROTOCOL (MQPP)

CLOUD (ADAFRUIT IQ)

INTERNETCONNECTIVITY