



**AKDENİZ UNIVERSITY  
FACULTY OF ENGINEERING  
DEPARTMENT OF COMPUTER ENGINEERING**

**WEB PROGRAMMING**

**Akın Cem Tural - 20190808061**

**Home Automation System Software Requirements**

**SUPERVISOR: Prof. Dr. Melih Günay**

**March 26 2023**

**ANTALYA**

## TABLE OF CONTENTS

<b>1. Introduction.....</b>	<b>3</b>
<b>2. Requirements.....</b>	<b>3</b>
<b>3. Use Case &amp; Sequence Diagrams.....</b>	<b>4-7</b>
<b>4. Wireframes.....</b>	<b>7-11</b>

## 1. Introduction

In recent years, home automation systems have become increasingly popular among homeowners. The ability to control devices such as lighting, heating, and security systems remotely through a single system has made life much easier for homeowners. In this document, i will imagine an home automation system software and come up with a requirements document , use case & sequence diagrams and possible wireframes of web or mobile app.

## 2. Requirements

In my project document there are 2 user types one of them is admin that controls over devices in our web or mobile app. And the second user type is proadmin that has control over the admins.

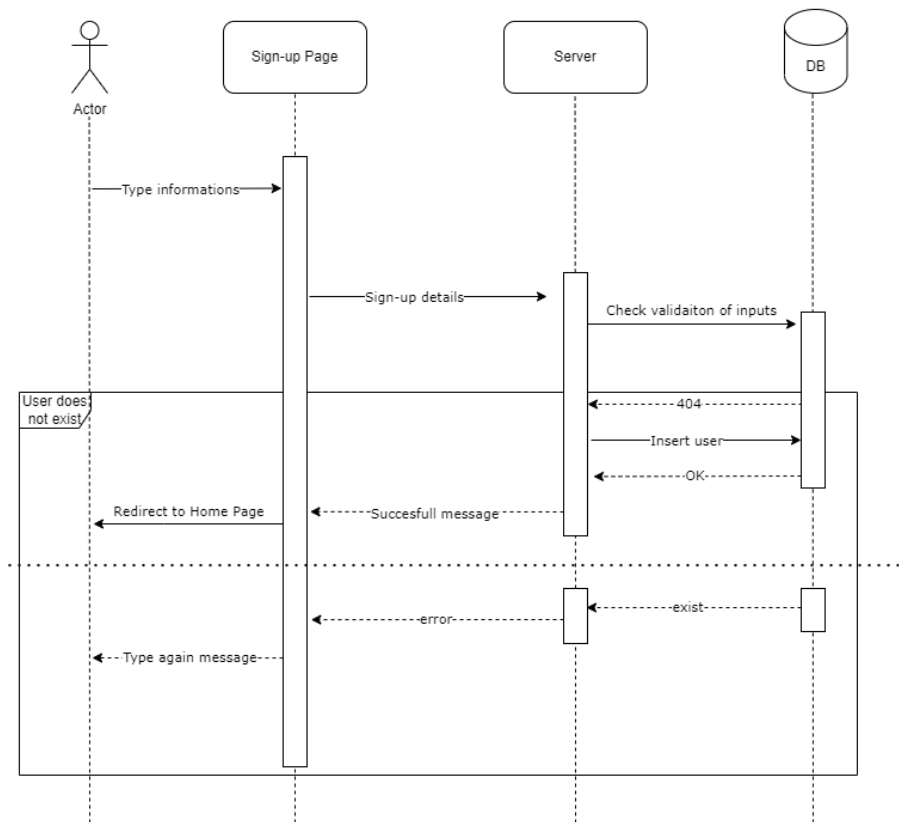
### 2.1 Functional Requirements

- **Authentication:**  
The ability to access the system. This system has 2 different roles which are admin & proadmin. These two should be authenticated seperately and differently. Proadmin will enter the system with special password only the owners of the product. Admins will enter the system with sign up & login.
- **Device Management:**  
The ability to list and manage all the devices connected to the home automation system software. This may include add/remove new device configure its IP/etc. Connect devices to Wifi/Bluetooth
- **Device Control:**  
The ability to control devices remotely. This may include turn off/on lights , activating/deactivating air conditioner etc.
- **Device Monitoring:**  
The ability of monitor the status of the devices. This may include runtime of an air conditioner , how many electricity did air conditioner cost etc.
- **Device Malfunction Alerts:**  
The ability of receiving alerts in case of any unusual device activity. This may include if a device made short circuit we will get alerted.
- **Device Scheduling:**  
The ability to arrange the events of devices. For example if a person wakes up at 7 a.m. we should be able to start thermostat at 6.50 a.m. before we wake up.
- **Voice Control:**  
The ability to control devices with voice input. For example if a person wants to start an air conditioner with the words spelling “Start Air Conditioner”.
- **Energy Saving Tips:**  
The ability to suggest energy-saving tips. For example if a person has worked his air conditioner for many hours program should tip to relax an air conditioner little bit.
- **Admin Management:**  
The ability to create multiple user profiles with different levels of access like (admin, proadmin) , this will be helpful to admin user to be in full charge and if system has unauthorized users somehow this will give an ability to kick that user.
- **Admin Control:**  
The ability to control over admins permissions over devices.

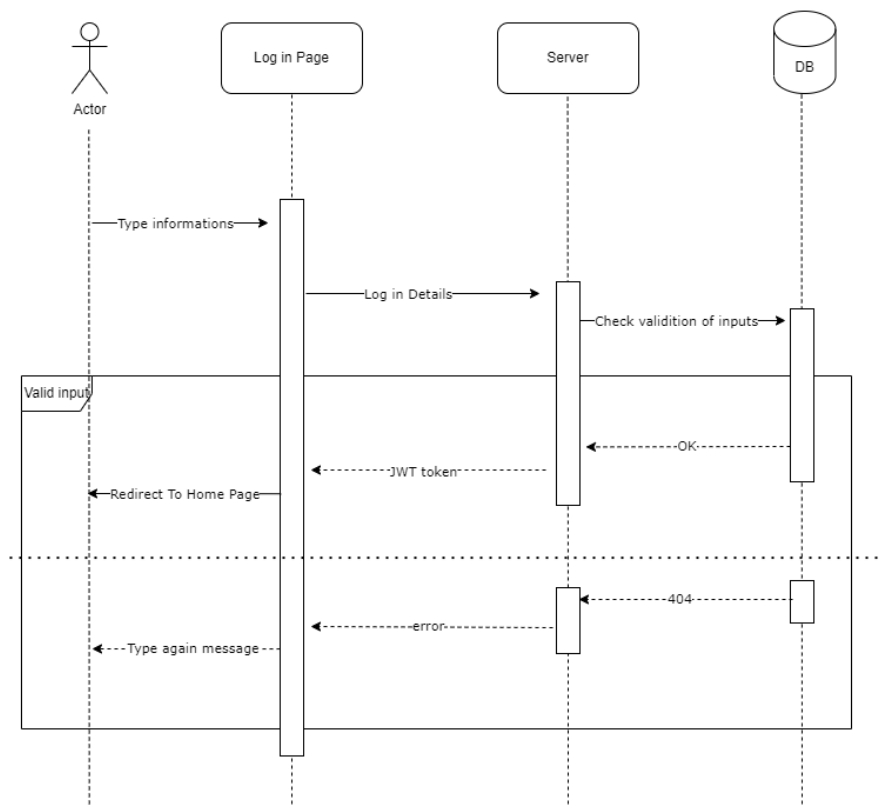
### 3. Use Case & Sequence Diagrams

#### Registration & Login Sequence Diagram

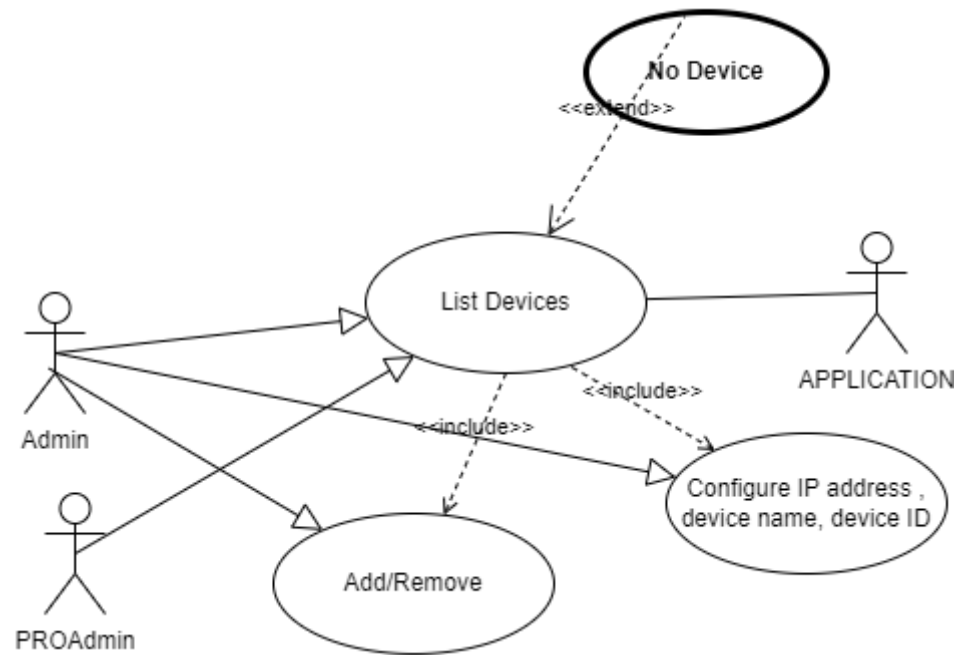
Registration Sequence Diagram:



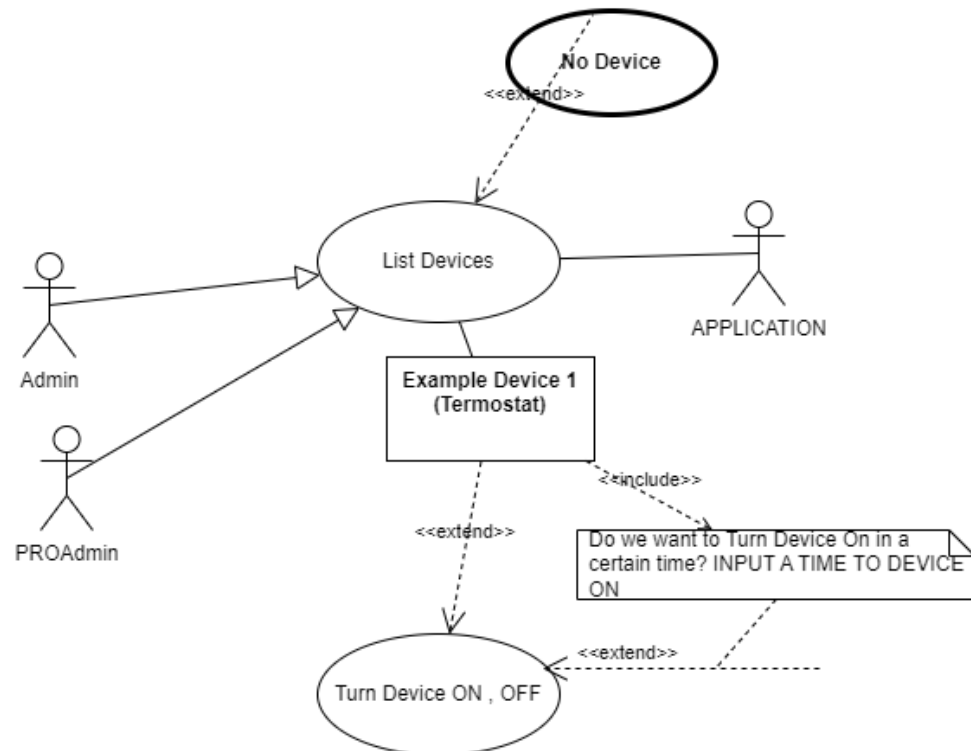
Log in Sequence Diagram:



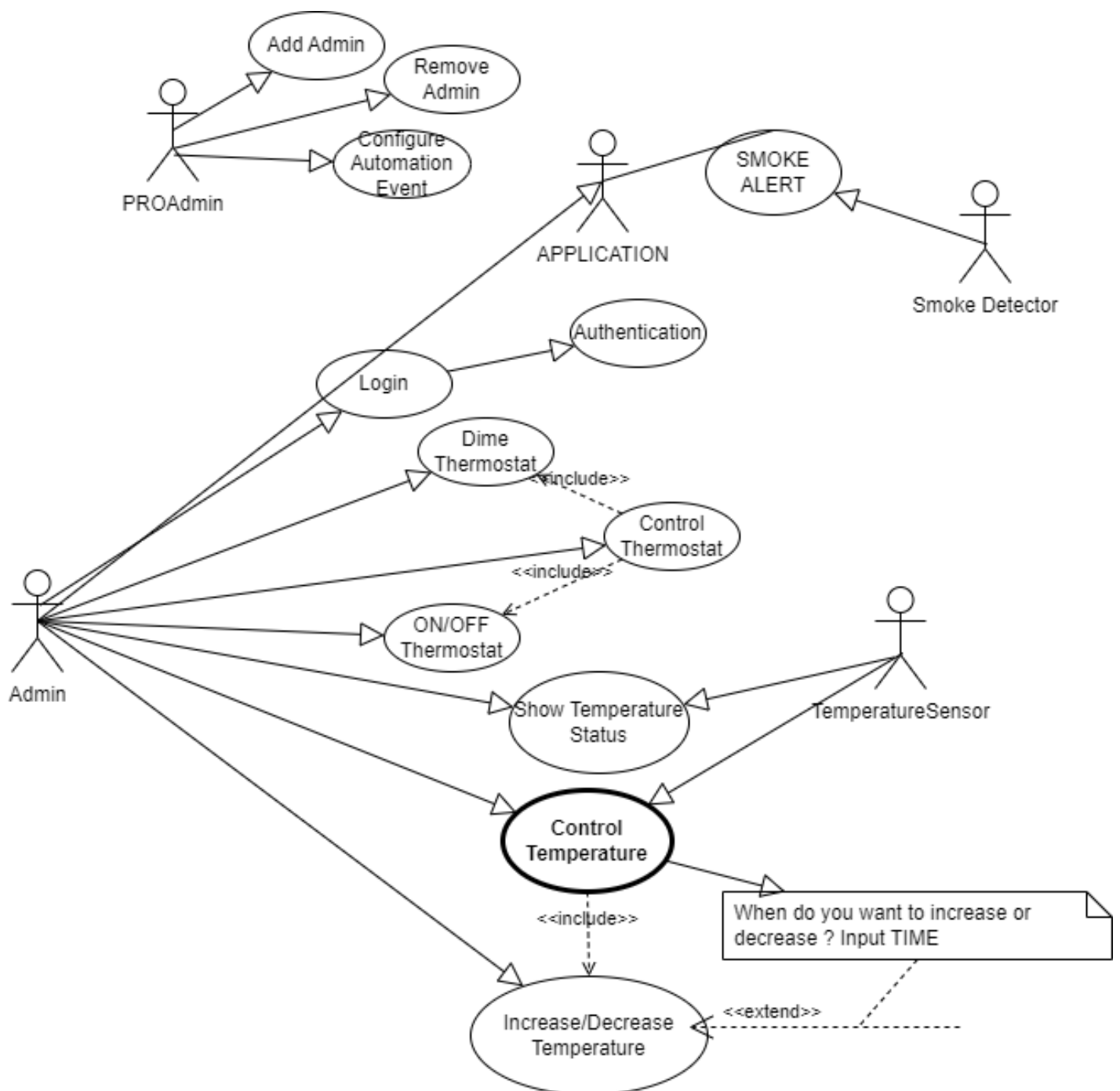
Device Management Use Case Diagram:



Device Control & Scheduling Use Case Diagram:



General Admin & Pro Admin Use Case With Possible Devices:



#### 4. User Interface Wireframe

##### Login & Signup Page



GİRİŞ YAP

henüz hesabınız yok mu?  
[kayıt ol](#)

LOGO



KAYDOL

## Main Page – Admin – Device Control & Monitoring & Alerts

[Devices](#)[İletişim](#)[Hakkımızda](#)[Durumum](#)[Çıkış Yap](#)

### Devices

AYT Edebiyat



**Termostat**

Yüklenme Tarihi



**Klima**

Yüklenme Tarihi



**Pc**

Yüklenme Tarihi

# FOOTER

[Devices](#)[İletişim](#)[Hakkımızda](#)[Durumum](#)[Çıkış Yap](#)

### Devices

Klima

•Ana Ekranı Geri Dön



**Klima**

Device

On

Off

### TASKS

- Hava 35 derecenin üstüne çıktığında uyar

5 Days Remain

Done

September 2022						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
29	30	31	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	1	2
3	4	5	6	7	8	9

Arrange Work Time

### IMPROGRESS

- 5 saatir çalışıyor +

12m 52s

Time Remaining

# FOOTER

[Devices](#)[İletişim](#)[Hakkımızda](#)[Durumum](#)[Çıkış Yap](#)

### Devices

Klima

•Ana Ekranı Geri Dön



**Klima**

Device

**ALERT**

Termostat  
Önerilen Sıcaklığın  
Üzerine Çıktı

Shut Down

Decrease (1)

### TASKS

- Hava 35 derecenin üstüne çıktığında uyar

5 Days Remain

Done

September 2022						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
29	30	31	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	1	2
3	4	5	6	7	8	9

Arrange Work Time

### IMPROGRESS

- 5 saatir çalışıyor +

12m 52s

Time Remaining

# FOOTER



## Admin & Pro Admin – Device Management



Devices İletişim Hakkımızda Durumum Çıkış Yap

### Devices

Klima

<Ana Ekran'a Geri Dön



### Klima

Yüklenme Tarihi

Add/Remove: Configure IP: Device Name:



Devices İletişim Hakkımızda Durumum Çıkış Yap

### Devices

Klima


<Ana Ekran'a Geri Dön



### Klima

Yüklenme Tarihi

Add/Remove: Configure IP: Device Name:



Klima  
Yüklenme Tarihi

FOOTER

FOOTER

## Pro Admin - Admin Management & Admin Control



Jon Doe  
32



Jon Doe  
32



Jon Doe  
32



Jon Doe  
32



Jon Doe  
32



Jon Doe  
32



32



Jon Doe  
32



Jon Doe  
32



Jon Doe  
32



Jon Doe  
32



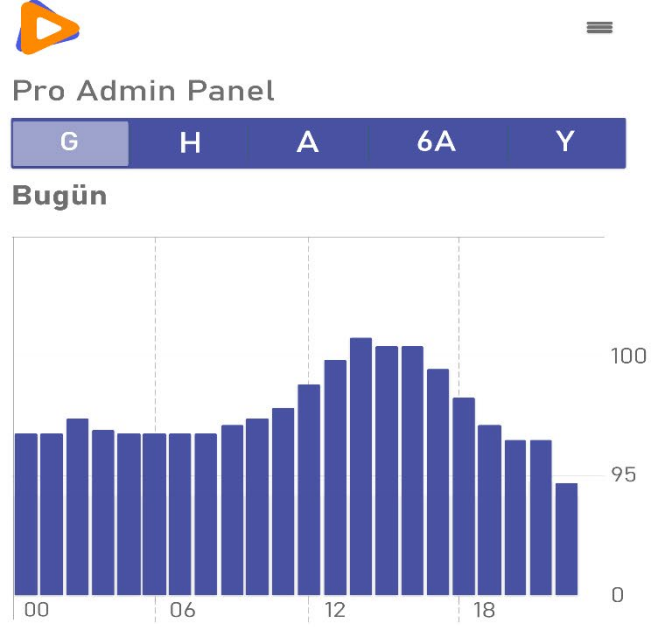
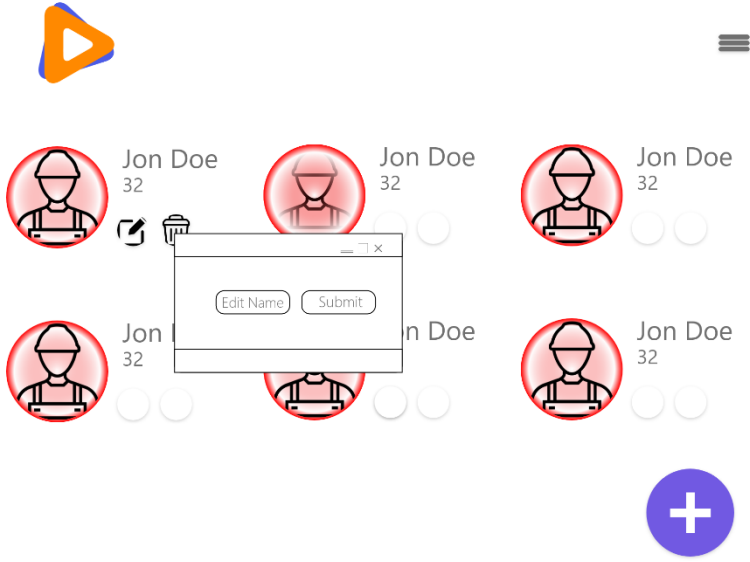
Jon Doe  
32



# FOOTER

# FOOTER

## Pro Admin Statistics



### Öne Çıkanlar Money Income

#### Bugün



#### Bu Hafta



FOOTER

FOOTER