Iot based Smart irrigation

Abstract:

Modern digitalized era of our 21st century needs automation in each and every sector. Combining technology to increase the credibility of an another technology is not at all a very good idea. India is a country where agriculture is the main and vast field for our national financial system. So we have tried to implement the fruitfulness of technology to combine with agricultural field so that the growth of crops can increase exponentially. Irrigation is the methodology of misleadingly supplying water to land where harvests are developed. Generally hand pumps, channel water and precipitation were a significant wellspring of water supply for watering system. This strategy has prompted serious disadvantages like under watering system, over-watering system which thus causes filtering and loss of supplement substance of soil. Changing ecological conditions and lack of water have prompted the requirement for a framework which effectively oversees watering system of fields. Computerized watering system framework is a machine based framework, which robotizes the watering system of area by joining different programming and equipment approaches together for field watering system.

Introduction:

At present there is emerging global water crises where managing scarcity of water has become a tedious job and there are conflicts between users of water. This is an era

where human use and population of water resources have crossed the levels which lead to limit food production and low down the ecosystem.

The main reasons for this limitation is the growth of population which is increasing at a faster rate than the production of food and after a few years this population will sum up to 3-4 billion. This growth can be seen in countries which have shortage of water resources and are economically poor. Because of growth in population there is a huge demand to raise food production by 50% in the next half century to maintain the capital, based on an assumption that productivity of existing farm land does not decline. The crop water stress index called as CWSI existed around 30 years ago. This crop water stress index was then integrated using the measurements of infrared canopy temperatures, ambient air temperature and atmospheric vapor pressure values to determine when to irrigate using irrigation. Different communication technology has been developed for communication between network and its elements. The key points this project minimizing water wastage during irrigation along with maximizing water utilization with intelligent irrigation techniques. This part of the presentation concerns with the Soil moisture based intelligent irrigation technique that reduces crop mortality due to over irrigation as well as judicious water usage.

Block Diagram:
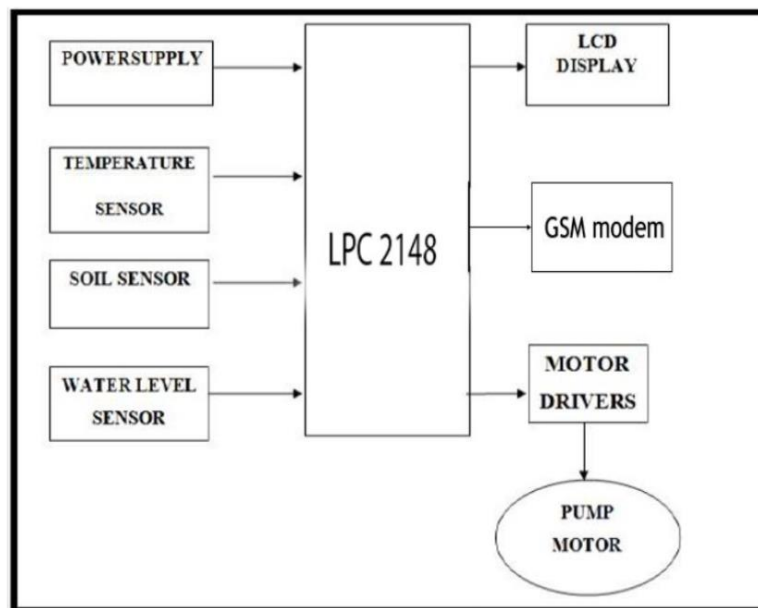
Conclusion:

This project presents the optimized results for designing a soil moisture sensor based automated water irrigation system. this system avoids over irrigation, under irrigation, top soil erosion and reduce the wastage of water. The main advantage is that the system's action can be changed according to the situation (crops, weather conditions, soil etc.). By implementing this system, agricultural, horticultural lands, parks, gardens, golf courses can be irrigated. Thus, this system is cheaper and efficient when compared to other type of automation system. In large scale applications, high sensitivity sensors can be implemented for large areas of agricultural lands. A stand by battery or solar cells can be implemented which comes into use in case of power cuts. The GSM technology has been used for long distance wireless communication. The proposed system eliminates the manual switching mechanism used by farmers or users to ON/OFF an irrigation or similar watering system.