Smart Irrigation System

Project Domain / Category

Web Application/Android Application, Artificial Intelligence

Abstract/Introduction

A smart irrigation system is an artificial intelligence (AI) based web application or android application in which an expert system will be built by using any AI algorithms automatically. In this system, it will be considered the fuzzy logic or any artificial intelligence approach to solving the watering system problem. This crop watering system utilizes any logic to determine how long the system must be open the water tap. This system accepts input in the form of three values, namely the value of temperature in the Celsius unit and the value of humidity in percentage and soil moisture in percentage (like getting real-time data from sensors). The output will produce one value that is the duration in minutes the tap must be opened.

Functional Requirements:

1. The application should have a graphical user interface which has admin interface (student can select option such as web application or android application)
    a. The Admin should be login with a valid username and password.
    b. Admin should manage all activities of input and output parameters on the GUI interface.
2. There are seven major tasks you will typically perform when developing a fuzzy logic expert system. Tasks (2-7) should be implemented internally while developing the system.
        i. Task 1: Define the problem(Student should firstly select one specific crop or plant)
        ii. Task 2: Define Linguistic Variables
        iii. Task 3: Define Fuzzy Sets
        iv. Task 4: Define Fuzzy Rules
        v. Task 5: Build system
        vi. Task 6: Test System
        vii. Task 7: Tune System
3. The application should be used a knowledge-based system with the Fuzzy algorithm (Specifically select crop or any plant then build the rules or knowledge-based according to that plant)
4. The application should be used to manage reports weekly basis.
5. The admin should manage and view all backup records.
6. The admin should view the performance of crops weekly basis and update knowledge based on the requirement.

Note: Skype sessions must be attended to communicate with the supervisor about AI approaches otherwise project will not be accepted.

Tools: Python or C# or Java language but firstly should discuss with supervisor via email

Prerequisite: Artificial intelligence Concepts

Supervisor:
Name: Saima Munawar
Email ID: saima.munawar@vu.edu.pk
Skype ID: saima.vu1