Design Document
Home Automation Using CoT

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1 Problem

As the world evolves each day, everyday objects are becoming smart and able to communicate with each other. The internet of Things, IoT, is in a huge way, and people are inventing new gadgets that enhance lives. Objects are now equipped with sensors and can measure different units and execute orders received from users.

Many existing, well-established home automation systems are based on wired communication. This does not pose a problem until the system is planned well in advance and installed during the physical construction of the building. But for already existing buildings, the implementation cost goes very high.

This is where wireless home automation comes into place. It can be installed on an existing building, costs a small amount of money, and provides nearly full control over the home.

2 Solution and Objectives

This project aims to prototype as many appliances as possible and connect as many objects. It is also mandatory to give homeowners full control over their homes to make life much easier. By realizing this project, we aim to:

- **Develop a Home Automation Remote system:** Conception and realize a full prototype of a home automation system with the ability to connect and control it remotely.
- **Use different Inner and Outer network technologies:** The use of different communication techniques between the objects, main server, and the homeowner's control application.
- **Use devices that are easy to install:** When choosing the components to install and work with, an optimal combination of components needs to be chosen to reduce the cost, can be easily installed in existing buildings, easy to work with, and interact with.
- **Make it suitable for inexperienced users or even disabled users:** Making the user experience as easy as possible is one of the main objectives, as the automation system can be used by different categories from children to elders to disabled persons, etc... so mainly, the control application needs to be easy to use and understand.
- **Scalability:** The network needs to be scalable, which means that the possibility to add new appliances and new smart things to the IoT network should be easy, and the integration of the new object in the control application needs to be straightforward.

3 Usecase Diagram

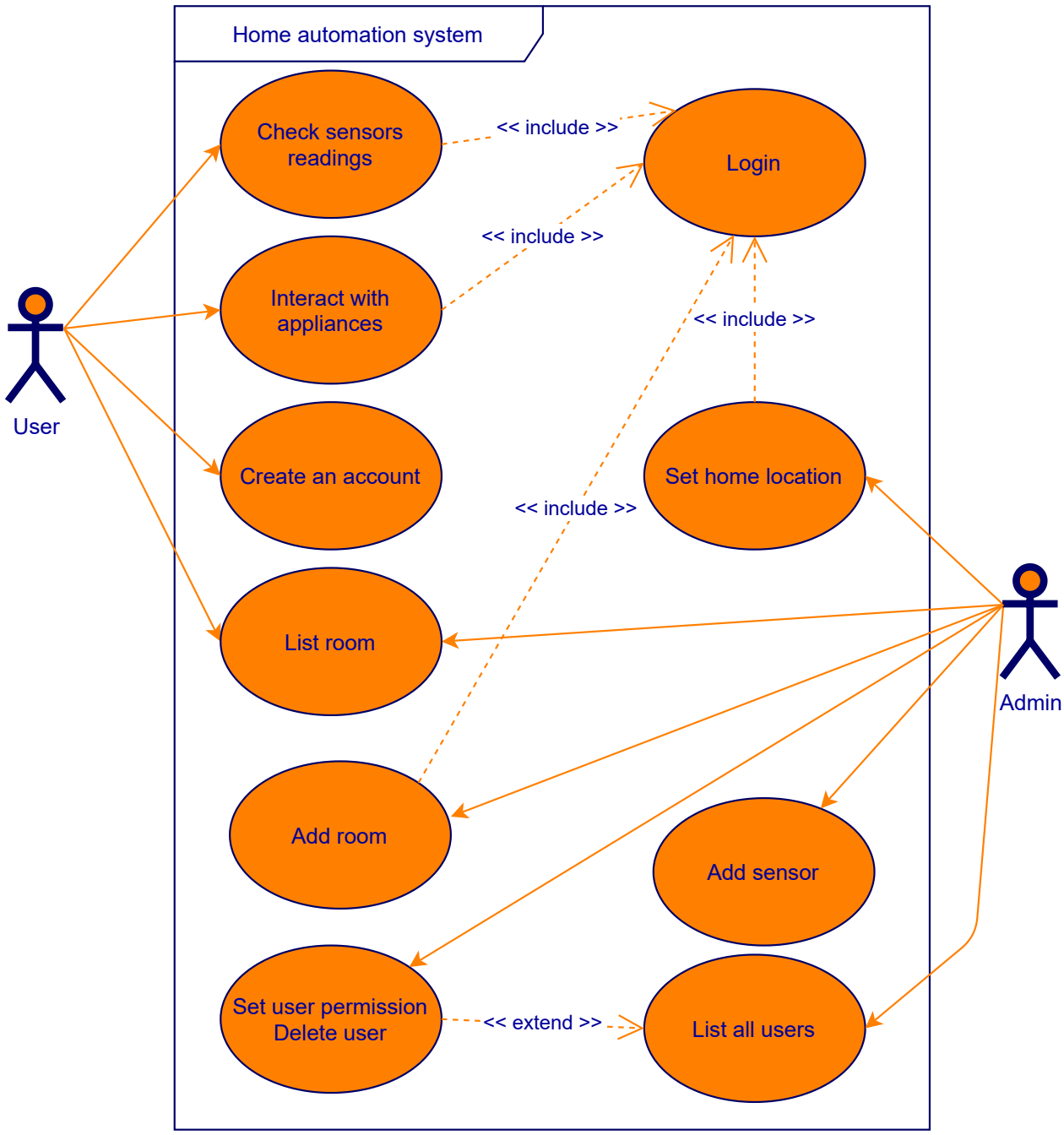

Figure 1: Usecase diagram

4 Authentification Diagram

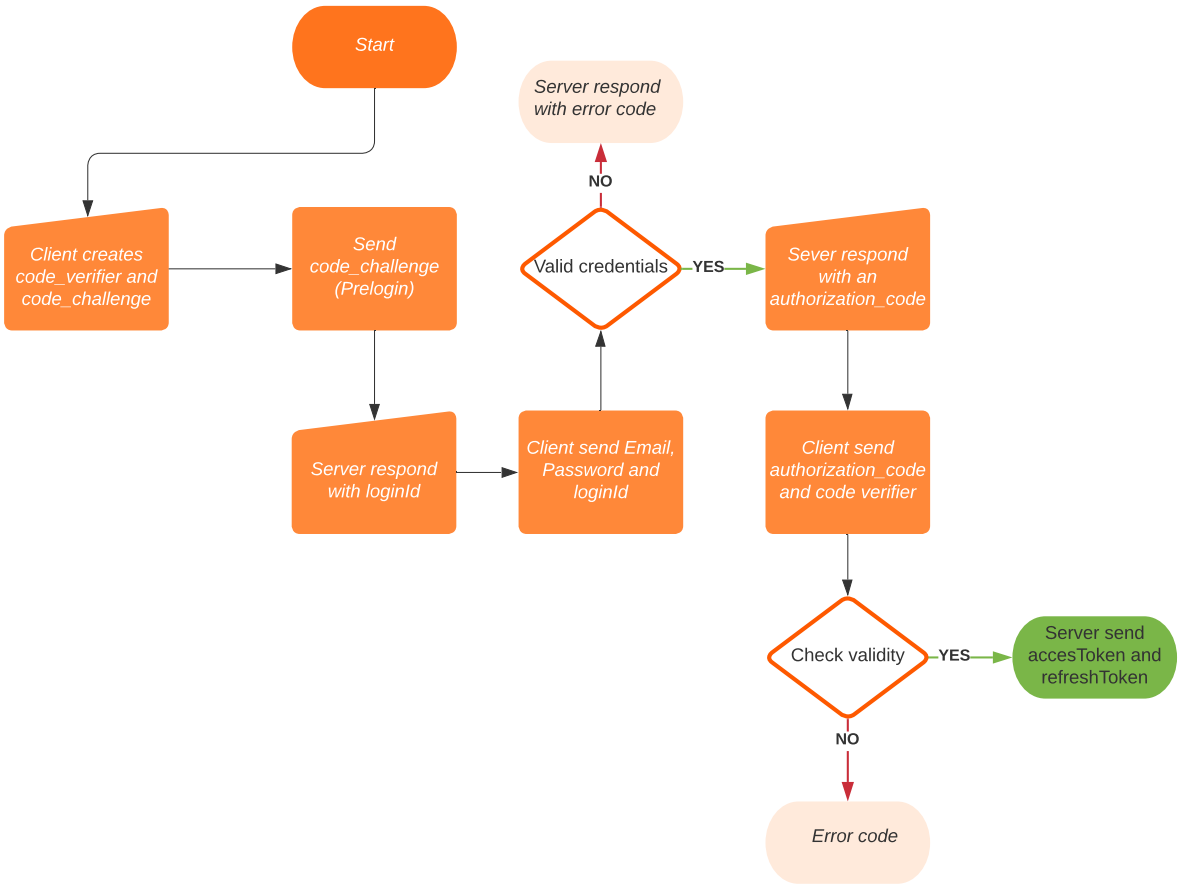

Figure 2: Login Flow

5 Deployment Diagram

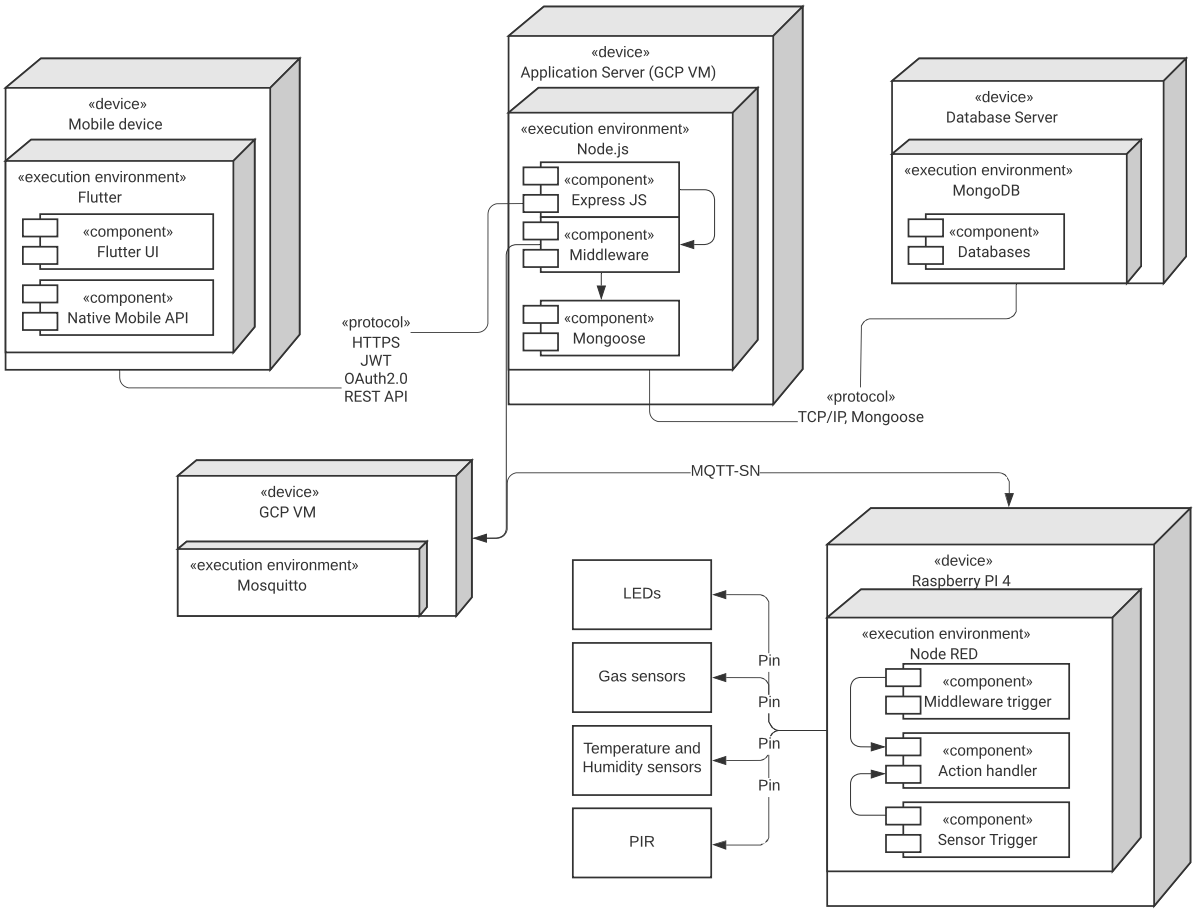

Figure 3: Deployment Diagram