**SOEN-343 Software Architecture and Design – Lab Section: WK-X**

**Project – Phase 1 Report**

**Presented to**

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**Concordia University**

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Table of Contents

# Problem definition

## **Problem Statement**

*[Provide a statement summarizing the problem being solved by this project. The following format may be used:]*

The smart home simulator addresses the challenge of managing complex smart home systems. It creates a tool to facilitate the programming, testing, and interaction of various smart home devices in a virtual environment

| The problem of | Difficulties in managing several smart home systems due to programming complexities |
| --- | --- |
| Affects | Homeowners, students, researchers, practitioners, and anyone interested in smart home technology |
| The impact of which is | Ineffective use of smart home systems and underutilization of resources due to lack of modularity |
| A successful solution would be | A user-friendly stimulator that simplifies understanding and management of smart home systems. An effective way to utilize all resources and enhance user education |

## **Product Position Statement**

*[Provide an overall statement summarizing, at the highest level, the unique position the product intends to fill in the marketplace. The following format may be used:]*

| For | Homeowners, Researchers, and specialists in the field of smart home technology |
| --- | --- |
| Who | For a comprehensive understanding and control over smart home system |
| The [Project Name] | *is a [product category]* |
| That | Provides proper modularity towards the individual components of a smart-home system and provides ease of use. The smart-home system can also enhance the security of a household. |
| Unlike | Other apps which have a separate system for each individual component. |
| Our product | Our app provides direct and easy access to all components in a single application, while keeping modularity and providing security to a household. |

[A product position statement communicates the intent of the application and the importance of the project to all concerned personnel.]

## **Product Overview**

## **Product Perspective**

The Smart-Home System is a product that relies on third-party pre-installed smart devices in a household and provides a singular interface that allows for easy access to each individual smart component in a house. The system is independent of any other third party product, but instead allows for communication between said products and the software.

## **Assumptions and Dependencies**

[List each factor that affects the features stated in this document. List assumptions that, if changed, will alter this document.

For example, an assumption may state that a specific operating system will be available for the hardware designated for the software product. If the operating system is not available, this document will need to change.]

| Assumptions | Dependencies |
| --- | --- |
| Each component has a communication interface | An Internet connection or Bluetooth |
| A device that can install the Smart-Home System | Windows/Mac/Linux/Android/iOS |
|  |  |
|  |  |

# 

# 2. Technology Used

**Github** is going to be used for version control, team collaboration, for monitoring and verification. **Discord** is going to be used for team collaboration, such as team meetings and programming sessions. **Draw.io** is going to be used for the making of UML Diagrams. **Java Swing** is going to be used as the development framework, with **IntelliJ** as the IDE for software development. **Java** is going to be used as the OOP language using the MVC pattern.

# 3. Context Diagram

# 4. Domain Model