



SMART AGRICULTURAL SYSTEM



INTRODUCTION

The goal of the Intelligent Agricultural System project is to find an automated solution to govern agricultural conditions. Thanks to this system of IoT devices, relays and sensors to enhance agricultural mobility by providing data in reality, smartphone-to-smartphone calls and calls.

COMPONENTS

ESP32 microcontroller

Act as a central unit to process data, control devices, and connect to the Internet for IoT functions.

The built-in WiFi and Bluetooth technology makes it ideal for IoT applications.

Soil moisture sensor

It measures the moisture level in the soil, ensuring that plants get the right amount of water.

Temperature and humidity sensor

Monitors environmental temperature and humidity to maintain ideal growing conditions.



Fan

Provides ventilation to maintain proper temperature and humidity levels.

Water pump

It automates irrigation by delivering water based on soil moisture levels.





The "Smart Agricultural System" project is an innovative solution aimed at enhancing agriculture using modern technologies such as IoT and sensors. The system automatically monitors agricultural conditions, such as soil moisture, temperature, and environmental humidity. It relies on the ESP32 unit, which acts as a central processor to manage data and control devices like the water pump and fan via relay modules. The system enables automated irrigation and ventilation based on real-time sensor data, ensuring precise fulfillment of plant needs. Additionally, users can receive alerts and monitor the system remotely through their smartphones. This project enhances agricultural efficiency, reduces waste, and supports the sustainability of natural resources.



THANK YOU

Lina Bashawayah
Areej Al-Ruwaili
Hanin AL-Youbi
Wasal Al-Jahni
Gram Al-Sharabi