

# MEASUREMENTS AND INSTRUMENTATION LAB

# MINI PROJECT

# PROGRESS REPORT

# 22/09/2023

|  |  |  |  |
| --- | --- | --- | --- |
| REGISTRATION NO. | NAME | ROLL NO | CLASS |
| 210906204 | **SHASHANK PANDEY** | **26** | **EEE-B** |
| 210906206 | **TITHI MISHRA** | **27** | **EEE-B** |
| 210906130 | **PRAANZAL PRAYAS** | **17** | **EEE-B** |

## PROBLEM STATEMENT

“Design system level solutions or processes for engineering problems that meet the specified needs with appropriate consideration for public health and safety, and/or cultural, societal, and/or environmental considerations with an understanding of the limitations.”

## TITLE OF THE PROJECT

**PLANT CARE SYSTEM – SOIL MOISTURE AND LIGHT INTENSITY LEVEL DETECTOR**

## PROGRESS

1. Created functional Front Panel with DHT11 sensor and connected it with Arduino at COM7.
2. Linked the Front Panel and the Block Diagram
3. Uploaded the Arduino IDE Code on the Arduino UNO Board.
4. Purchased the required Sensors, LEDs and other hardware equipments.
5. Linked the Bolt Wi-Fi device to Bolt Cloud and uploaded the Code for Light Intensity Detection.
6. Created Circuit Diagram for Hardware Connections.

## CHALLENGES FACED

1. **Sensor Accuracy and Reliability:** Ensuring the soil moisture and light intensity sensors are accurate and reliable is crucial. Sensors can vary in quality and may require calibration and maintenance to provide consistent and precise data. One of our sensors has already been found defective.
2. **Data Processing and Analysis:** Collecting data is only part of the solution. Development of program is difficult.
3. **Wireless Communication:** Since our system is IoT-based, ensuring reliable communication between the sensors, the central processing unit, and potentially a user interface can be challenging.
4. **User Interface and Interaction:** Creating an intuitive and user-friendly interface in the front panel of LabVIEW for monitoring and controlling the plant care system can be a significant challenge. It must provide real-time data and allow users to set custom parameters and receive alerts.
5. **Cost Constraints:** Balancing the features and capabilities of the system with the available budget can be a challenge.

## TIMELINE

|  |  |  |
| --- | --- | --- |
| Week | Work Details | Outcome |
| 1 | Definition of the Problem Statement | Decided to do something related to an environment related issue. |
| 2 | * Project Idea * Components to be used * Methodology to be followed * Justification of our Problem Statement | * Construction of Plant Care System * Flowchart of the Solution |
| 3 | * Decision on integration Arduino into LabVIEW * Decision of Bolt Wi-Fi Integration into LabVIEW * Writing the Synopsis * Discussion on the total bill and difficulties to overcome | * Arduino can be integrated through installation of NI VISA * Currently we are yet to figure out about the integration of Bolt Module into LabVIEW * A ready, readable and well-designed Synopsis doc. |
| 4 | * Created a functional Front Panel * Linked the Front Panel and the Block Diagram | * A functional LabVIEW system has been created |
| 5 | * Uploaded the Arduino IDE Code to UNO Board, enabling the Arduino to collect data from DHT11 Sensor * Purchased all required sensors | * Arduino is now able to collect data |
| 6 | * Linked the Bolt Wi-Fi Module to Bolt Cloud for Data transmission * Uploaded the code for Light Intensity detection on Bolt Wi-Fi Module * Created a comprehensive Circuit Diagram for Hardware Connections | * Cloud will now be able to collect data for Light Intensity. * With Circuit Diagram ready, the hardware can easily be created. |