Project Name: IoT Smart Watering System

Introduction:

Water is a resource that all living species need. It is therefore very precious and has to be used with moderation to be preserved for the generations to come. In the era of science & technology we are still using conventional watering system to water plants. In traditional watering system all the steps are executed by humans. So in this way we need a number of manpower for working purpose. Most of the time, this watering system is not efficient and substantial amounts of water are wasted.

In this circumstances we need a system that can reduce manpower and waste of water. Automated watering system using IOT is such a system that can reduce both manpower & waste of water. The proposed system is fully automated & can be controlled and monitored remotely.

Feasibility Study:

We have studied long time about the project. To develop the automated system over existing system first challenge is to build the project with existing technology. For our project it is possible to build the project using existing technology. As our project requires technologies such as basic hardware equipment namely Arduino Uno & so on, Wireless technology. Since such technologies are available, it is possible to build the project with existing technologies. Another challenge is to make the project budget friendly. As we need almost 4k taka to develop the project & cost can be lessened during manufacturing phase, the project is profitable. Our project also requires less time to develop.

Benefits of proposed system:

- Reduce waste of water
- Reduce manpower
- Reduce watering cost
- Require less power consumption
- Require less maintenance

- Reliable
- Expandable
- User-friendly

Required Technology:

Hardware Technology:

- Arduino Uno
- Water Pump
- Wi-Fi Module
- Breadboard
- Connecting Wire
- Power sources
- Diodes
- Transformer
- Relay
- Computer or Mobile Device

Programming Technology:

- Objective C
- HTML
- CSS
- PHP
- MySQL

Implementation:

We have used Arduino Uno microcontroller to program our project using objective C programming language. We have used soil moisture sensor to get moisture value in soil. We have used mini pump to water plant. For sending sensor value from Arduino to sever we have used esp8266 WiFi Module. For monitoring system functionality we have used web based monitoring system. To build web based monitoring system we have used HTML & CSS for client side and PHP & MySQL for server side.

Conclusion:

"IoT Smart watering System " has been designed and tested successfully. It has been developed by integrated features of all the hardware components used. Presence of every module has been reasoned out and placed carefully, thus contributing to the best working of the unit. Thus, the IoT Smart Watering System has been designed and tested successfully. The system has been tested to function automatically. The moisture sensors measure the moisture level (water content) of the different plants. If the moisture level is found to be below the desired level, the moisture sensor sends the signal to the Arduino board which triggers the Water Pump to turn ON and supply the water to respective plant. When the desired moisture level is reached, the system halts on its own and the Water Pump is turned OFF. Thus, the functionality of the entire system has been tested thoroughly and it is said to function successfully.