**2.1 Literature Survey**

In irrigation field, soil moisture sensor, temperature sensors are placed in root of plant and microcontroller handles the sensor information and transmits data. One algorithm was developed to measure threshold values of temperature sensor and soil moisture sensor that was programmed into a microcontroller to control water quantity.[1]

A model of automatic irrigation system which is based on microcontroller and solar power was used only for source of power supply. Various sensor is placed in paddy field. Sensors sense water level continuously and give the information to farmer through cellular phone. Farmer controls the motor using cellular phone without going in paddy field. If the water level reaches at danger level, automatically motor will be off without conformation of farmer.[1]

This system proposes low cost moisture sensor-based data acquisition system required for automated irrigation system. The authors have developed an impedance-based moisture sensor. Sensors works on the change of impedance between two electrodes kept in soil [2].

This system is smart irrigation techniques using internet of things (IOT). In this system sensors are placed in the agriculture field, measures the soil moisture value, water level in the tank and well-water through mobile data communication network. The web servers use intelligent software to analyze the data and act according to the result obtained to perform desired action [4].

**2.2 Related Work**

In this paper, soil moisture sensor, temperature and humidity sensors placed in the root zone of the plant and transmit data to android application. The threshold value of a soil moisture sensor that was programmed into a microcontroller to control water quantity. soil moisture values are displayed on the android application.

This system developed an irrigation control and monitoring system for the farmer on the basis of the internet of things which is used wi-fi modules, Arduino Uno and Android app. This system continuously monitors the parameters moisture of the soil. An algorithm was used with threshold values of soil moisture to be maintained continuously. The system starts or stops irrigation based on the moisture content of the soil. This system proposes a low-cost moisture sensor-based data acquisition system required for the automated irrigation system. The authors have developed an impedance-based moisture sensor. Sensors works on the change of impedance between two electrodes kept in soil [2].

This paper on "IoT based Irrigation Control and Monitoring System on Sensing Soil Moisture Content" is intended to create an automated irrigation mechanism which turns the pumping motor ON and OFF on detecting the state or condition of being slightly wet content of the earth. In this paper, only soil moisture value is considered but the proposed project provided an extension to this existed project by adding temperature and humidity values. [3]

This proposed paper is IoT based irrigation control and monitoring system developed for the agricultural plantation, which is placed at the remote location and required water provides for plantation when the moisture of land of the soil goes below the set-point value. But in this, we did not aware about the soil moisture level so to overcome this drawback proposed system included with extra feature soil moisture value and temperature value which displayed on the farmer mobile application [4].

The system supports water management decision, used for monitoring the whole system using Wi-fi module. The system continuously monitors the moisture - the level of soil and provide an accurate amount of water required for plant or crop. The system checks the moisture-level of soil to retain the nutrient composition of the soil managed for growth of plant [5].

Plenty of research work has been done to improve the performance of agriculture field. In [1] the system uses Arduino technology to control watering and roofing of the green house. It uses statistical data acquired from sensors (like temperature, humidity, moisture and light intensity sensors) compared with the weather forecast for decision making. Kalman filter is usedto eliminate noise from the sensors.