A report and the code must be submitted. The report must clearly state all the assumptions and design decisions made the considered list of topics used by the publishers and subscribers and the code for the implemented entities. Moreover, it must clearly describe the technical contributions of every member of the group regarding the design and implementation of the project). A demo will be held during the Week 13 of this winter term. During the demo, all the members of the group should attend and be ready to answer questions from the instructor. During the demo, we may also go through the code and the report

COEN 446 - Project Report

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**Table of Content**

**Introduction:**

This project consists of developing a smart thermostat that optimizes the heating and the cooling system of the house, the program consists of a broker that acts a server and handles all the input sent from the “Management APP”, the “Smart Door Locker” and the “Connected Thermostat”. The goal of the project is to allow several users to enter their names and their prefered temperature into the Management APP so that, upon their entering into the house, the thermostat would adapt to their prefered temperature following certain assumptions.

The following report contains a thorough description of the system’s architecture for the broker and the surrounding applications, along with an explanation of the methods that were used. Furthermore, it contains the different test cases with their implementation.

**Assumptions:**

**All Four modules can recover from a crash.**

**Management app:**

* It will take inputs from the user via console, the inputs are names & temperatures
* Inputs cannot have the same name
* Enter as many users as we want
* No ACK is required from the broker
* Must connect to broker via IP & port (UDP)

**Smart Door locker:**

* Takes inputs from user via console, input is just a name
* No ACK is required from the broker
* Must connect to broker via IP & port (UDP)

**Thermostat:**

* Receives information from Smart Door Locker via Broker
* Will Set the logic based on who and who many entered. -----
* Will modify the logic once a person leaves the room
* Will go to default if house is empty
* Logs

|  |  |
| --- | --- |
| Assumption | Temperature |
| Empty House | 15°C |
| 1 Person | Assign temperature on the person’s preference |
| >2 People | Assign Highest priority to the first arrivals |

**Broker:**

* Upon receiving info logs should publish info.

**High Level Design:**

Upon receiving info logs should publish

**Test cases:**

**Conclusion:**

**Expectation of Originality :**