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An Open Source Smart home Platform

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B.Sc. (Hons) Computer Science

Number of words = 0
This includes the body of the report only

Declaration of Originality

Put some text similar to the following in here:

I certify that the material contained in this dissertation is my own work and does not contain unreferenced or unacknowledged material. I also warrant that the above statement applies to the implementation of the project and all associated documentation. Regarding the electronically submitted work, I consent to this being stored electronically and copied for assessment purposes, including the School's use of plagiarism detection systems in order to check the integrity of assessed work.
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Abstract

Put your abstract here. You should create a short abstract (200 words at maximum) which is on a page by itself. The abstract should be a very high-level overview: for example 1–2 sentences on the aims of the project, 1–2 sentences on the kind of design, implementation, or empirical work undertaken, and 2–3 sentences summarising the primary contribution or findings from your work. The abstract appears in the front matter of the report: after your title page but before the table of contents.

what should go in here:

aims

design

implementation

findings and primary contribution

If you want to dedicate to someone in particular

Acknowledgements

General acknowledgements ...
your supervisor, your family, your friends, ...

Contents

List of Figures

List of Tables

1 Introduction

Will write a couple of words about the project here, similar projects, inspirations etc. Citation here to remember how to do it :) [1, 2].

actually write this section

1.1 Aims & Objectives

When researching available smart home technology, one major gap I came across was the availability of open source software. While options exist for someone interested in connecting their proprietary device to an open source platform (view), there was no solution for anyone looking to build their own device and then connect it to an open source hub. In fulfilling this goal, to build an open source platform for both devices and the hub they will connect to, there are multiple objectives that will need to be met along the way:

find the link to this

1. Create a Library and API (Application Programming Interface) for building smart home devices.
2. Build a Server with an API for the smart home devices to communicate with. This will act as a hub and will control clients connected to it.
   a) This API should be well documented, so a user can interact with the hub, without using the Library.
3. Create a frontend, which will be populated with devices currently connected to the smart home. It will also be used to control clients connected to the server.
   a) The API provided by the server for this frontend should also be easy to use, so the user can create their own frontend environment.
4. The code of all of the above should be hosted in a public repository, with instructions for how to build and use every component of the system.
   a) An appropriate license should also be selected for this repository, so the code within it can be copied or modified by third parties.
   b) This repository should provide important links and provide information on the inner workings of the system, to support interested parties.

1.2 Project Overview

Each bullet point below would give a small summary of the section

ask about this section

1. **Background Research**
2. **Design of the System & Technology Decisions**
3. **Implementation**
4. **Results**
5. **Conclusion and Reflection** chapter1.tex

2 Background

2.1 Servers and Smart Home Hubs

2.2 Smart Home Devices

2.3 Frontend control of Smart Homes

2.4 Security

2.5 Networking

2.6 Open Source and Licensing

Remember to always refer to chapters, sections, figures, tables, ... correctly. That is, you might want to refer to something in the former chapter by saying something like "as mentioned in Chapter 1 ...", "as mentioned in

3 Implementation

3.1 Server & Hub

3.1.1 Security

3.1.2 Threads & Concurrency

3.1.3 Device API

3.2 Device Library

3.3 Example Device

3.4 Web & CLI Frontend

Bibliography

[1] F. Papacchini, M. B. Caminati, and J. Hu. Another example citation. In *Dissertation Templates*, volume 8945 of *Lecture Notes in Computer Science*, pages 143–149. LUL Press, 2023.

[2] J. Stovold and F. Papacchini. *An Example Citation*, chapter 1, pages 1–31. LUL Press, 2023.

A Original Project Proposal

Put a copy of your proposal here

B Another Appendix Chapter

This could be about your experiments