

Project description:

Wireless sensor networks technology enables completely new capabilities for measurement and control applications. It is expected to create significant impact on our lives in the coming decade. Various applications of wireless sensor network include environmental monitoring, natural disaster prediction, precision agriculture, and health care.

Generally, wireless sensor networks consist of a large number of densely deployed small sensor nodes with sensing, computation and wireless communication capabilities. A wireless sensor network is used to monitor and recording the physical conditions of the environment and organizing the collected data at a central location. WSNs measure environmental conditions like temperature, sound, pollution levels, humidity, wind, and so on.

The general scope of the proposed project lies in the field of agricultural development using wireless sensor networks. In particular, the project focuses on design automated irrigation system. In this project, we aim to replace the old irrigation systems with more efficient one to avoid waste of water, improve the quality of the crops and increase the productivity of the farms.

The project will also protect human from the effects of chemical Fertilizers that may cause negative effects on the human health. Fertilizers will be added to plants using the automated irrigation system.

From the economic perspective; this technology will be more economical than the traditional methods of irrigation. It will decrease the number of workers. The major benefits of this project are expected to positively influence the agriculture sector.

The selected team will be responsible for:

- Using Micro controllers and platforms like Arduino & raspberry Pi to create the network nodes
- Using Wi-Fi, XBEE and Bluetooth modules to connect the nodes together.
- Create desktop application to monitor the network activities.

Required skills:

- Strong embedded C programming skills.
- Strong C++ programming skills.
- good communication skills and know how to work as a team
- Experience in using Arduino or Raspberry Pi is a plus
- Experience in developing application using C# or java is a plus.