

**DEPARTMENT OF APEX INSTITUTE OF TECHNOLOGY**

PROJECT PROPOSAL

**Project Title:** Data-Driven Rainfall Prediction System using IoT and Machine Learning

# Project Scope:

* Observe, measure, and record the basic elements of weather with respect to rainfall.
* Observe, measure, and record data on the basic elements of rainfall over a period of time (i.e., precipitation, air temperature, wind speed and direction, and air pressure).
* Interpret recorded rainfall data for simple patterns.
* Observe and record effects of air temperature on precipitation (e.g., below freezing results in snow, above freezing results in rain).
* Graph recorded data to show daily and seasonal patterns in rain.
* Evaluate rainfall predictions based upon observational data.
* Predict rainfall and justify prediction with observable evidence.
* Evaluate the accuracy of professional weather forecasts using machine learning algorithms.

# Hardware Requirements:

* Node MCU (ESP-8266)
* DHT11 Humidity Sensor
* V-Rain Drop Sensors
* LDR Sensors
* Breadboard

# Software Requirements:

* Google Collab
* Rainfall Dataset for reference

# STUDENTS DETAILS:

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| --- | --- | --- |
| **Name** | **UID** | **Signature** |
| Bhanu Yadav  (Team Leader) | 20BCS6105 | Bhanu |
| Siddharth Singh | 20BCS6103 | Siddharth |
| Ananya Singh | 20BCS4585 | Ananya |

**APPROVAL AND AUTHORITY TO PROCEED:**

We approve the project as described above, and authorize the team to proceed.

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| **Name** | **Title** | **Signature**  **(with date)** |
| Dr. Gaurav Soni | Project Supervisor |  |