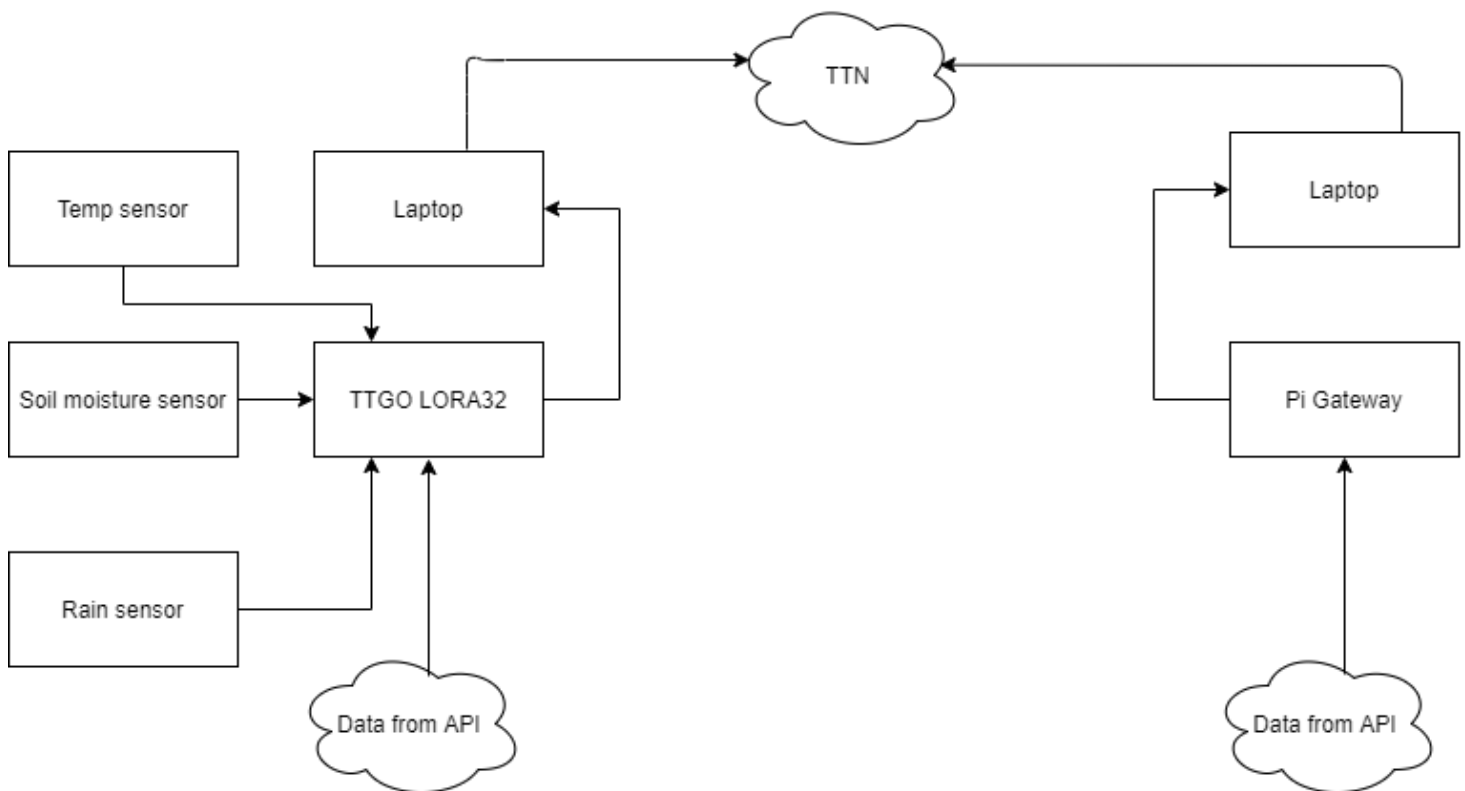


Initial Draft

Introduction:

A smart RIoT (Resilient IoT) irrigation system, that gets data from temperature, soil moisture, and rain sensors based on the data from sensors the decision will be made (Pump water or do not pump water). If the sensors fail to deliver data, the decision will be made from the resilient features.

Architecture Diagram:



Tasks:

Task 1

- **Hardware Configuratuion.**
 - Installation of PI OS in the gateway.
 - Connecting all the sensors to ESP32 .
 - Fixing ESP32 on the breadboard and completing the wiring of sensors.
 - **Responsible team members:**
 - Prashanth K.
 - Prathyum Ramesh

Task 2

- **Reading Data from Sensors.**

- Configured Arduino IDE and Esp32 by installing all dependencies
- Writing code for collecting the data from individual sensors.
- Integrating all the sensor code into one .INO file.
- Processed the incoming data from sensors and producing required results.
- **Responsible team members:**
 - Prathyum Ramesh
 - Rupesh
 - Prashanth

Task 3

- **Reading Data from Cloud API**
 - Registering in <https://openweathermap.org/> and generating API Key.
 - Arduino Code for collecting data from the cloud using the API key.
 - **Responsible team members:**
 - Mohammadreza
 - Somrita

Task 4

- **Connecting to TTN**
 - Registering the lora gateway in TTN www.thethingsnetwork.org .
 - Registering the TTGO Esp32 in TTN .
 - **Responsible team members:**
 - Prathyum Ramesh
 - Somrita
 - Rupesh
 - Mohammadreza

Task 5

- **Communication between TTGO Esp32 and LORA gateway via TTN .**
 - Setting up MQTT protocol to enable message transfer.
 - **Responsible team members:**
 - Prathyum Ramesh
 - Somrita
 - Rupesh
 - Prashanth K.
 - Mohammadreza

Task 6

- **Resilience**

- Overriding the faulty sensors data with the API data from the cloud.
- Saving the data from sensors until we get an ACK from PI and resend after a period of time if we don't receive the ACK .
- **Responsible team members:**
 - Prashanth K.