SINGAPORE INSTITUTE OF TECHNOLOGY

SIT-UoG
Computing Science

Module
Computer Network CSC1010

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VAI Home Automation

Abstract

One of the biggest emerging trend in 2021 is smart home automation due to the convenience that it provides.

Hence, we decided to simulate a simple smart home that allows user to control their household application through verbal commands.

Overview

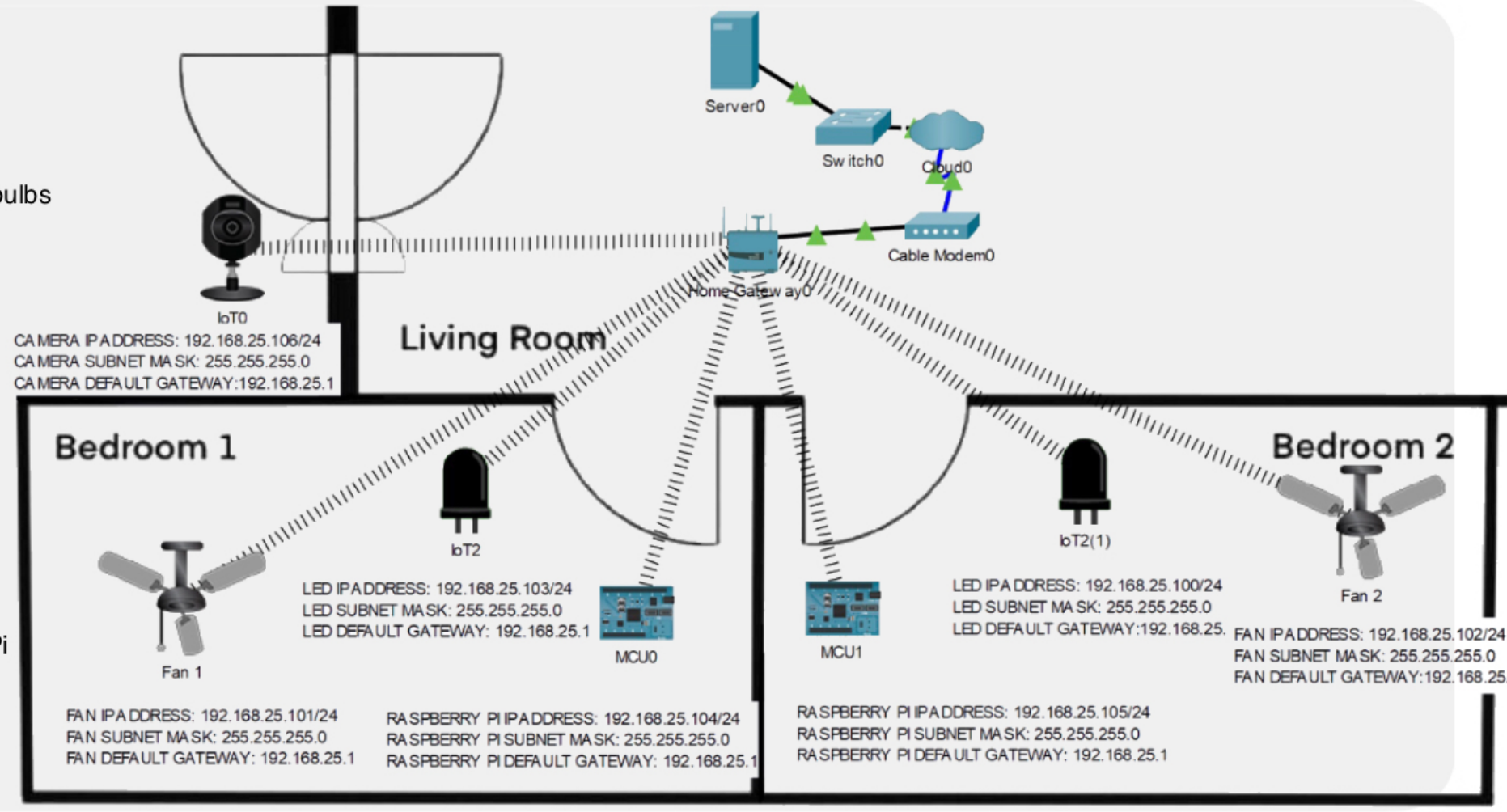
The project simulates a simple smart home automation with sensors and voice intercoms.

The lights and fans could be turned on and off by using controls on the website and voice commands. Additionally, voice intercoms are set up, allowing people in different rooms to communicate with ease.

Architecture

Hardware

- LDR & lightbulbs
- Fans
- TMP 102
- Microphone
- Speakers
- Camera
- Raspberry Pi



Features

- Communication between PIs is done by making use of MQTT
- Control household applications (lights and fans) via voice commands
- Voice intercomms used for communication when in different rooms
- Control household applications (mainly lights and fans) with the website

Scalability

- Two way connections by enabling both raspberrypi to be both the subscriber and publisher
- Additional PIs and sensors can be added easily
- Display temperature & humidity on the web interface
- Recorded footage via the camera to be sent to user