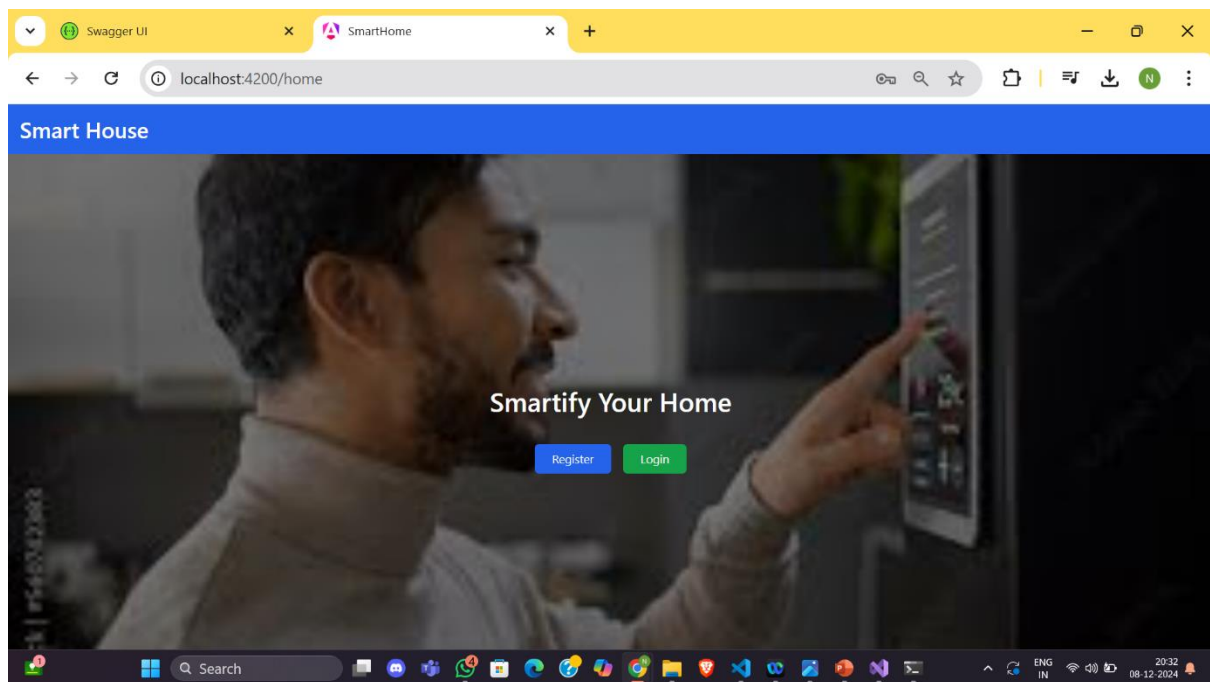


Smart Home Automation System Docs

Home page :

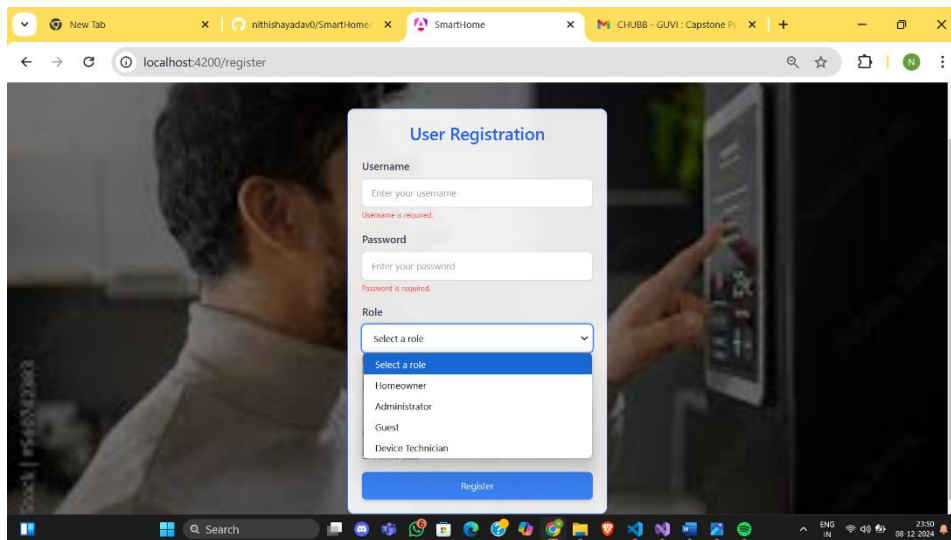
This is the Home page



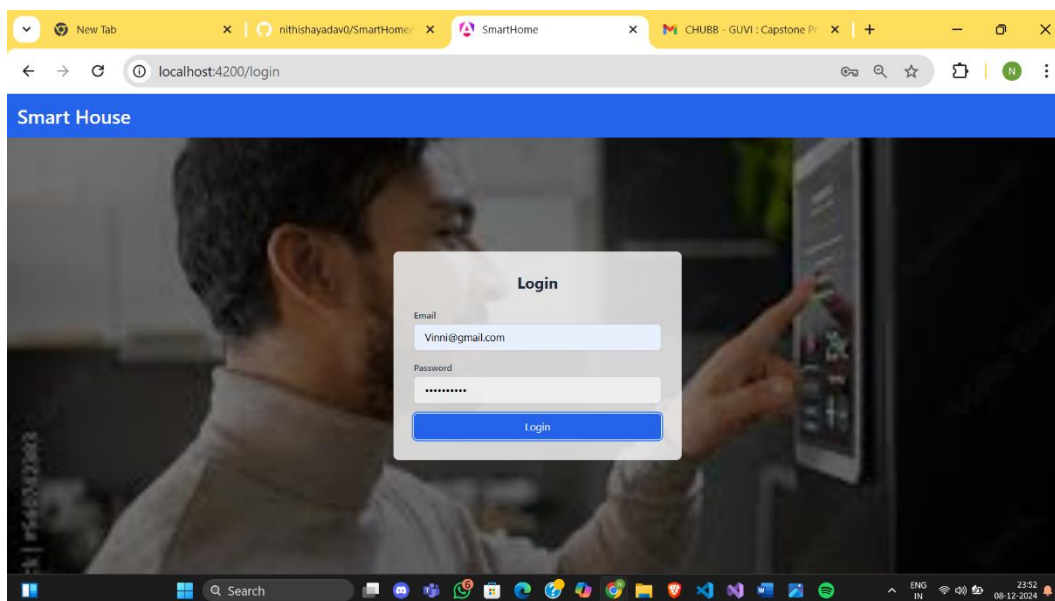
1. User Authentication:

- Implement a secure login system for different user roles Homeowner,Administrator,Guest,Technician

Registration page:This is the registration page Where we can sign in for our specific user



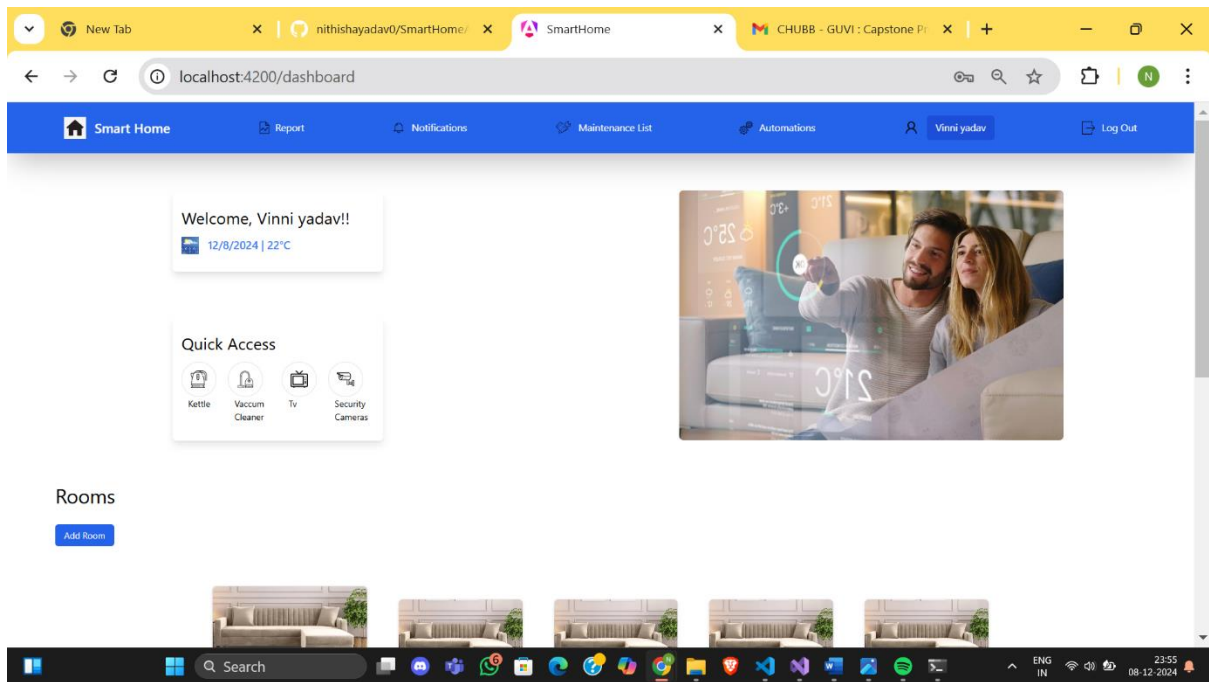
User Login:



Features In Home Owner:

Dashboard of HomeOwner

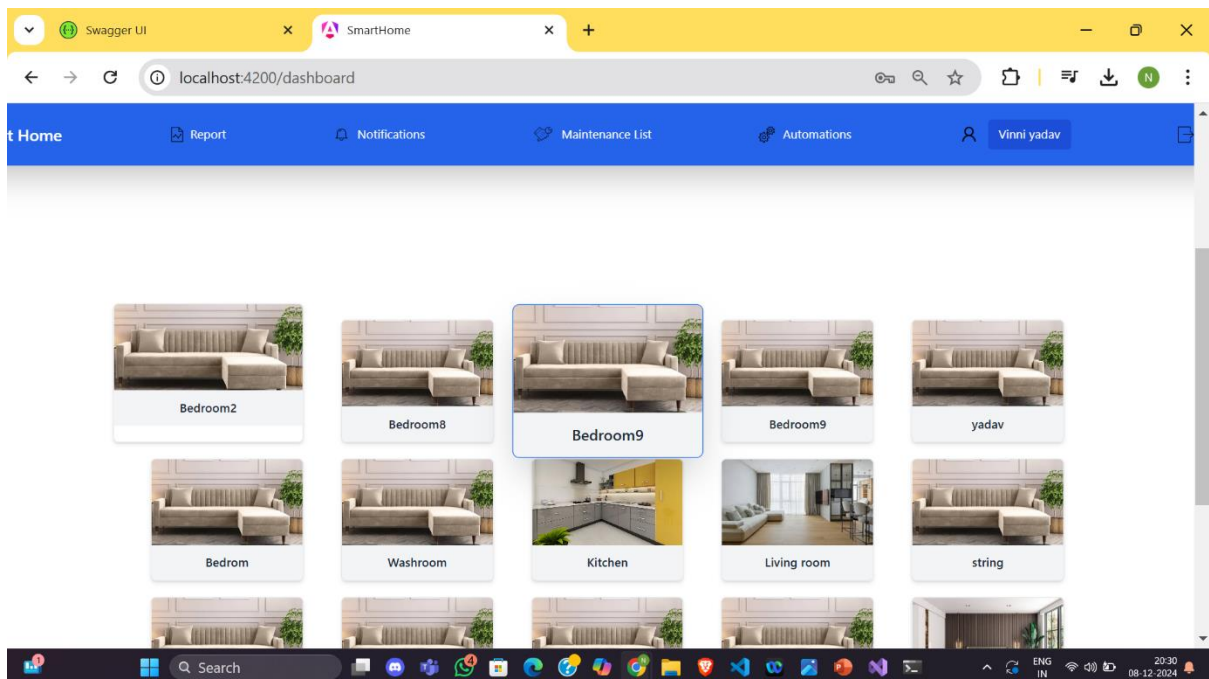
In dashboard I have a navbar, containing the report, Notifications, Maintenance List, Automation, User profile and logout, I have also added the quick access thing as well as rooms for that particular User in that dash board



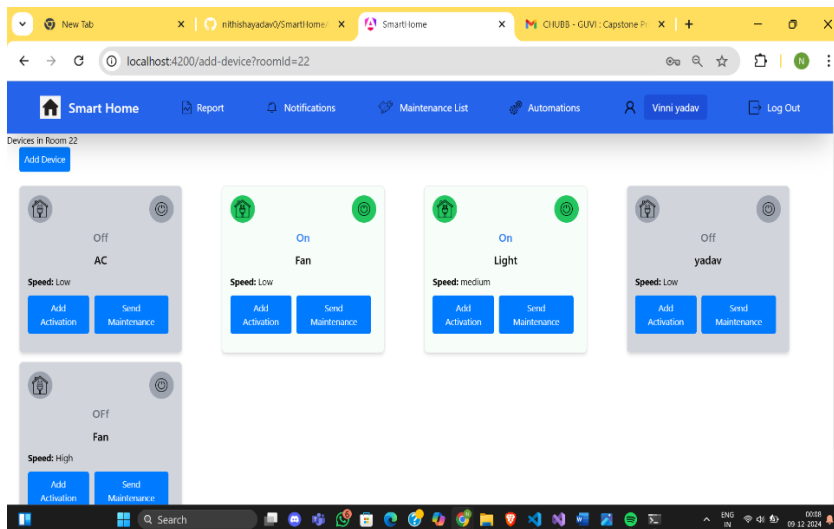
Rooms:

The whole house has been divided into different rooms

Upon clicking we navigate to the devices assigned to each room



Upon navigating we go the devices list – where we have list of devices

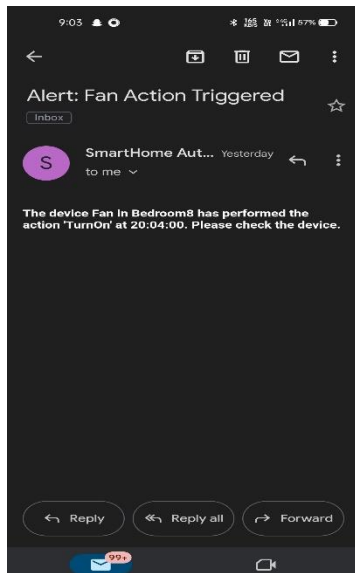


Major Features implemented in HomeOwner:

--- Automations - implemented the automations feature where user can add their specific Automation such as turning On lights at specific time

This automation alert can be sent using the Two ways

- 1) Notification alert via email using send grid
- 2) Voice alert using speech synchronizer in the c#



```
SmartHomeAutomation.Services.DeviceSpeechMonitorSe
Speak(string message)
{
    Console.WriteLine("Entering here");
    TriggerSpeechAlert(device, "Your AC has been running for more than 2 minutes.");
}

// Check for LPG leakage devices
var lpgLeakageDevices = _context.Devices
    .Where(d => d.Name.ToLower() == "lpg gas" && d.Status.ToLower() == "leakage detected")
    .ToList();

foreach (var device in lpgLeakageDevices)
{
    // Trigger the speech alert for LPG leakage
    TriggerSpeechAlert(device, "LPG leakage detected. Please take immediate action!");
}

2 references
private void TriggerSpeechAlert(Device device, string alertMessage)
{
    // Speak the alert message
    Speak(alertMessage);
}

1 reference
private void Speak(string message)
{
    _speechSynthesizer.SpeakAsync(message);
    Console.WriteLine($"Voice Alert: {message}");
}

0 references
public Task StopAsync(CancellationToken cancellationToken)
```

The above method from the backend can implements the Voice alert for the specifics devices such as , If my Ac is On for more than 5 minutes it speaks as the alert as my Ac is on for more than 5 minutes.

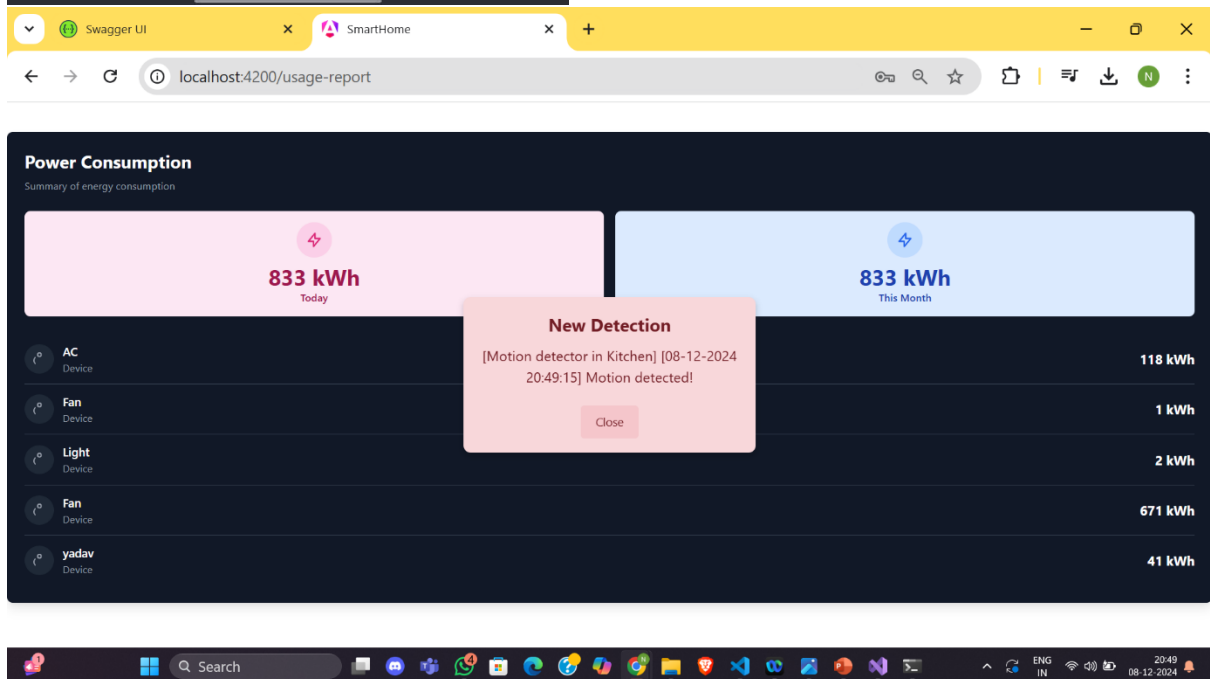
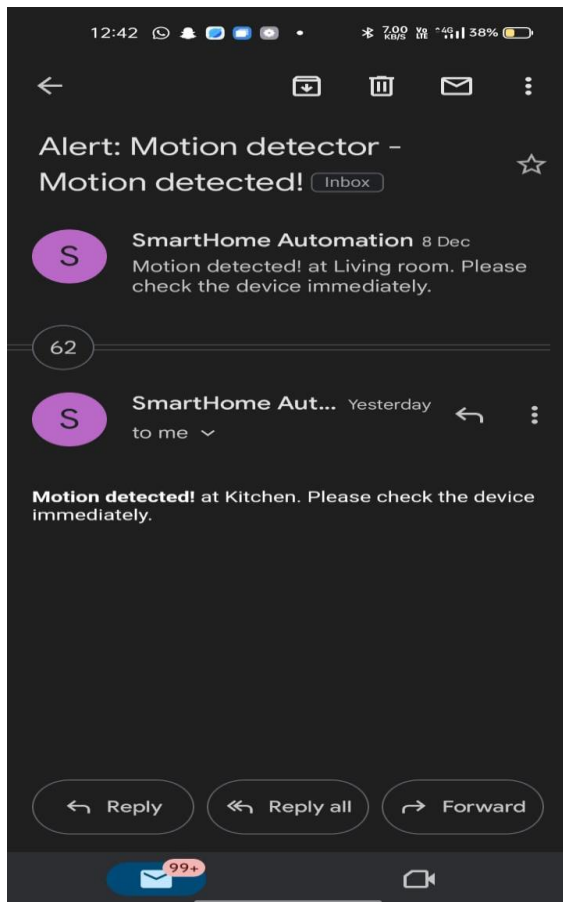
Security Feature:

It Is also the important feature in my project where I have implemented the security feature for motion detection, Unauthorized access in the house .

Whenever we found these kind of security issues, I Have implemented the alert

Messages in the two ways - one as the alert message at the client side

As well as ,I sent the notifications via email

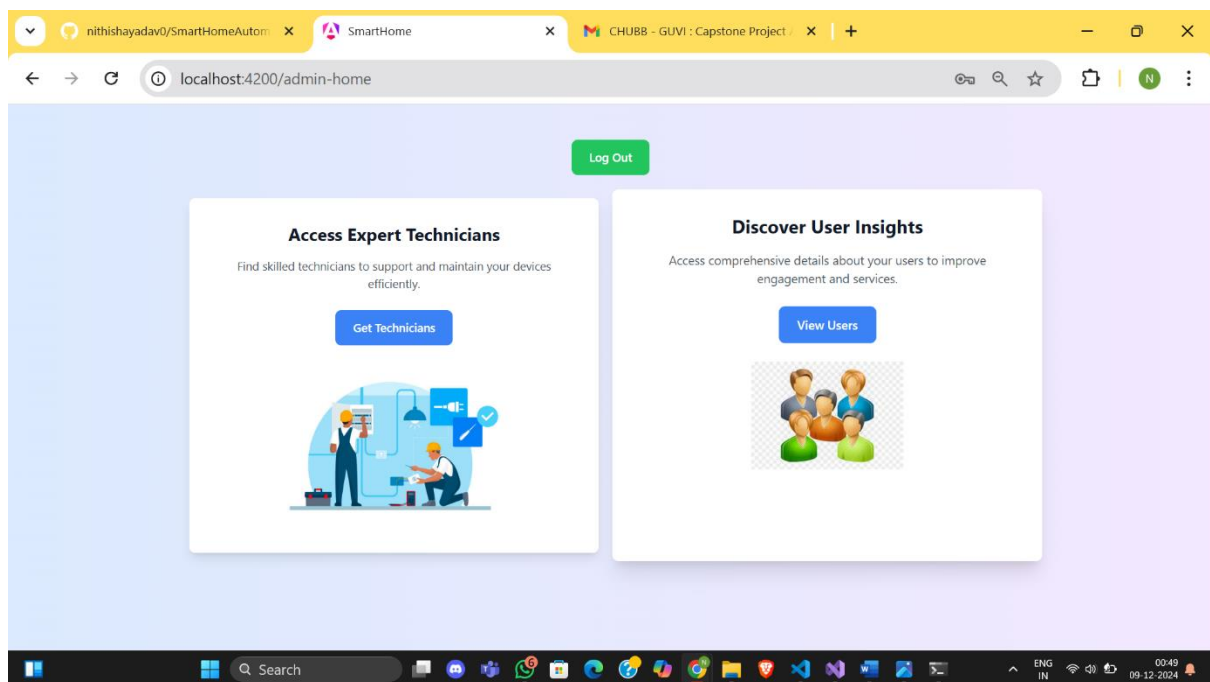


Other Features are – I have tracked the report of the energy consumption of each devices and displayed the report for the same

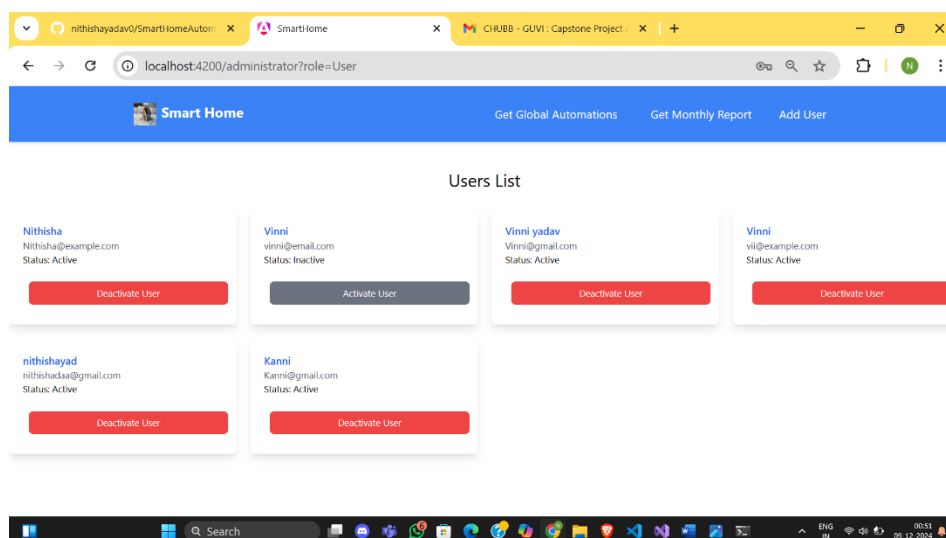
I have also created the communication between the DeviceTechnician and Homeowner, where Homeowner can raise the maintenance request and the device technician can gets the request ,Does the necessary actions and updates the status of the maintenance request

These ae the important features in the Homeowner

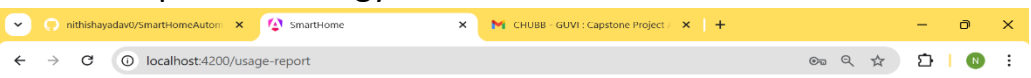
Administrator features :



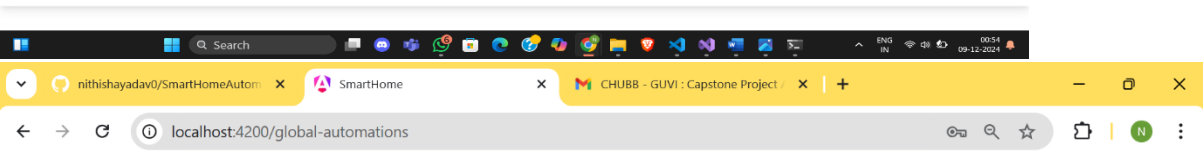
Administrator has the access to deviceTechnicians as well as the Users



He can activate ,deactivate the users and can also add the users , Create Global automations which are applicable to all users , Get Monthly report of consumption of Energy for each user



No Report available.



Global Automations

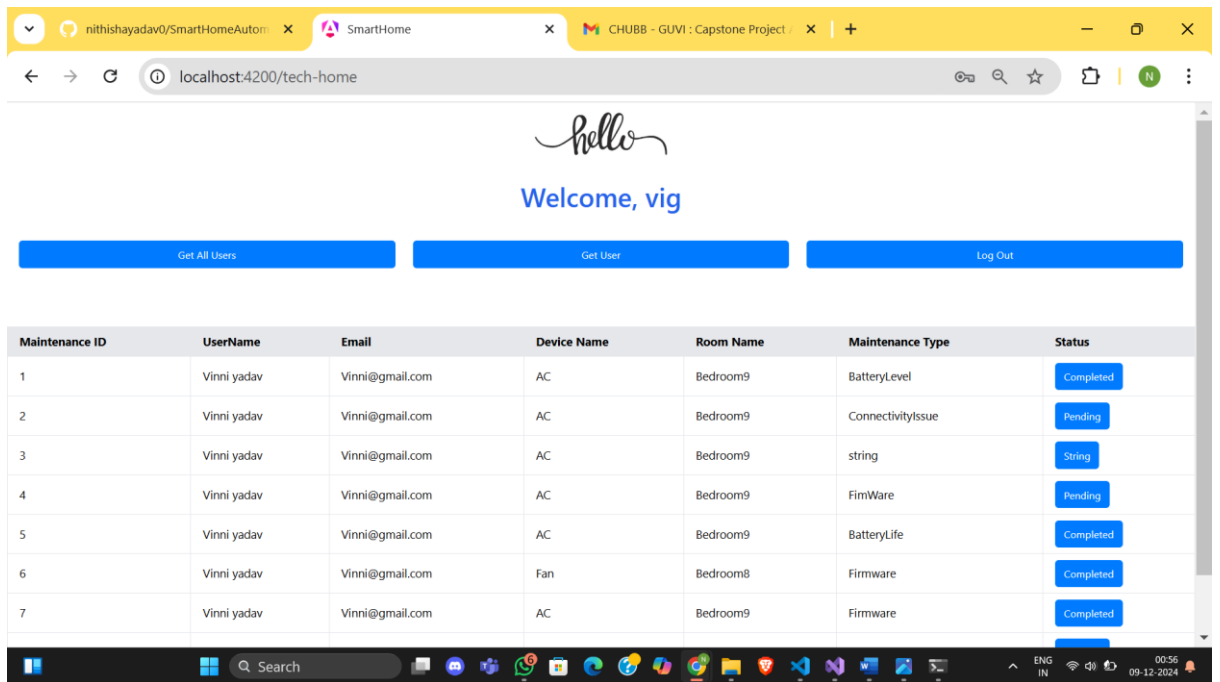
Add Automation

Trigger Event	Action	Status	Time Schedule	Description
Sunset	TurnOnLights	Active	18:30:00	Automatically turn on outdoor lights at sunset.
On	TurnOn	Active	22:00:00	njiugiki
On	On	Active	22:24:00	
On	On	Active	22:28:00	
TurnOn	On	Active	22:00:00	Tuning On lights at night time

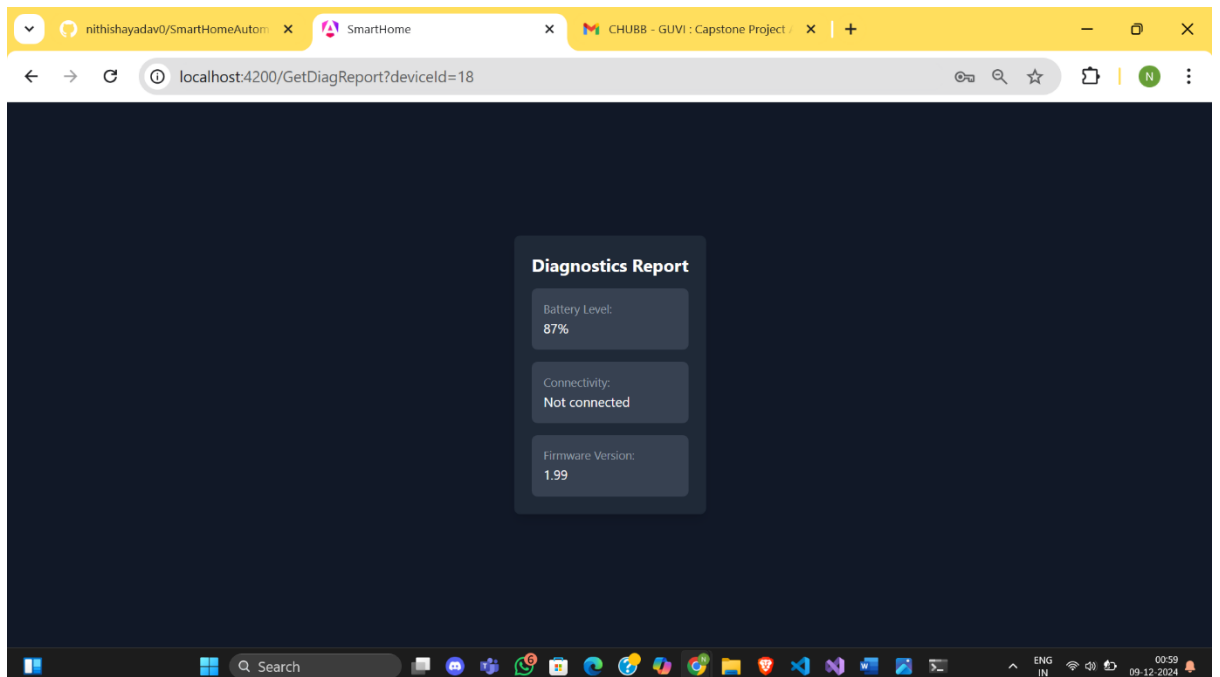


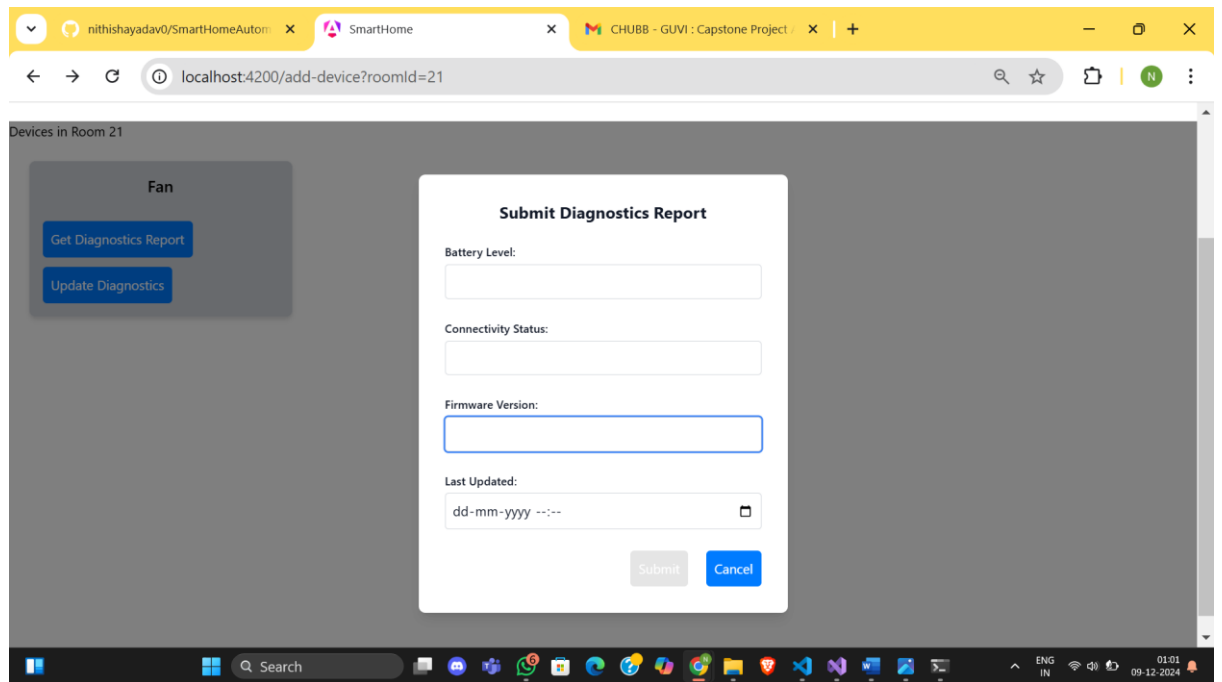
Device Technician Features :

Dashboard for Device Technicians where he can see the list Maintenance requests gets from the different users



Here can access Diagnosis report where he can view and the update the Configuration settings





In this Homeowner ,Administrator ,DeviceTechnicians
Manages all the tasks .

Innovation :Implemented the real-time voice alerts
For any specific triggering event