* 1. **Title:**

**“Automated Irrigation System”**

* 1. **Proposed Topic:**we are using various sensors like temperature, humidity, soil moisture sensors which senses the various parameters of the soil and based on soil moisture value land gets automatically irrigated by ON/OFF of the motor. These sensed parameters and motor status will be displayed on user android application
  2. **.Abstract:**

You might have heard that India is a monsoon dependent country. Therefore, rainfall has a huge impact on our agricultural output and even on our economy. But, this isn’t the dark ages. In other words, we now have modern systems that support our farmers and the agricultural sector. For instance, one such practice where we have made advancements is in Irrigation . Irrigation means the watering of land to make it ready for agriculture. It is the process of application of water to crops through artificial channels to grow them. Making use of iot devices and sensor units to make automated irrigation system that automatically irrigates the field with respect to the amount of Soil moisture content present in the soil using soil moisture sensors and central control system. This is achieved by using a smart platform of IoT and solenoid valves to control the flow of water based on the moisture of the soil and gives real time surveillance to the owners who stay far away from the farms.

* 1. **Literature Survey**
* India is mainly an agricultural country. Agriculture is the most important occupation for the most of the Indian families. It plays vital role in the development of agricultural country. In India, agriculture contributes about 16% of total GDP and 10% of total exports. Water is main resource for Agriculture. Irrigation is one method to supply water but in some cases there will be lot of water wastage. So, in this regard to save water and time we have proposed project titled automatic irrigation system using IoT. In this proposed system we are using various sensors like temperature, humidity, soil moisture sensors which senses the various parameters of the soil and based on soil moisture value land gets automatically irrigated by ON/OFF of the motor. These sensed parameters and motor status will be displayed on user android application[1].
* An automated irrigation system for efficient water management and intruder detection system has been proposed. Soil Parameters like soil moisture, pH, Humidity are measured and the Pressure sensor and the sensed values are displayed in LCD. The intruder detection system is done with the help of PIR sensor where the birds are repelled from entering into the field. The GSM module has been used to establish a communication link between the farmer and the field. The current field status will be intimated to the farmer through SMS and also updated in the webpage. The farmer can access the server about the field condition anytime, anywhere thereby reducing the man power and time[2].
* Wireless sensor networks are a promising new technology for monitoring changes with a high spatial and temporal resolution for large areas. However, to realise sensor networks at the small basin scale (e.g. 500 sensors for an area of 25 ha), the costs for a single sensor have to be minimized. Furthermore, the sensor technique should be robust and operate with a low energy consumption to achieve a long operation time of the network[3].
* In traditional method of farming, human labors were required to visit the greenhouse at specific time and need to check the humidity level and temperature level manually. This conventional method is considered time consuming and needs a lot of work and effort. Therefore this research focuses on developing a system that can remotely monitor and predict changes of temperature level in agricultural greenhouse. The objective of the research is to develop a remote temperature monitoring system using wireless sensor and Short Message Service (SMS) technology[4].
* Drip irrigation is artificial method of supplying water to the roots of the plant. It is also called micro irrigation. In past few years there is a rapid growth in this system. The user communicates with the centralized unit through SMS.The greenhouse based modern agriculture industries are the recent requirement in every part of agriculture in India. In this technology, the humidity and temperature of plants are precisely controlled. Due to the variable atmospheric circumstances these conditions sometimes may vary from place to place in large farmhouse, which makes very difficult to maintain the uniformity at all the places in the farmhouse manually. It is observed that for the first time an android phone-control the Irrigation system, which could give the facilities of maintaining uniform environmental conditions are proposed.

The system continuously monitors the water level in the tank and provide accurate amount of water required to the plant or tree (crop)[5].

* NodeMCU is an open source and LUA programming language based firmware developed for ESP8266 wifi chip. Espruino , Mongoose OS, software development kit (SDK) provided by Espressif, ESP8266 add-on for Arduino are a few of development platforms that may program the ESP8266. ESP8266 may be used to either host the application or to offload all Wi-Fi networking functions from another application processor through its self contained Wi-Fi networking solution. ESP8266 has powerful on-board processing capabilities and sufficient storage that allow it to be integrated with minimal development up-front and minimal loading during runtime through its GPIOs(General Purpose input/output) with the sensors specific devices. ESP8266 has very low cost and high features which makes it an ideal module for Internet Of Things (IoT). It can be used in any application that require it to connect a device to local network or internet[6].
* To water the plants automatically, sensors and Microcontrollers are available to determine when the plants needs water. Automation involves improving the speed of production, reduction of cost, effective use of resources. The main role of this project is to develop a Microcontroller system to irrigate the plant automatically and the information is been sent to the farmers.

**References:**

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