Phase 2:Innovation

After through research and analysis, we arrived at an innovative solution to solve the above problem as detailed in phase1 of our project.

Lowest cost Smart Garden includes Nedelcu as a hub. NodeMCU is an open source IoT platform. It runs on ESP8266 Wi-Fi SoC from Espess if Systems, and hardware based on the ESP-12 module available at low cost.

Sensors used in smart gardening:

The devices which converts the electrical signals into digital signals are known as sensors. The different types of sensors incorporated in this system are listed below.

• Humidity sensor – used to measure the humidity content of the soil

• Temperature sensor – used to measure the temperature of the soil.

• Ultrasonic sensor – used to measure the water level in the tank.

• Moisture sensor – used to measure the moisture content of the soil.

Component of smart gardening:

1. PROPOSED SYSTEM :

• It usually consists of a central microcontroller to which other objects are connected. The smart garden consists of NodeMCU as a hub to which different types of sensors such as moisture sensor, humidity sensor, temperature sensor and ultrasonic sensor are connected.

• The ultrasonic sensor is connected to a water tank which indicated the level of water in the tank. Other sensors are connected to their respective positions and these sensors send the data to NodeMCU which consists of an inbuilt Wi-Fi technology.

2. NODEMCU :

• Smart Garden includes NodeMCU as a hub. NodeMCU is an open source IoT platform. It runs on ESP8266 Wi-Fi SoC from Espessif Systems, and hardware based on the ESP-12 module available at lowest cost.

• It is a Single – board microcontroller consists of 128kBytes of memory and 4Mbytes of storage. It was designed to for easy programming and allows easy prototyping for developers.

3. ARDUINO :

• The program for NodeMCU can be written in any programming language. The Arduino software provides a better Integrated Development Environment (IDE) for programming the NodeMCU. It is a cross-platform application written in Java.

•This software consists of various features which include code editor, text cutting and pasting, replacing text and searching, brace matching, automatic indenting, and syntax highlighting.

CONCLUSION :

The implementation of Smart Garden system using the Internet of Things has been verified to satisfactorily work by connecting different parameters of the soil to the cloud and was successfully controlled remotely through a mobile application.