**IoT Smart Home Dashboard**

Background: As a smart homeowner, User wants to control all the smart devices from a single app, so he/she can easily manage his/her home’s technology. The goal is to provide users with seamless and efficient app experience. This project aims to develop an Internet of Things that leverages Java Full Stack technologies to streamline various IOT operations.

Problem Description: Traditional processes involve manual handling of the appliances that can be time-consuming and error prone. The proposed Internet of Things aims to address these challenges by automating key IOT operations, ensuring accuracy, speed, and improved customer satisfaction.

**User stories**

1. **User Story:** Create a Device

Given the application is working without any compile errors

And the user is on the main menu with options

1. Register Device

2. List All Devices

3. Control Device

4. Monitor Device Status

5. Simulate Sensor Data

6. Connect Devices

7. Show Network Topology

8. Exit

When the user chooses 1

Then the system prompts for user details as

Enter Device ID: 1234

Enter Device name: hall light

Enter Device Type (light/thermostat/camera/sensor): light

Enter Location: hall

And the system creates a new device with the provided details

And Device Registered message is shown

1. **User Story:** Control Device

Given the application is working without any compile errors

And the user is on the main menu with options

1. Register Device

2. List All Devices

3. Control Device

4. Monitor Device Status

5. Simulate Sensor Data

6. Connect Devices

7. Show Network Topology

8. Exit

When the option selected a 3 (Control Device)

Enter Device ID: 1234

Enter Action (ON/OFF): ON

Then the system should turn the device ON and change the status to ONLINE

1. **User Story:** List All Devices

 Given the User has successfully created a device

And the option selected is “List All Devices”

Then system shall show all the registered devices

1. **User Story:** Monitor Device Status

 Given the User has successfully created a device

And the option selected is “Monitor Device Status”

The system asks for device ID

Enter Device ID: 1234

Then system shall show the devices status

1. **User Story:** Simulate Sensor Data

Given the User has successfully created a device and turned the status to ONLINE

And the option selected is” Simulate Sensor Data”

Then system shall prompt for

Enter Device ID: 1234

Enter Sensor Type (temperature/humidity/light/motion): temperature

Enter Unit (°C/%/lux/Boolean): °C

Then the system will generate a random value and then store in the log sheet with time.

1. **User Story:** Connect Devices

 Given the User has successfully created a device

And the option selected is “Connect Devices”

Then system shall prompt for

Enter First Device ID: 1234

Enter Second Device ID: 5678

Then the system connects both the devices

And successful message to be shown

1. User Story: Show Network Topology

Given the User has selected the Option “Show Network Topology”

Then the application shall show all the connected devices.