Particulars and Project Information

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REGISTRATION NO:NIT/BCS/2025/2025

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TITLE: SMART IRRIGATION SYSTEM

PROJECT TYPE:EMBEDDED SYSTEM AND IOT PROJECT

Background

Agriculture plays a major role in food production, but traditional irrigation methods rely on manual watering, which often leads to water wastage and uneven crop growth. With climate change and water scarcity increasing, there is a need for smarter and more efficient irrigation methods.

Problem Statement

Farmers using manual irrigation often apply too much or too little water, leading to water wastage, increased costs, and reduced crop yield due to lack of proper soil moisture monitoring.

Significance of the Project

The smart irrigation system will help farmers conserve water, reduce irrigation costs, and improve crop productivity by ensuring crops receive the right amount of water at the right time. It also supports sustainable agriculture and environmental conservation.

Main Objective

To design and develop a smart irrigation system that automatically controls water supply based on soil moisture levels.

Specific Objectives

i. To design a soil moisture sensing mechanism.
ii. To develop an automated water control system using sensors.
iii. To implement a mobile or web interface for monitoring irrigation.
iv. To test the system's efficiency in reducing water usage.

Scope of the Project

The project will focus on automating irrigation for small-scale farms using soil moisture sensors and a microcontroller. It will not cover large-scale commercial farming or advanced weather prediction systems.

Q&A

Thank you for your attention.

I welcome any questions or suggestions regarding this project.