

# Automated Greenhouse

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# Project Overview

- Why: Plants are a popular hobby and we wanted to make their care more efficient.
- Problem: It easy to forget about plants. It could also be used at a higher level for more sustainable farming.
- Goal: Create a greenhouse that can be tracked with an app and controlled remotely with an automatic or manual watering system

# Key Concepts and Related Work

- Raspberry Pi
- Sensors
- Mobile app
- Database



- It's been done several times but we are incorporating a mobile app

# Requirements and Use Cases

- A greenhouse will be built that can be controlled remotely
  - The greenhouse will have a water pump connected to the Raspberry Pi
  - Each plant shall have a moisture, temperature, and light sensor
  - Each of these sensors will send data to the Raspberry Pi
  - A Raspberry Pi will be programmed to send and receive data
  - A database will be created to manage and store the data
  - We will program a mobile app to retrieve data from the database
  - The user will be able to read the status of the sensors
  - We will use that data to be able to manage the greenhouse
  - The user will be able to manually or automatically water with the app
- User sends data
  - User receives data
  - User creates timer-based watering schedule
  - User selects sensor-based watering schedule

# High Level Architecture and Risks

Three main components:

- Mobile
- Database
- Embedded systems

Risks:

- Code/Hardware errors
- User errors