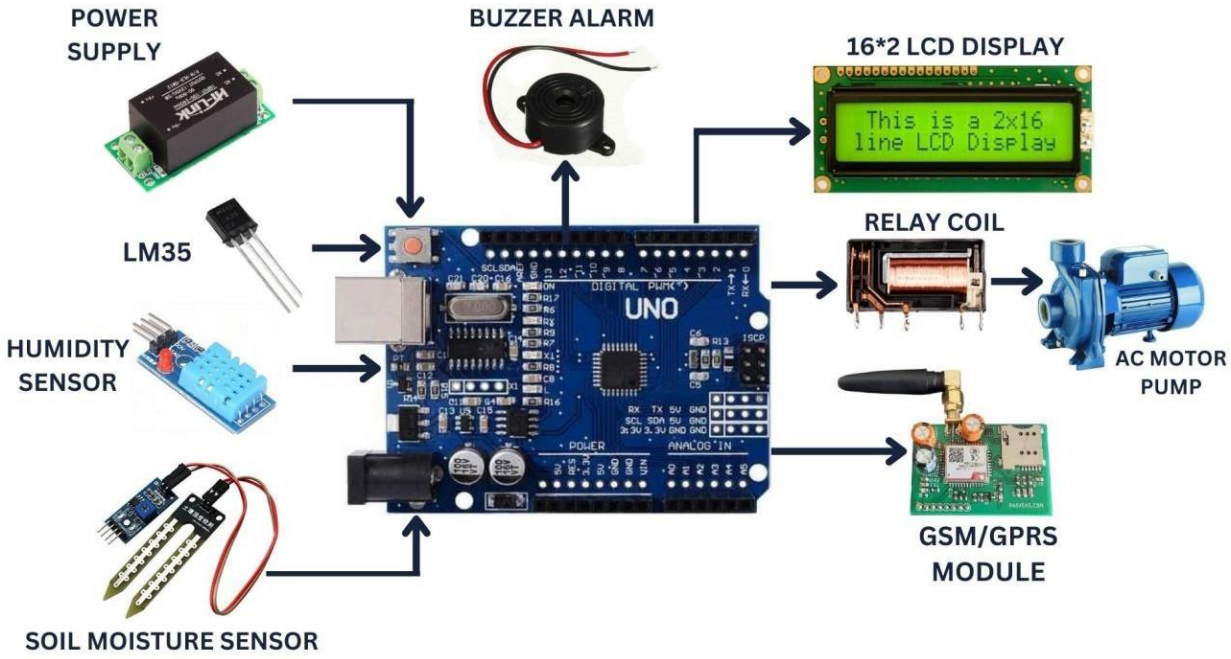
Project Design Phase-I
Solution Architecture

Date	19 September 2022
Team ID	PNT2022TMID32919
Project Name	Project - Smart Farmer – IOT Enabled Smart Farming Application
Maximum Marks	4 Marks

SMART FARMER-IOT ENABLED SMART FARMING APPLICATION

Farmers will benefit from the proposed solution by receiving real-time data (temperature, humidity, and soil moisture) from the farmland, allowing them to take the appropriate actions to practice smart farming while also increasing crop yields and conserving resources (water, fertilizers).



The architecture of proposed system consists of various blocks:

SENSORS

The soil moisture sensor measures the soil's moisture content. The humidity and temperature sensor measures the atmosphere's humidity and temperature to determine whether the crop can grow. The soil moisture sensor, humidity sensor, and temperature sensor send real-time data to mobile devices while continuously monitoring the soil and environmental conditions.

ARDUINO UNO

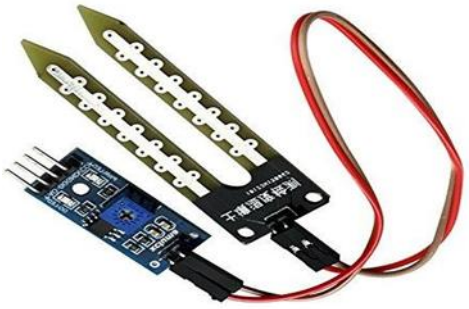
The system's brain is an Arduino Uno. The information gathered using the sensors is transmitted to the Arduino UNO. The gathered data may be shown in an Arduino IDE.

TEMPERATURE SENSOR

In various farm conditions, the temperature sensor measures the ambient temperature of the farm.

SOIL MOISTURE SENSOR

Agriculturalists can estimate the water levels without being physically present in the field thanks to a soil moisture sensor.



HUMIDITY SENSOR

Electronic devices called humidity sensors measure and record the humidity and air temperature of the immediate environment.

GSM / GPRS MODULE

To enable messaging service that updates the farmer on the current weather conditions of the subject, a GSM module is connected to the Arduino. When a comparison yields a positive or negative result, a message is sent to the farm's owner using a GSM module. If the result is positive, a message is sent via GSM to the farm owner indicating the presence of a wild animal.

AC MOTOR PUMP

Water from the well will be pumped by this pump and delivered to the farmland.

BUZZER ALARM

The project system is capable of taking a picture. To keep animals out of fields, do this. Animals can clearly hear the buzzer, which is introduced. Only after animals are discovered on the farm is the buzzer turned on automatically.

16*2 LCD DISPLAY

A LCD display is used to display the functioning of the project at anygiven time.