Humidity and Temperature Sensing System

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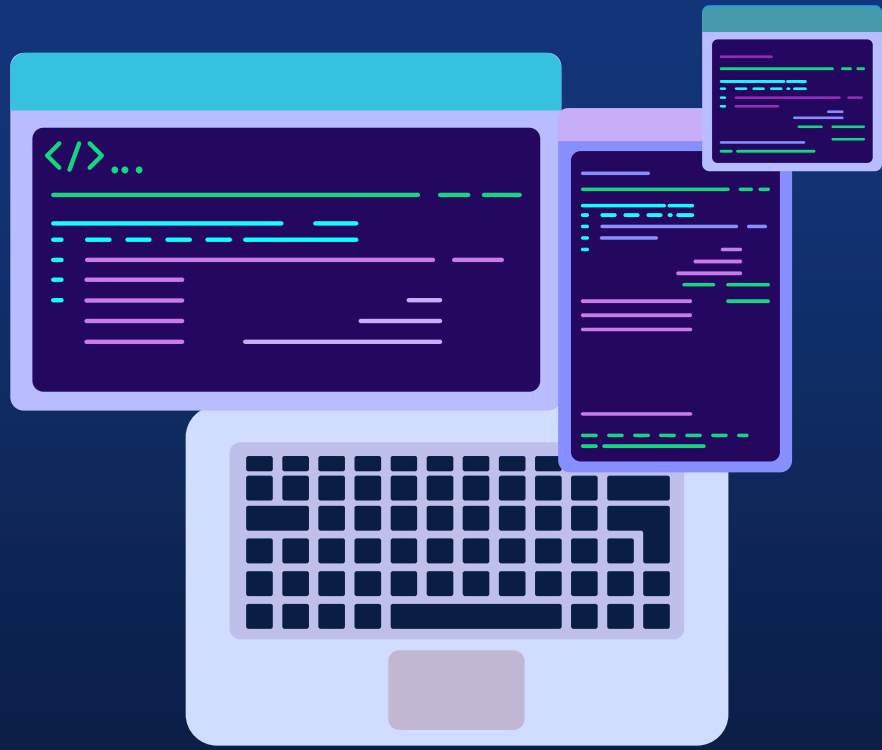
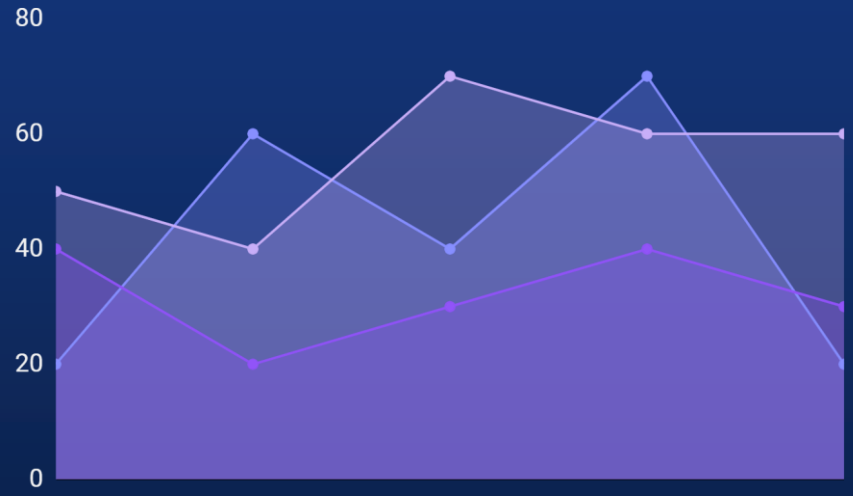


Project Background



- Monitoring the temperature to ensure it is maintained at an ideal level of 27 °C.
- Set the Minimum and Maximum Temperature
- Temperature and humidity have an inverse relationship.

01

System Architecture

Major Components

Raspberry Pi

The application is running as data is being gathered from the sensor, and it will then go through its decision-making process to decide what the fan should do

Python

While loops were used in the programming to create the cases. If the temperature had risen/fallen it would run through a series of different scenarios.

Servo Motor & DHT11 sensor

Measures temperature and humidity, and the Servo Motor (Fan) is automatically turned on/off by the program.

Use Cases:

UC-01

Increase in temperature

The system to checks for sudden increases in humidity or temperature. When the temperature or humidity hasn't returned to normal, the system collects the data and turns on the fan.

UC-02

Decrease in Temperature

When there is an abrupt fall in temperature and humidity, and when it hasn't returned to normal. The user would receive a warning to close the door to the green house.

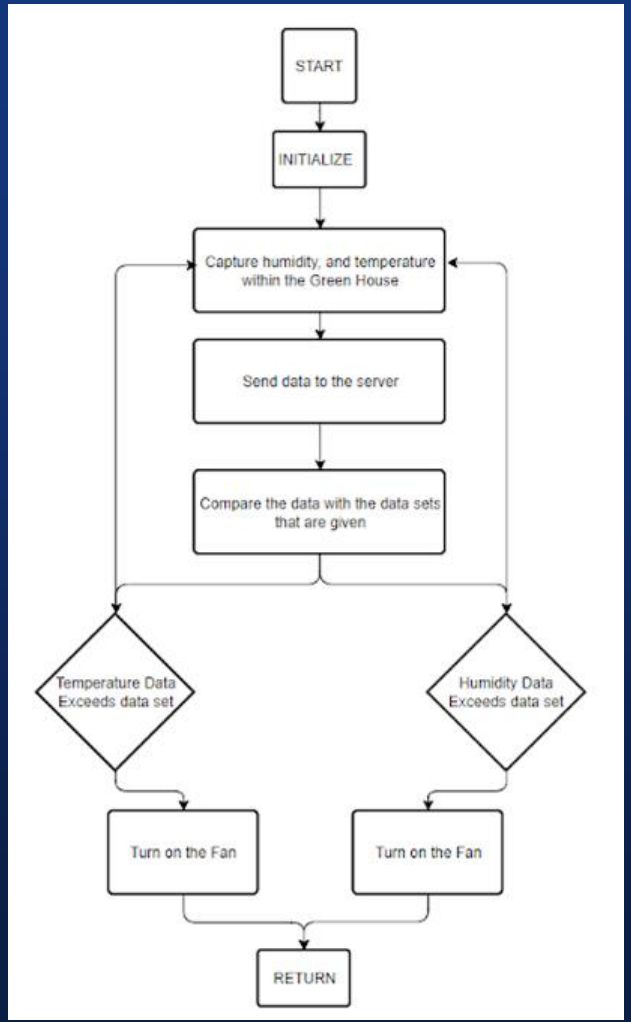
UC-03

Stable environment

While data is being gathered and the environment hasn't changed all that much. The user could assess the app's stability by checking it.

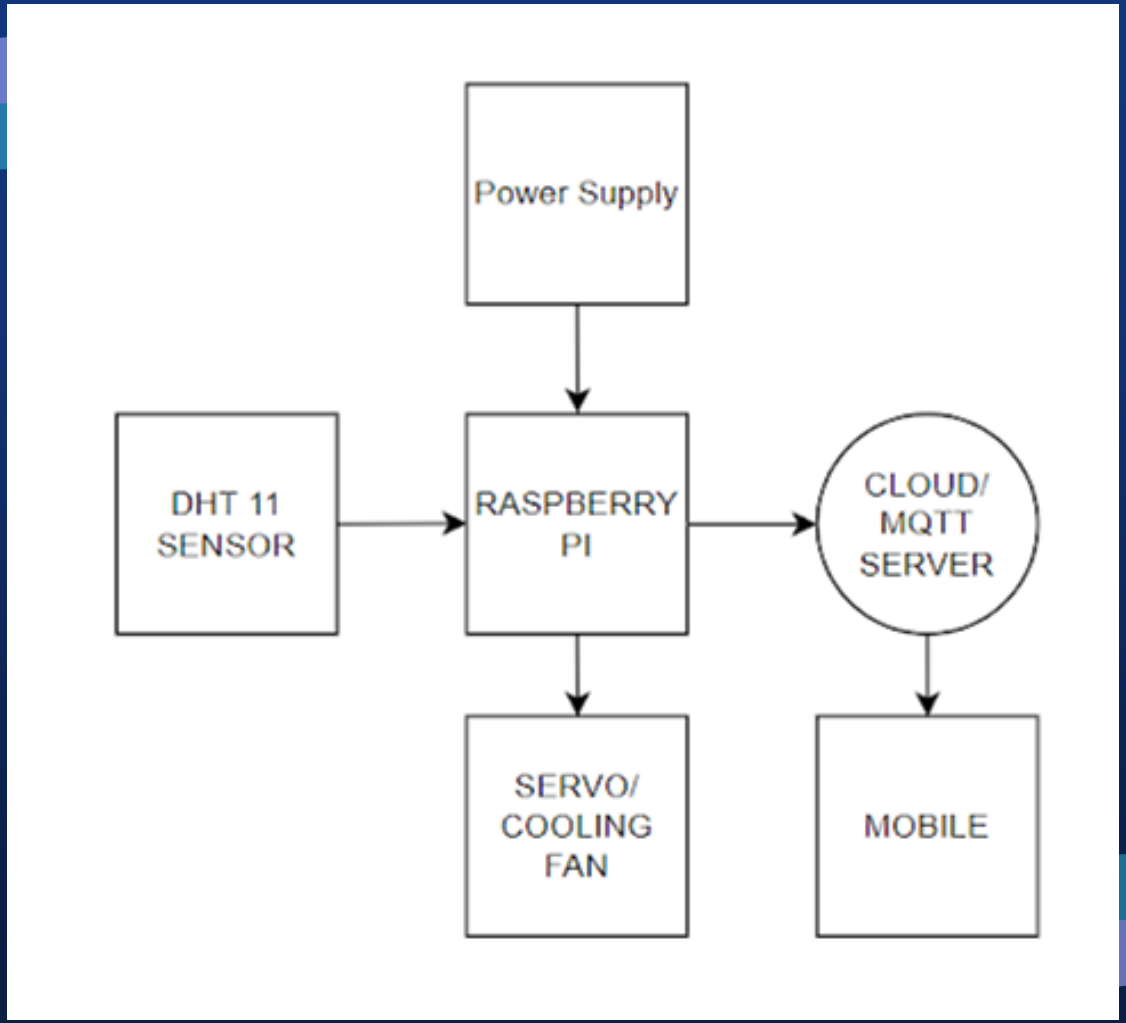
02

Flow Chart


START
INITIALIZE
Capture humidity, and temperature within the Green House
Send data to the server
Compare the data with the data sets that are given
Temperature Data Exceeds data set
Humidity Data Exceeds data set
Turn on the Fan
Turn on the Fan
RETURN

03

Device Demonstration Diagram


Power Supply
DHT 11
SENSOR
RASPBERRY
PI
CLOUD/
MQTT
SERVER
SERVO/
COOLING
FAN
MOBILE

04

Device Demonstration Video

https://drive.google.com/file/d/16koKhkYqnLJlhGhguqknjO1JHCBy_ARm/view?usp=share_link