

IoT Project Team - 4

Personalised Climate Control System

Creating Comfort Through Innovation



K N Akthar
Rohan Kumar
Akmal Ali
Himank Singhvi

A photograph of a modern, bright office interior. The space is filled with large windows on the right side, letting in natural light. The office is furnished with several green sofas and armchairs, some with wooden coffee tables. Large potted plants are placed throughout the room, adding a natural touch. The ceiling features exposed ductwork and modern lighting fixtures. The overall atmosphere is clean, bright, and inviting.

MOTIVATION

- Personalization
- Improve comfort and energy efficiency
- Utilize real-time data for dynamic control





SOLUTION

Our solution integrates DHT11 and BMP280 sensors to collect real-time temperature, humidity, and air pressure data. This data is used to dynamically control fan speed, vent positions, and LED ambiance, ensuring a comfortable and energy-efficient environment.



SENSORS

- DHT11
- BMP280 Air Pressure



ACTUATORS

- Cooling Fan
- Servo Motor
- LEDs



CONTROL

- Fan Speed
- Vent Position
- Light Ambience

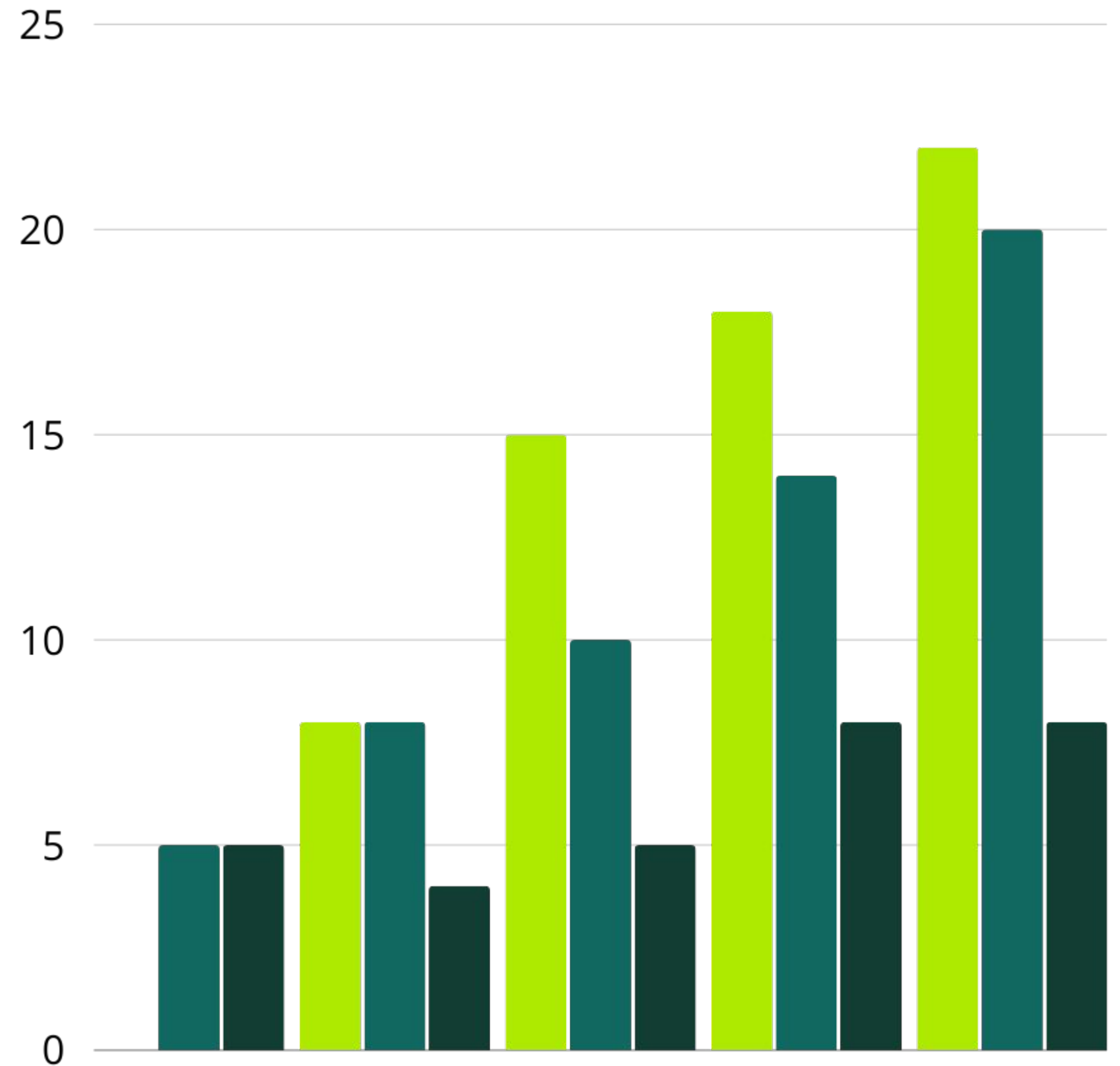


DATA

Web Dashboard

DATA ANALYSIS

- Collected sensor data is used to control the fan, adjust vent positions, and set room ambiance.
- Two DHT11 sensors are employed to measure temperature and humidity.
- The values from the two DHT11 sensors are averaged to improve accuracy.
- Calculating the average of two temperatures from the DHT11 sensors enhances system stability and control precision.
- Threshold values for temperature, humidity, and air pressure are established based on the sensor data.



FAILURE ANALYSIS OF PROTOTYPE

- Challenges: Sensor Calibration and User Control
- Solutions: Apply Trial and Error Method and Continuous Testing in different rooms

FURTHER WORKS



01



Air Purification

03



User Control through Website

02



Optimization based
on Occupancy

04



Window Blinds

THANK YOU



K N Akthar

Rohan Kumar

Akmal Ali

Himank Singhvi