# DEPARTMENT OF APEX INSTITUTE OF TECHNOLOGY

# PROJECTPROPOSAL

## 1. Project Title: - IOT Irrigation Monitoring & Controller System

## 2. Project Scope: - (Max 500 words)

The scope of this project encompasses the design, development, and implementation of an Internet of Things (IoT)-based smart water supply system tailored for agricultural applications. With a focus on simplicity and effectiveness, the project aims to address the pressing need for efficient water management in farming practices. The project scope can be outlined as follows:

**1. System Architecture:**

The project will involve designing a scalable and adaptable system architecture capable of accommodating a network of Raspberry Pi units, moisture sensors, actuators, and a central server. The architecture will ensure seamless communication and data exchange between these components, enabling real-time monitoring and control of the water supply.

**2. Hardware Implementation:**

Strategic deployment of hardware components, including Raspberry Pi units and moisture sensors, will be carried out across the farm. The hardware implementation will involve careful consideration of factors such as sensor placement, power supply, and connectivity to ensure optimal performance and coverage.

**3. Sensor Integration:**

The project will focus on integrating moisture sensors into the agricultural landscape to gather real-time data on soil moisture levels. These sensors will be strategically positioned to provide comprehensive coverage and accurate readings, enabling precise irrigation control.

**4. Communication System:**

A robust communication system will be developed to facilitate seamless data transmission between the deployed sensors, Raspberry Pi units, and the central server. Wireless communication protocols will be utilized to ensure reliability and efficiency in data exchange.

**5. User Interface Development:**

An intuitive user interface will be developed to provide farmers with easy access to real-time moisture data and control options. The user interface will be accessible through web and mobile applications, offering visualizations of soil moisture levels and intuitive controls for adjusting irrigation settings.

In summary, the project scope encompasses the design, development, and implementation of an IoT-based smart water supply system tailored for agricultural use. By focusing on simplicity, effectiveness, and user-friendliness, the project aims to address the challenges of water management in farming practices, contributing to improved efficiency, sustainability, and crop yield.

## 3. Requirements: -

- Hardware Requirements
  1. Soil Sensor
  2. Controller Board (Node MCU)
  3. Other Hardware compo
- Software Requirements
  1. MicroPython
  2.
  3.

## STUDENTS DETAILS

| Name | UID | Signature |
|---|---|---|
| Surya Pratap Singh | 21BCS6258 | |
| Yash Dhasmana | 21BCS6265 | |

## APPROVAL AND AUTHORITY TO PROCEED

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

| Name | Title | Signature (With Date) |
|---|---|---|
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