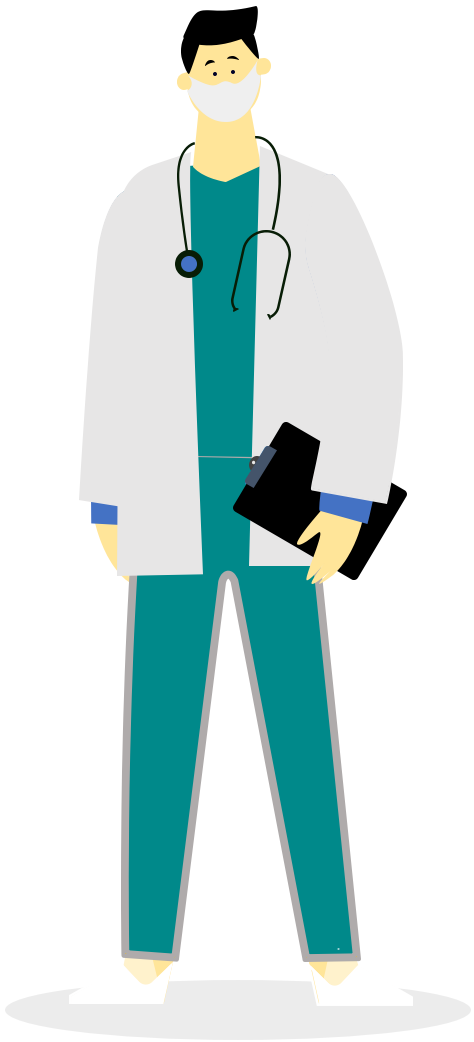
# Announcements' Sound Generator

# Software Engineering For

Announcements' Sound Generator

# Content




01
Introduction

02
Aim and objectives

03
Assumption
Constrains and risk

04
Functional and Non-Functional requirement

05
User characteristics

06
System Architecture - System Overview

07
Use case

08
Sequence diagram

09
User interface diagram

10
Conclusion

# Introduction

# Aim and objectives

**Aim:** To provide an effective Announcement system

**Objective:**

- To create a quick intervention single system at all hospitals.
- To provide a user-friendly interface to report an emergency faster.
- To make the system maintainable and scalable.
- To create an effective system.
- To enhance authorization and security of the system

# User characteristics

**User Types?**

01 **Admin**

02 **Hospital staff**

**General Characteristics**

- ✓ Educational level
- ✓ Technical
- ✓ Motivation

# Assumptions, Constrains and Risks

01

## Assumptions

- System shall work smoothly with an efficient user experience interface
- System shall deliver the expected tasks with no errors
- System shall rapidly with no time lag

02

## Constrains

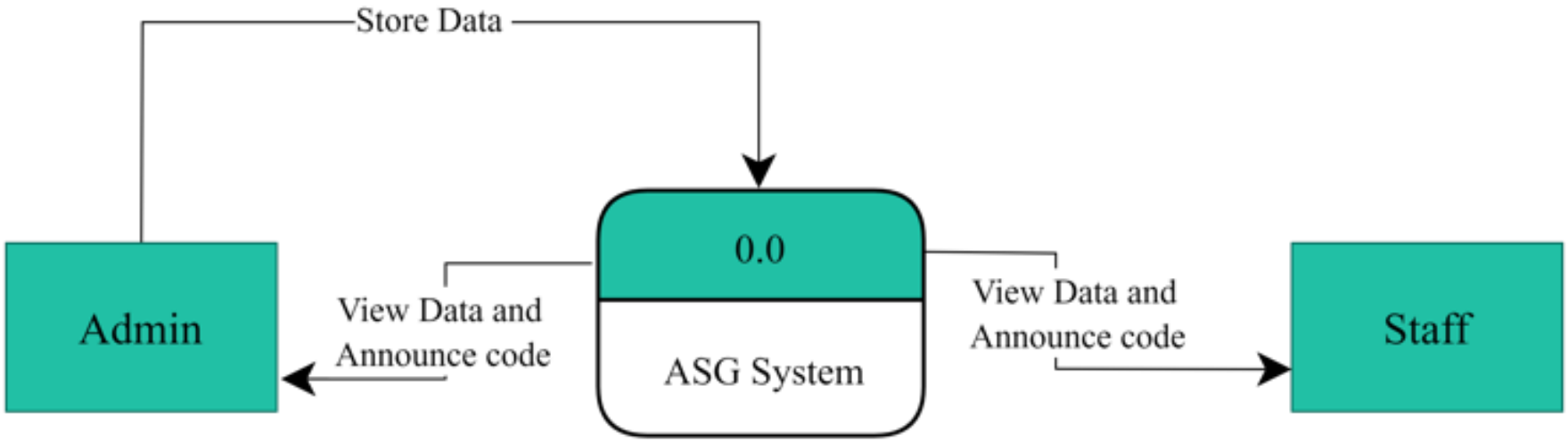
- Connecting to the hospital's database
- Maintaining the hospital's sound system

03

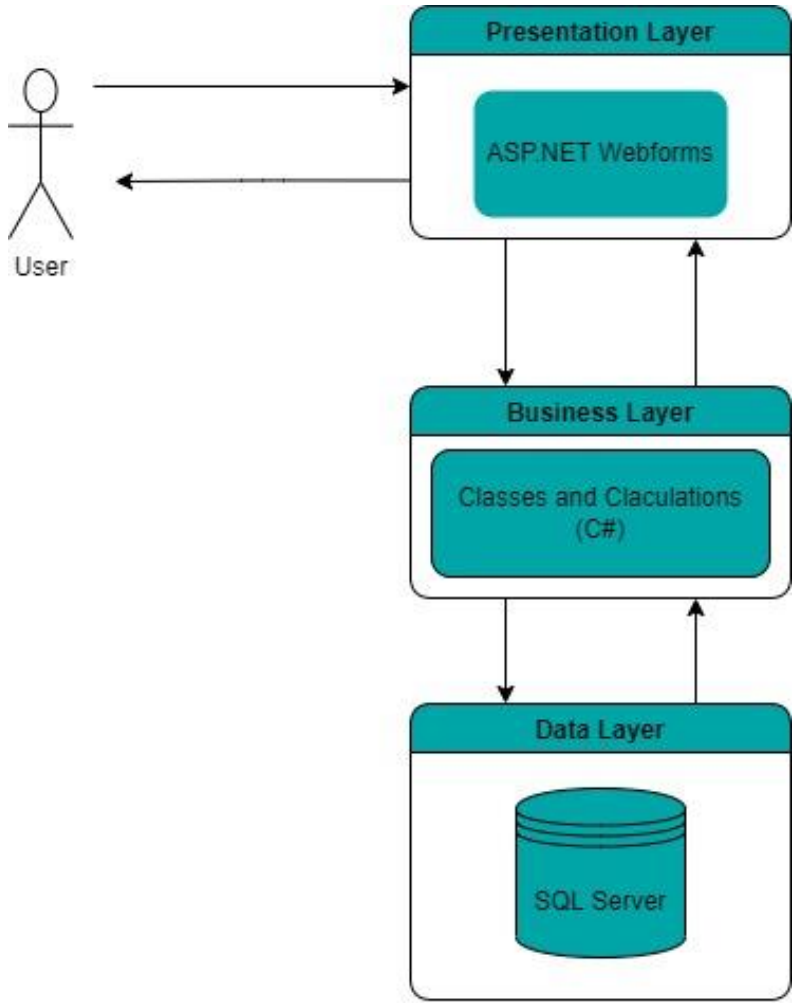
## Risks

- Lack of communication and collaboration among team members.
- When one of the team members leaves the project unexpectedly, there may be a lack of resources and knowledge.

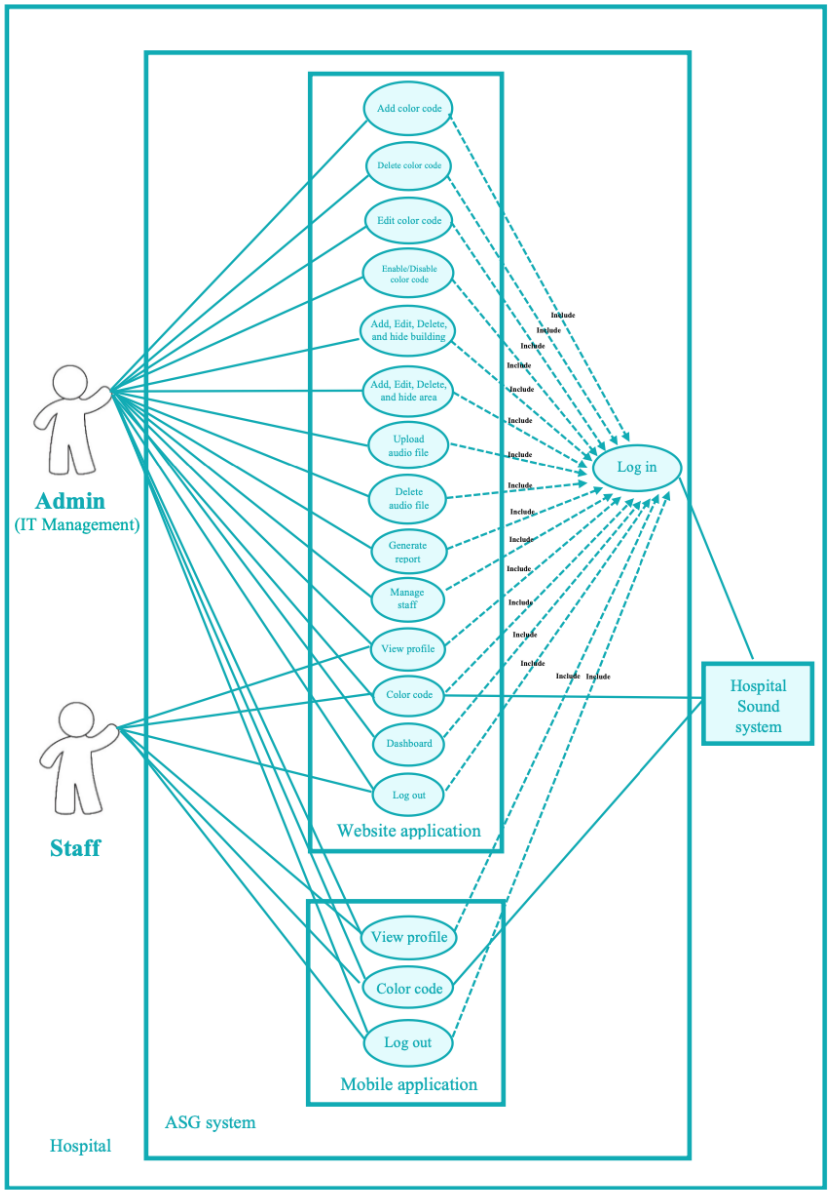
# System Overview



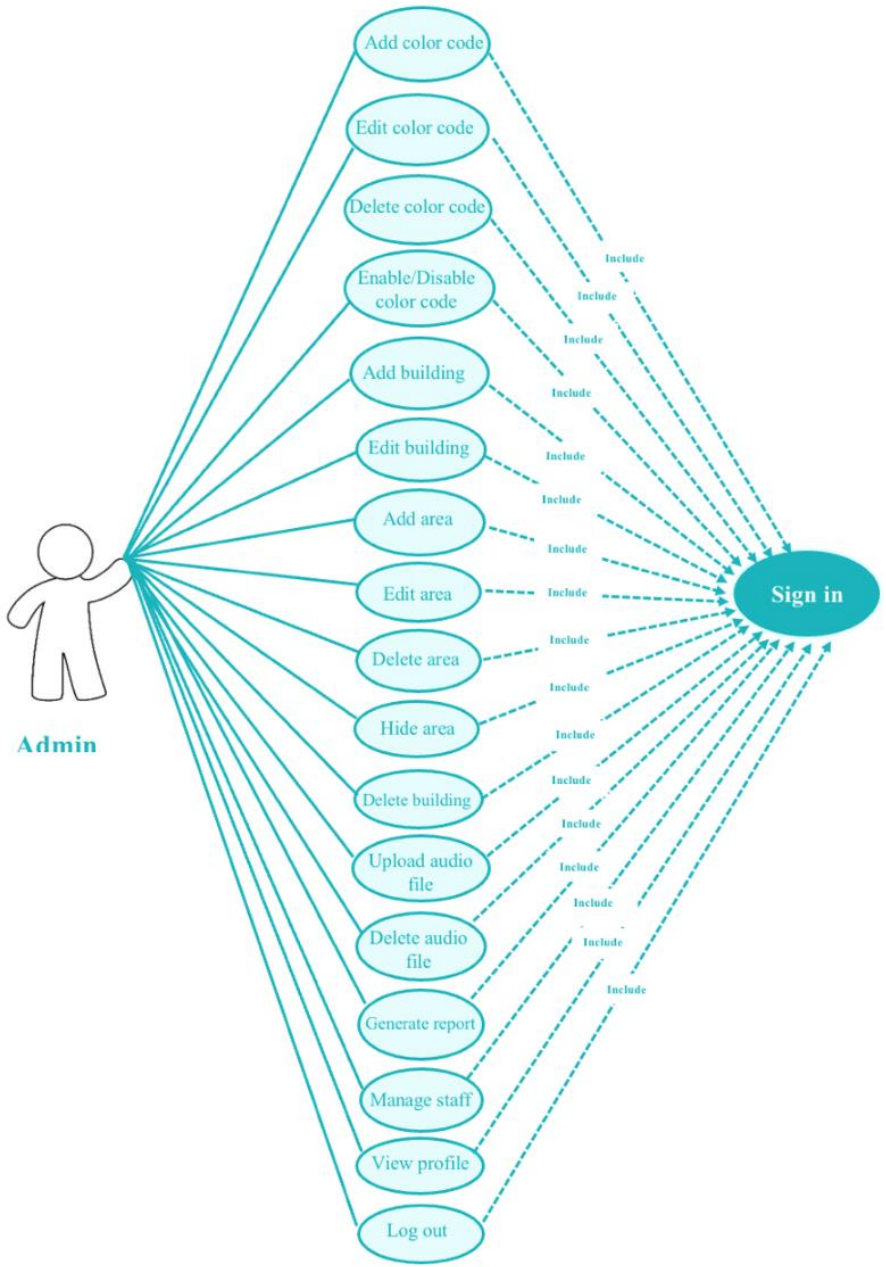
# System Architecture



# ASG Use case

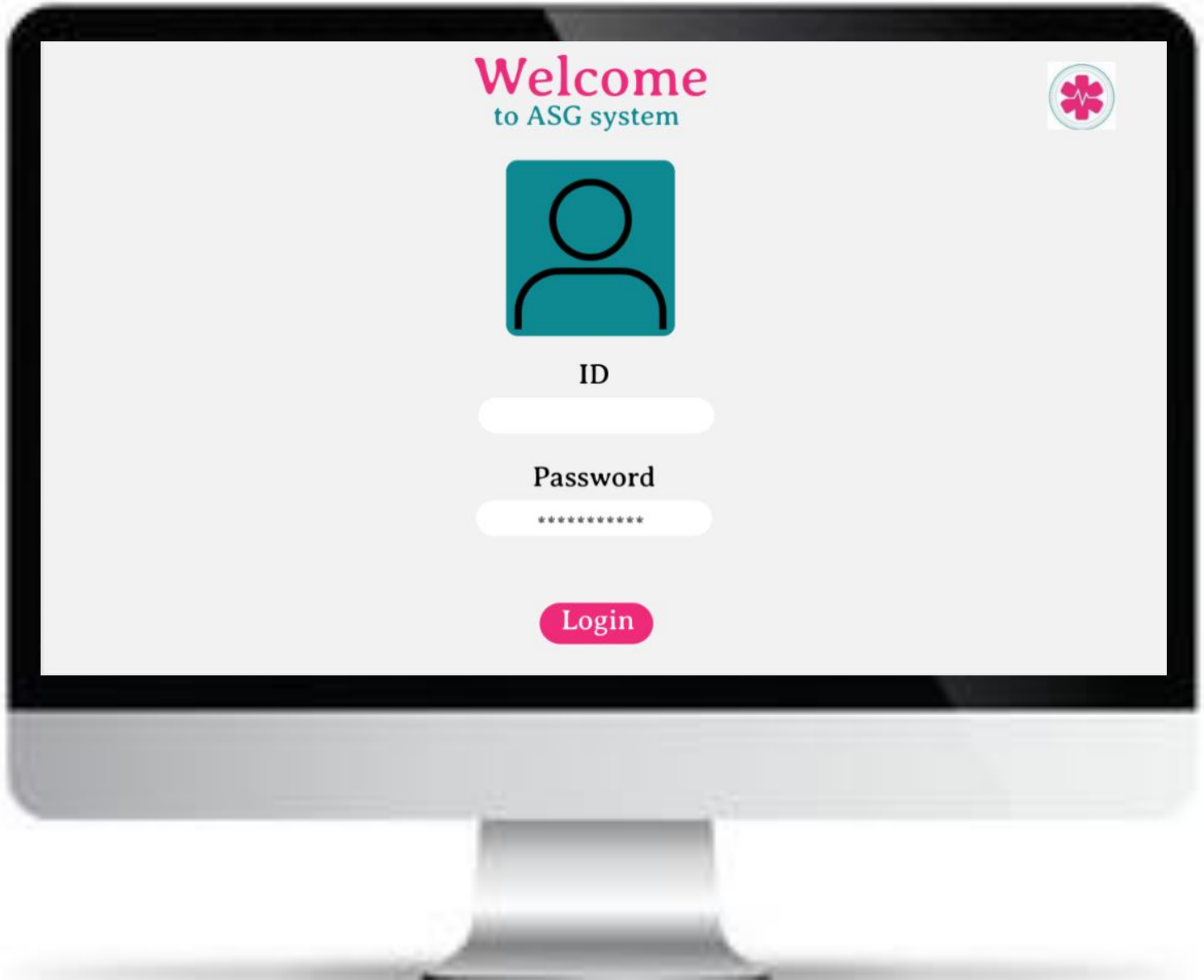

Add color code
Delete color code
Edit color code
Enable/Disable color code
Add, Edit, Delete, and hide building
Add, Edit, Delete, and hide area
Upload audio file
Delete audio file
Generate report
Manage staff
View profile
Color code
Dashboard
Log out
Website application
View profile
Color code
Log out
Mobile application
Include
Log in
Hospital Sound system
Admin
(IT Management)
Staff
ASG system
Hospital

# Admin Use case



# User Interface Design

## 1- Common interface



# Functional requirement

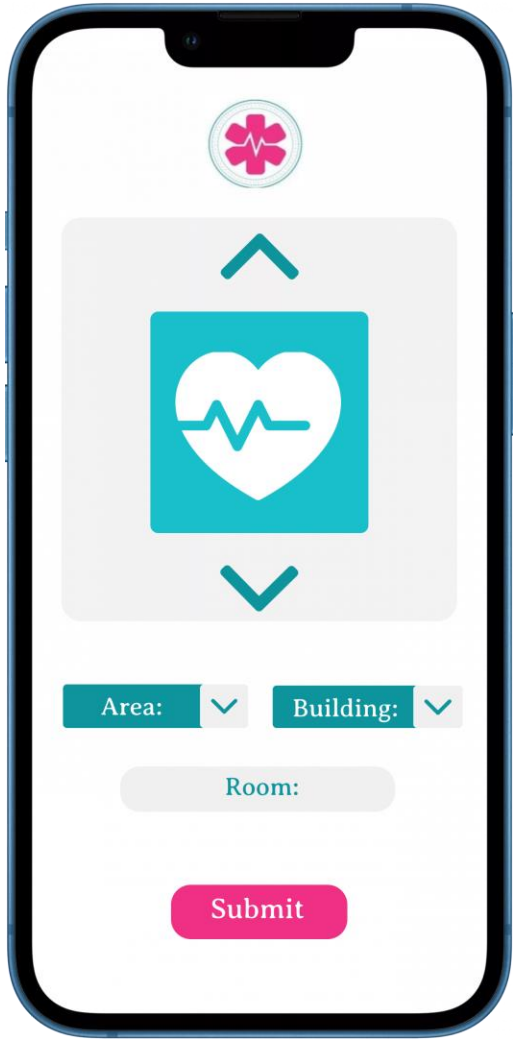
## 1- common functions

## Log in function

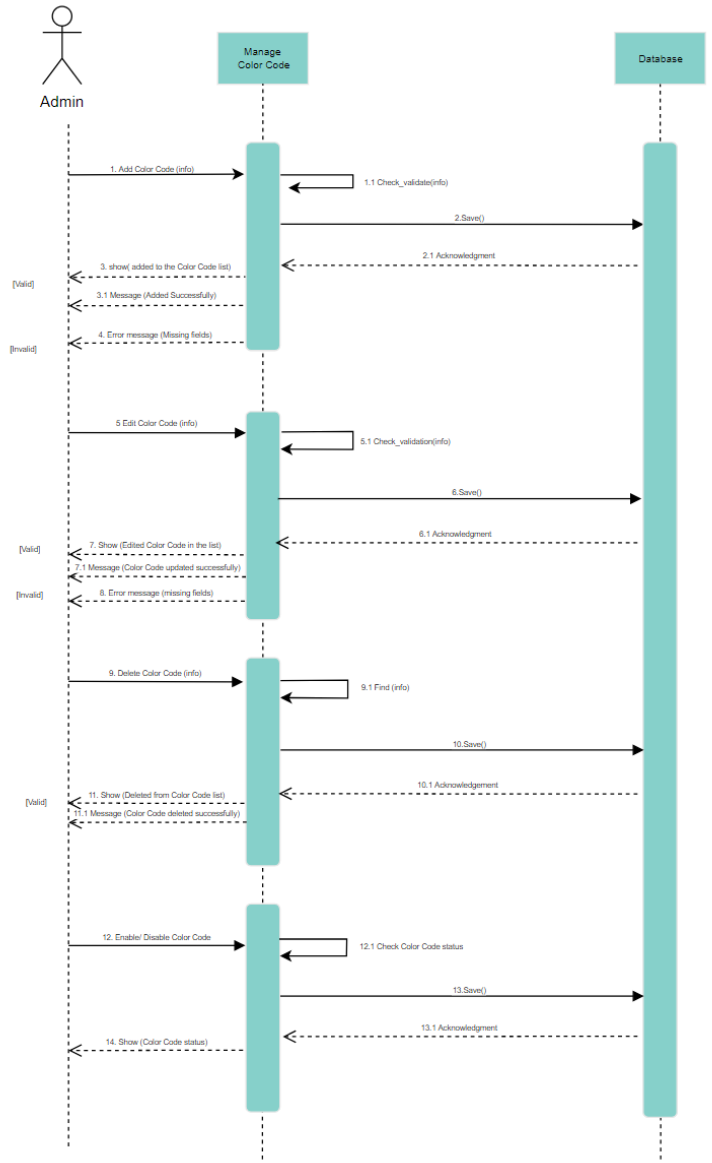
| Actors | Manager |
|---|---|
| Description | • The end-users must be able to log into the system by his/her username and password.<br>• Username and password must be correct and existent in the database of the hospital system.<br>• After the end-user log in to the system successfully, he/she will be transformed to his/her homepage. |
| Data | Username and Password |
| Stimulus | All end-users log in to the system by clicking the login button. |
| Response | • Admin: the admin main page is the “Manage system” page. It allows him/her to manage the system attributes.<br>• Staff member: their main page is the color code menu page. It allows them to choose the emergency case color code, area, building and type the room number if they want. |
| Abnormal Condition | If the username or password is incorrect, a message will occur "Incorrect username or password. Please try again" then the end-user can login again. |

# User Interface Design

## 1- Common interface



# Sequence diagram



# Functional requirement

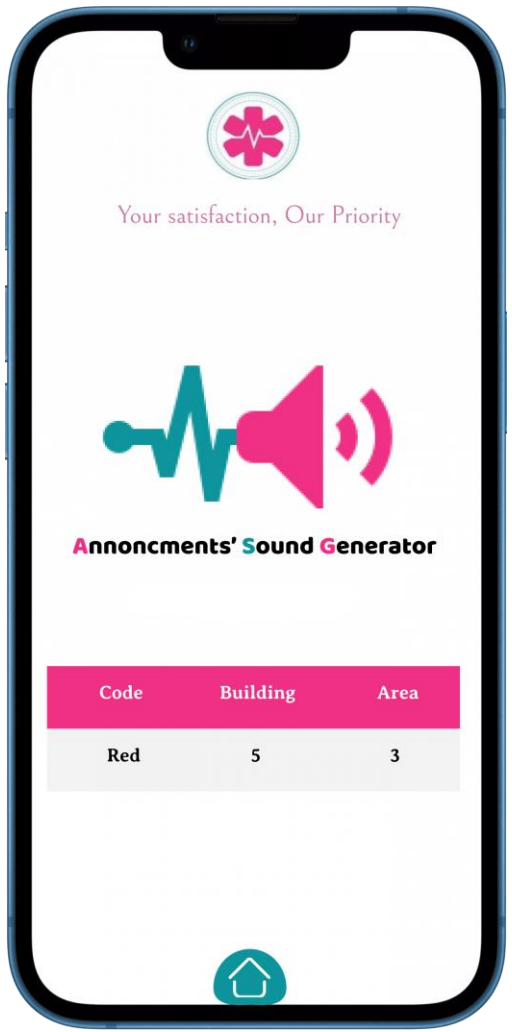
## 1- common functions

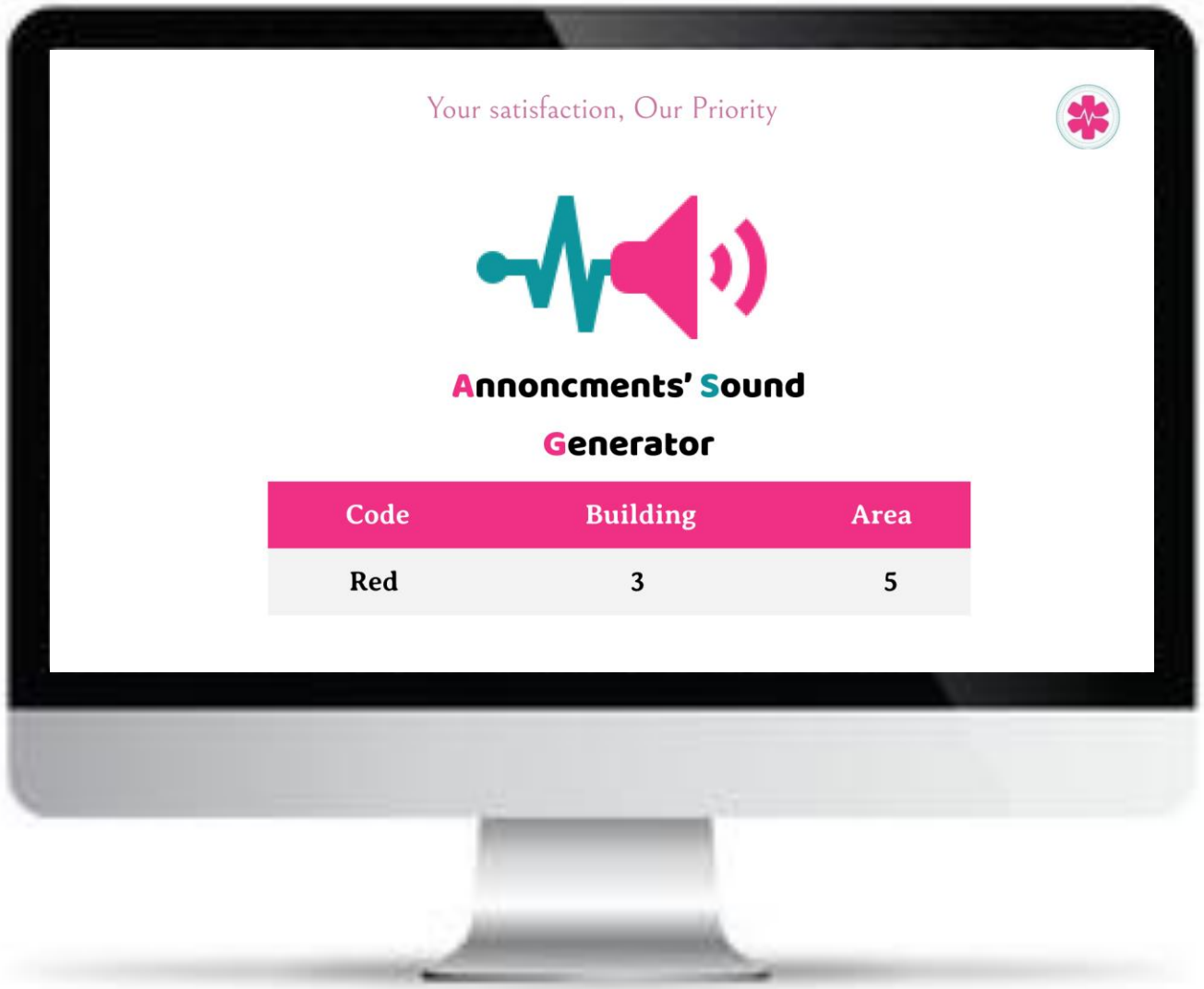
## CHOOSE COLOR CODE

| Actors | Manager |
|---|---|
| Description | The users choose the color code of the emergency to be announced, and then they select the area in which the announcement will be broadcast. |
| Data | • Color code<br>• Area's name<br>• Building's name<br>• Room's number |
| Stimulus | • Choose the color code<br>• Select the area, building, and room<br>• Click on submit |
| Response | If an emergency announcement is currently running and you choose a second announcement, it will be executed once the first announcement is completed, unless the color code is blue that is the heart code, in which this code has the highest priority |

# User Interface Design

## 1- Common interface



# User Interface Design

## 2- Admin interface

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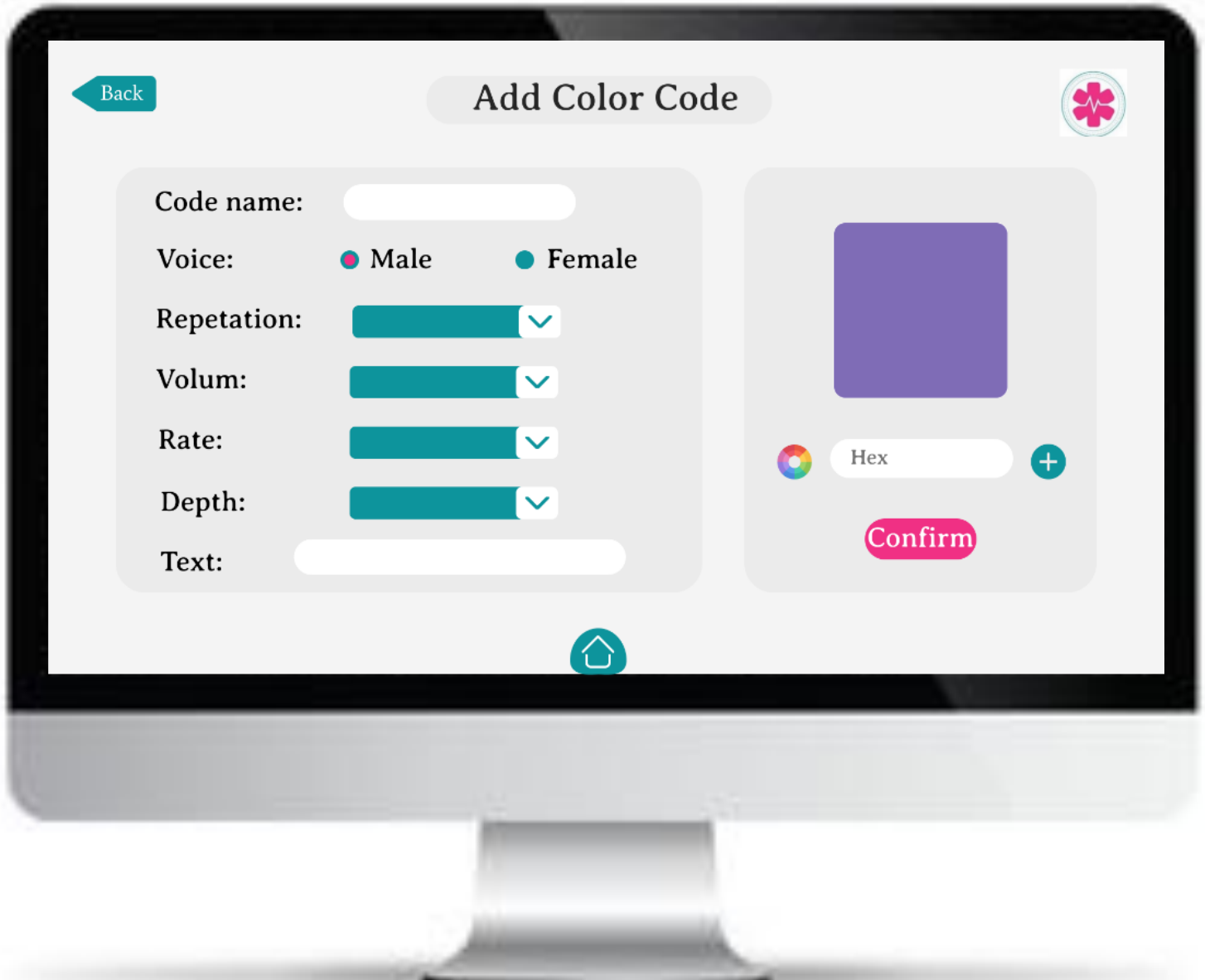
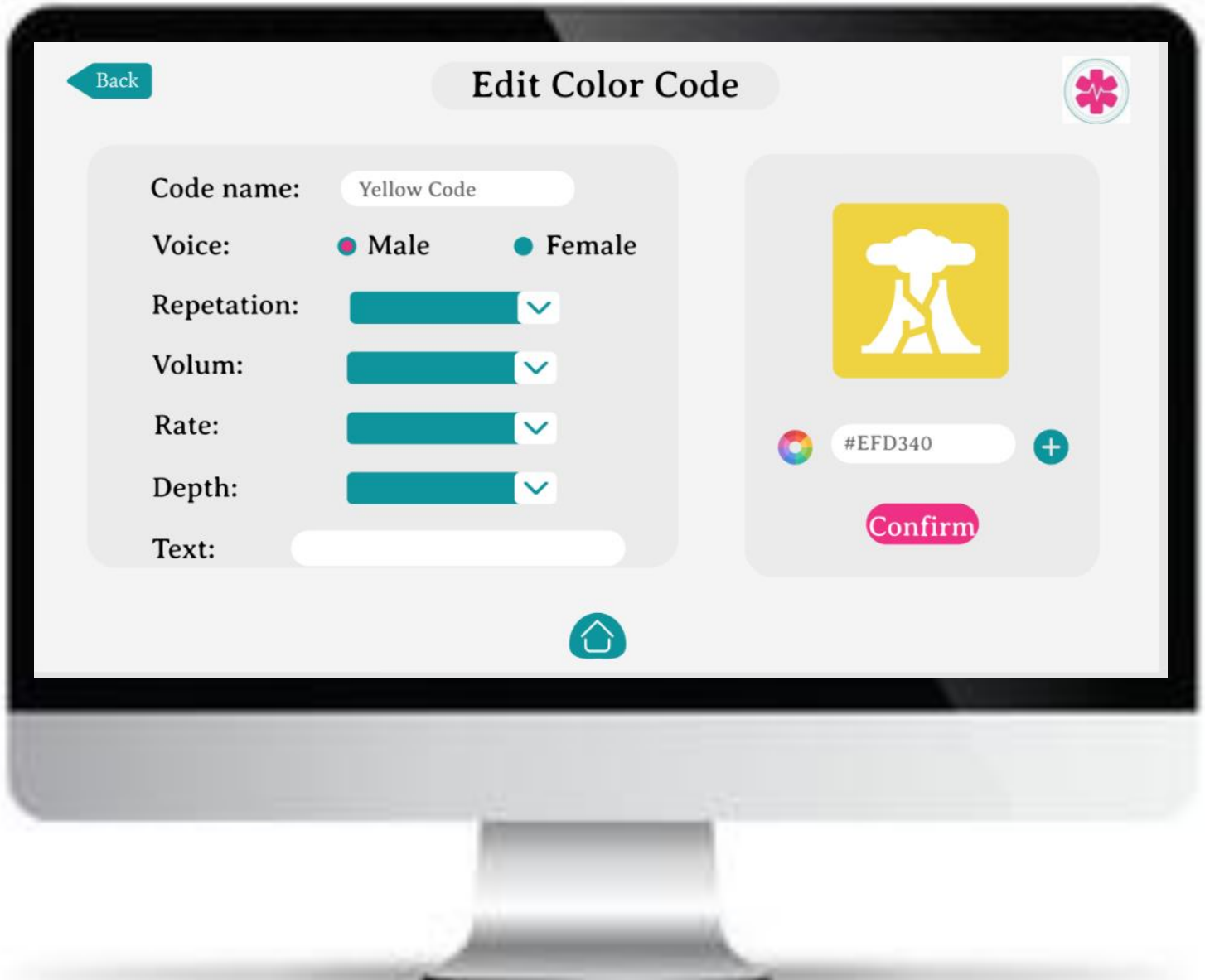
## 2- Admin interface



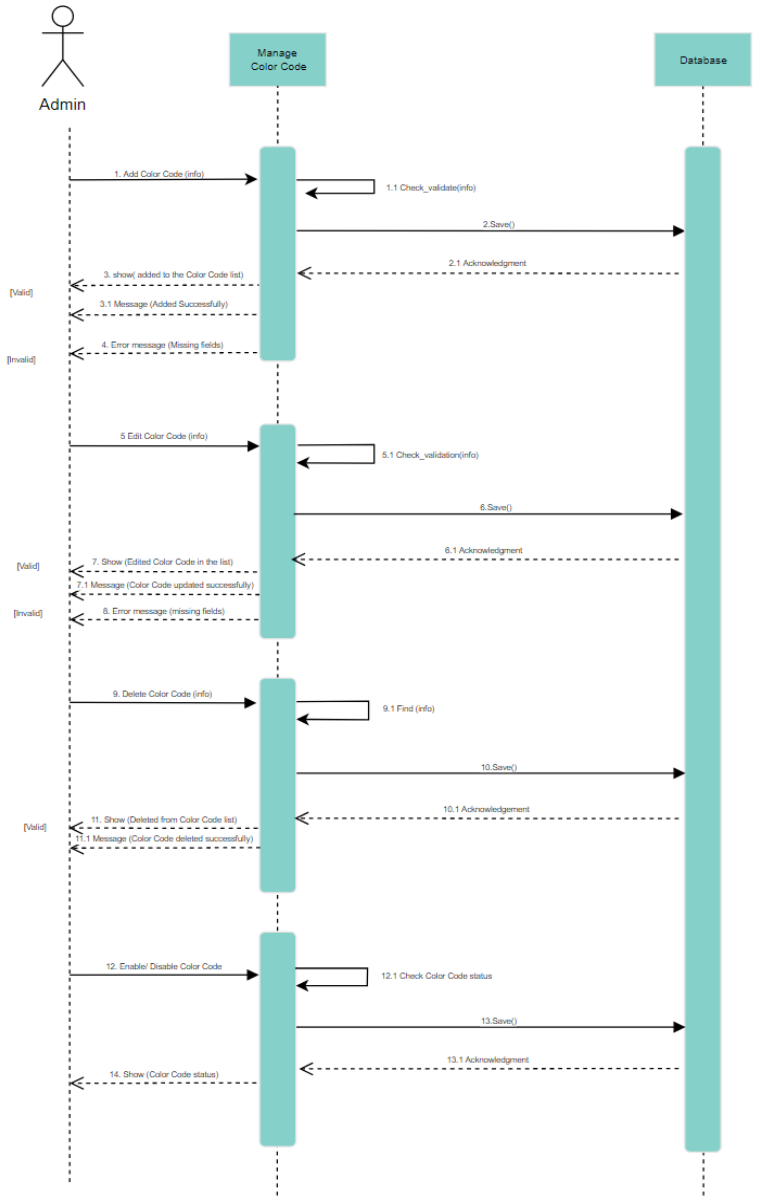
# User Interface Design

## 2- Admin interface



# Sequence diagram

## MANAGE COLOR CODE



# Functional requirement

## 2- Admin functions

### ADD COLOR

| Actors | Manager |
|---|---|
| Description | The admin can add a new color code, specifying the properties of it. |
| Data | Name, icon, color ,gender of the voice, announcement repetition times, depth, rate, volume level, and announcement text. |
| Stimulus | Admin press the “Confirm” button. |
| Response | The selected color code will be added to the ASG system. |
| Abnormal Condition | • If some of the required fields are missing, then an error message will appear to notify the admin.<br>• If the color code already exists, then the admin will be notified by a pop-up error message.<br>• If the entered data did not match the datatype of the required field, then, a message window will appear to notify the admin. |

# Functional requirement

## 2- Admin functions

### EDIT COLOR

| Actors | Manager |
|---|---|
| Description | The admin can edit the properties of an existing color code. |
| Data | Name, icon, color, gender of the voice, announcement repetition times, depth, rate, volume level, and the announcement text. |
| Stimulus | Admin press the “Confirm” button. |
| Response | The color code will be updated with the new properties in the ASG system. |
| Abnormal Condition | • If some of the required fields are missing, then an error message will appear to notify the admin.<br>• If the color code already exists, then the admin will be notified by a pop-up error message.<br>• If the entered data did not match the datatype of the required field, then, a message window will appear to notify the admin. . |

# Functional requirement

## 2- Admin functions

### DELETE COLOR

| Actors | Manager |
|---|---|
| Description | The admin can delete a color code. |
| Data | Name, icon, color, gender of the voice, announcement repetition times, depth, rate, volume level, and the announcement text. |
| Stimulus | Admin press the “Confirm” button. |
| Response | A new color code will be deleted from the ASG system. |
| Abnormal Condition | • If the admin did not confirm the delete operation, the color code will not be added to the system. |

# Functional requirement

## 2- Admin functions

### ENABLE/DISABLE COLOR CODE

| Actors | Manager |
|---|---|
| Description | The admin can enable the color code, so it could be visible to the staff. |
| Stimulus | Admin switch the button on. |
| Response | The color code will be visible to the staff. |

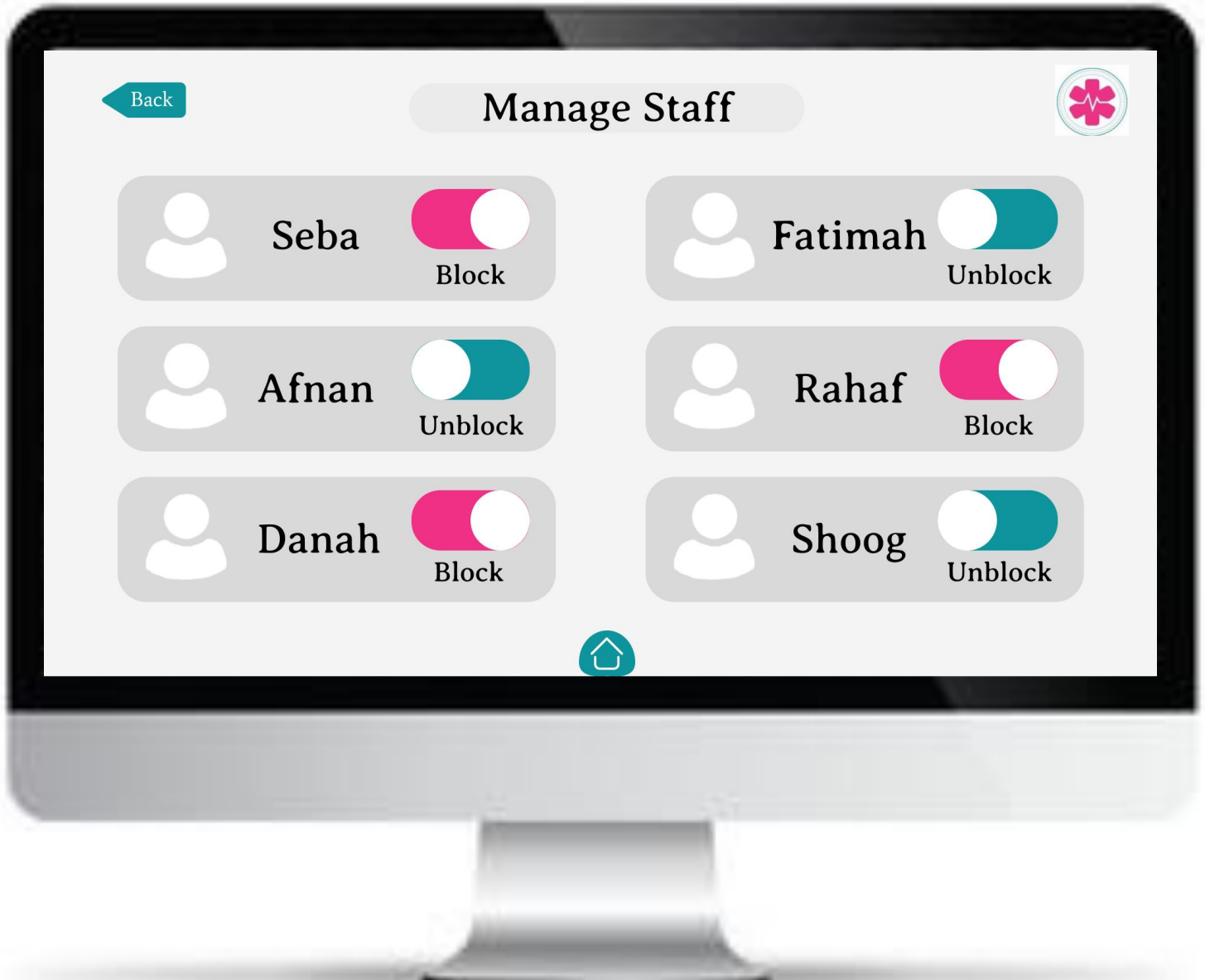
| Actors | Manager |
|---|---|
| Description | The admin can disable the color code, so it could be invisible to the staff. |
| Stimulus | Admin switch the button to off |
| Response | The color code will be invisible to the staff. |

# User Interface Design

## 2- Admin Main interface

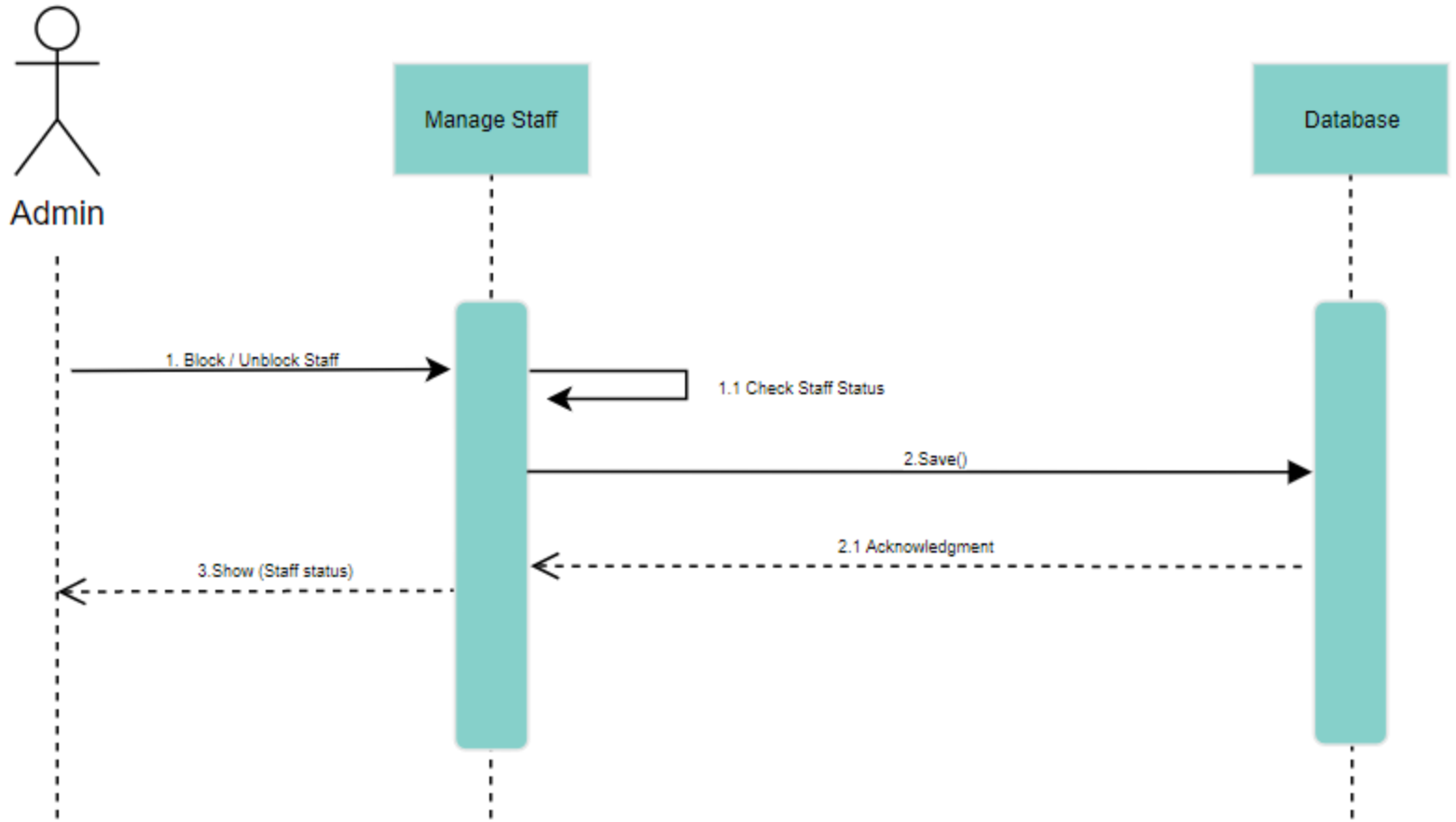
# User Interface Design

## 2- Admin interface



# Sequence diagram

## MANAGE STAFF



# Functional requirement

## 2- Admin functions

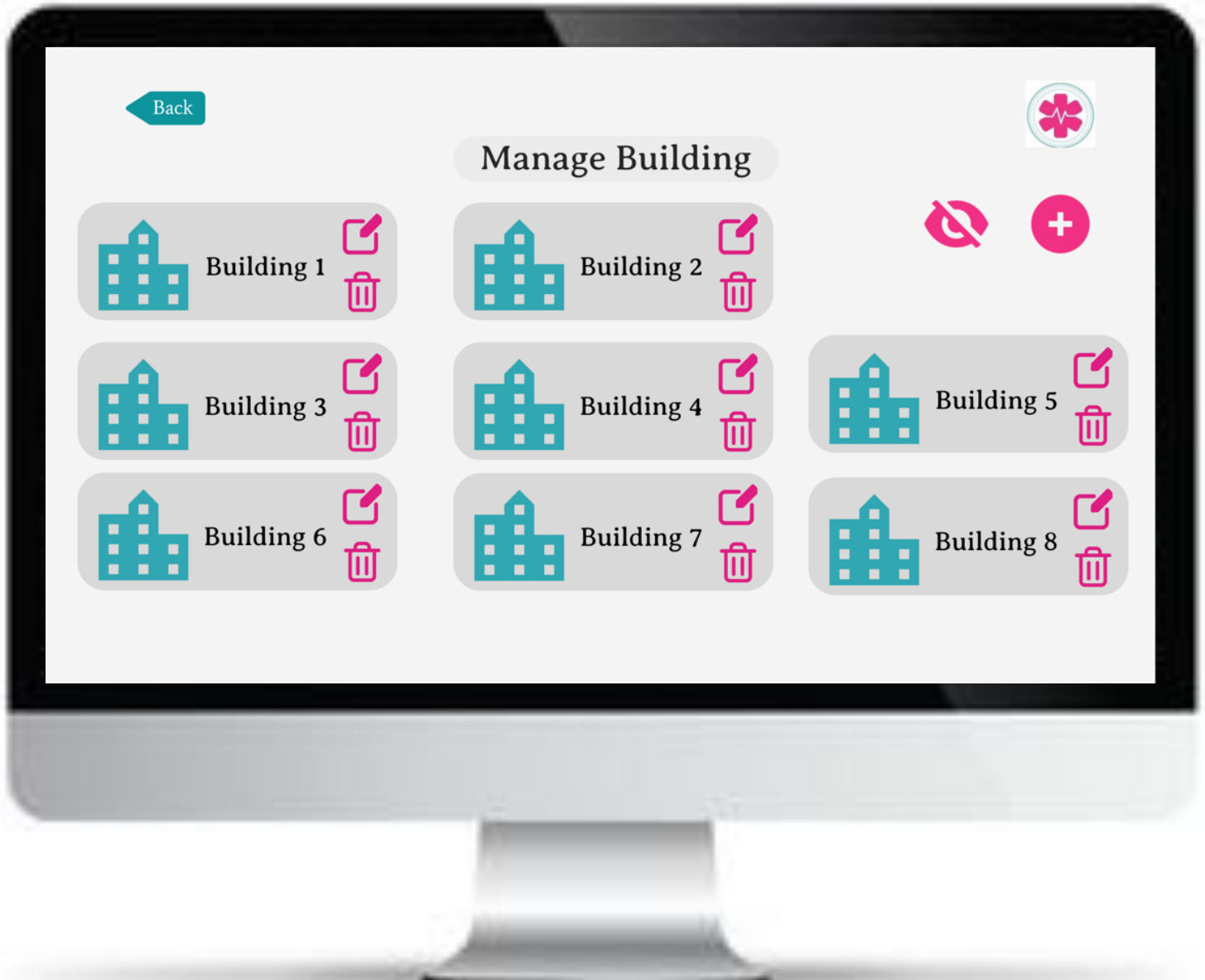
### BLOCK/UNBLOCK COLOR CODE

| Actors | Manager |
|---|---|
| Description | The admin can block the user, the user will be blocked from using the system. |
| Data | Usernames |
| Stimulus | Admin switch the button to on. |
| Response | the user will be blocked from using the system. |
| Abnormal Condition | - |

| Actors | Manager |
|---|---|
| Description | The admin can unblock the user, the user will be unblocked from using the system. |
| Data | Usernames |
| Stimulus | Admin switch the button to off. |
| Response | the user will be unblocked from using the system. |
| Abnormal Condition | - |

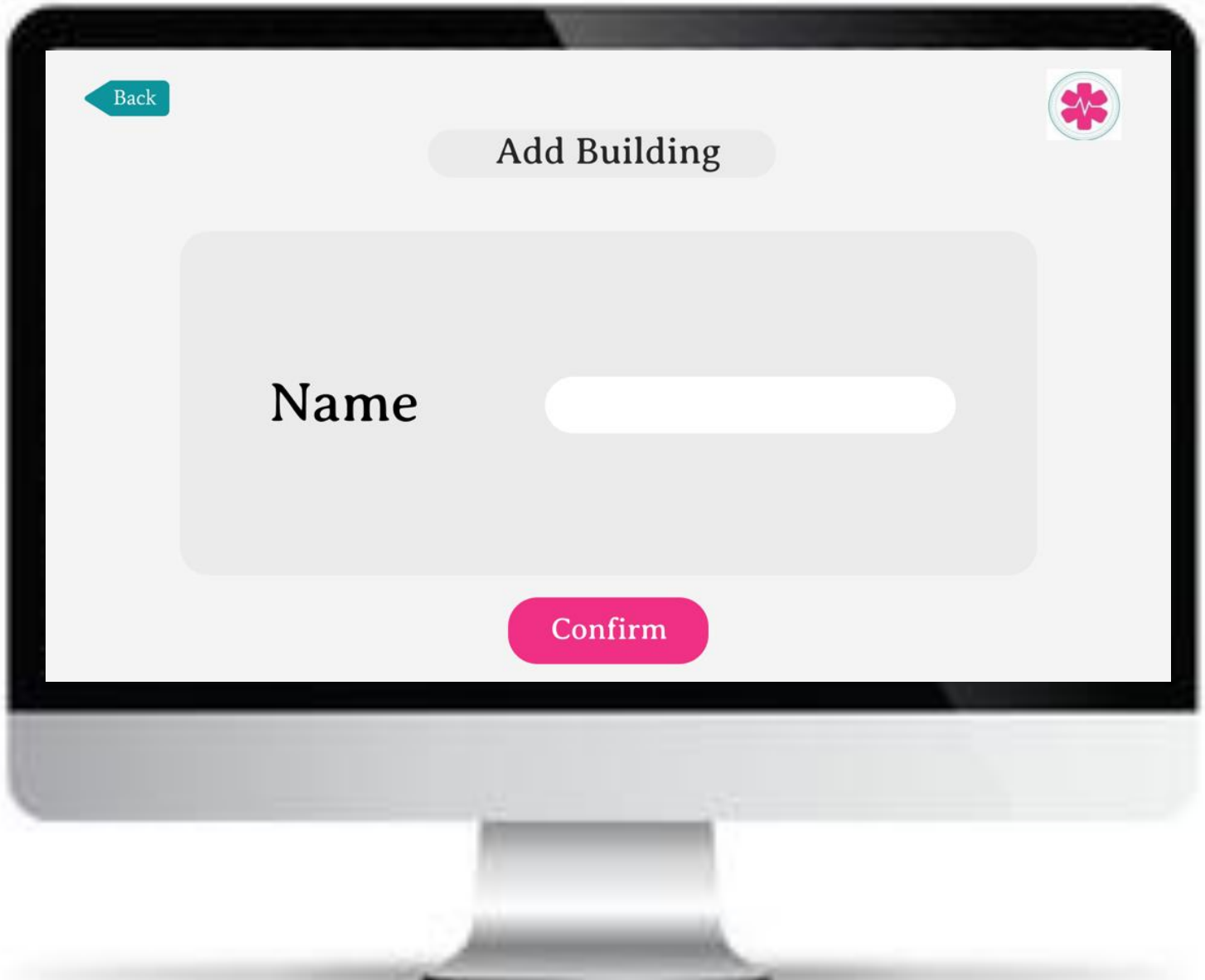
# User Interface Design

## 2- Admin interface



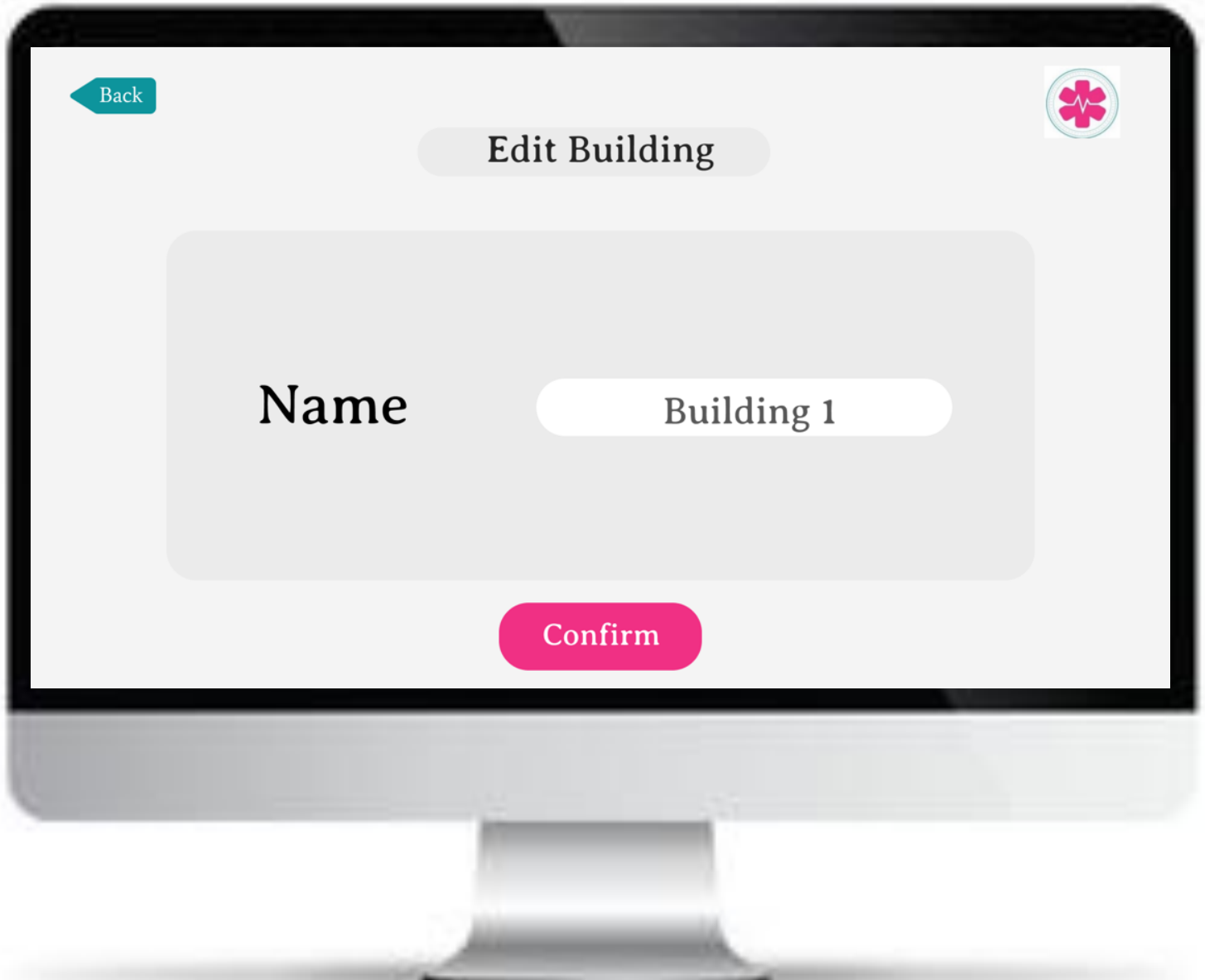
# User Interface Design

## 2- Admin interface



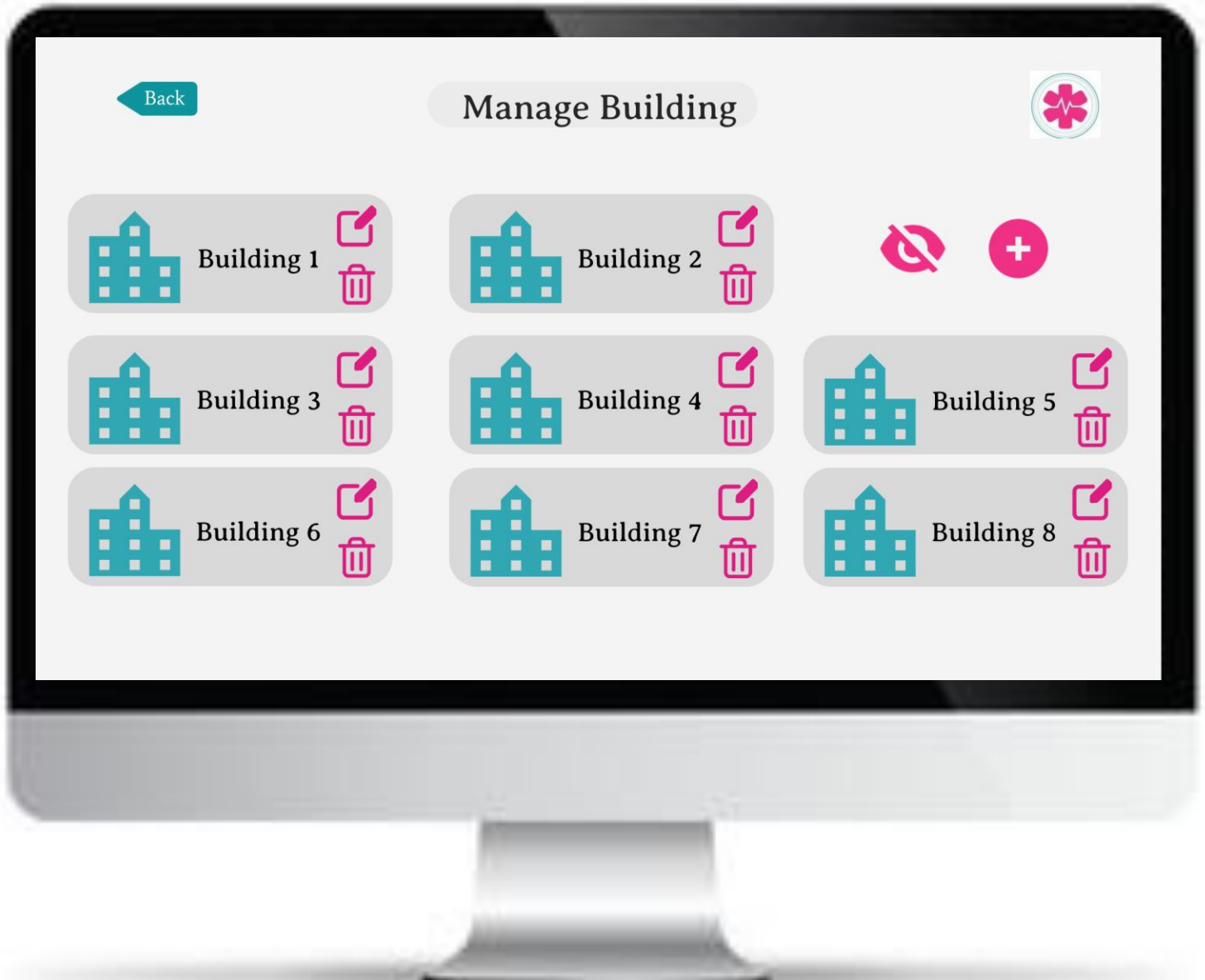
# User Interface Design

## 2- Admin interface

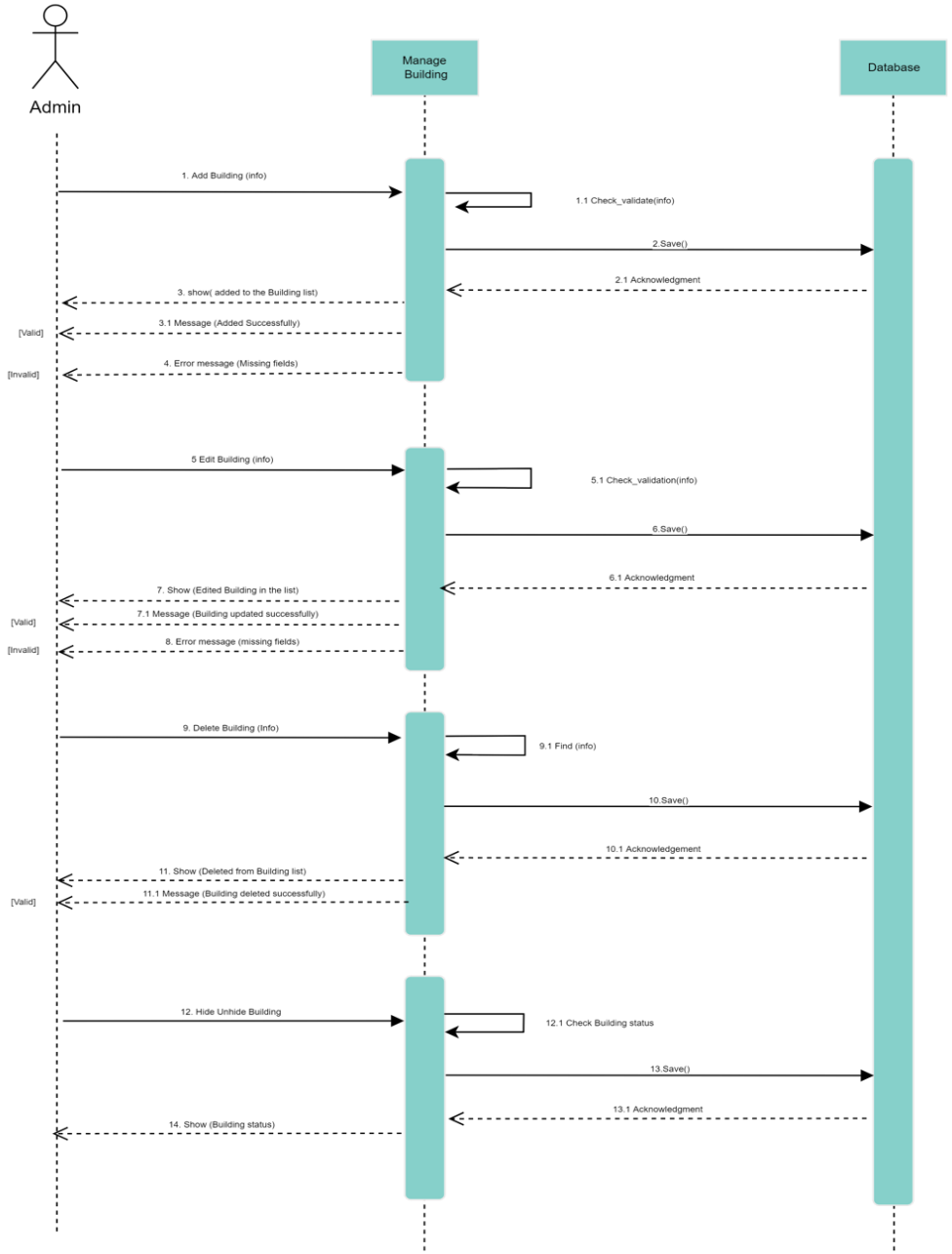


# User Interface Design

## 2- Admin interface



# Sequence diagram




MANAGE BUILDING

# Functional requirement

## 2- Admin functions

### ADD/DELETE BUILDING

| Actors | Manager |
|---|---|
| Description | The admin can add a building. |
| Data | New building's name. |
| Stimulus | • Admin clicks the "Confirm" button.<br>• Admin clicks "Back" button. |
| Response | • If he/she clicks "Confirm" button: A new building will be added to the ASG system.<br>• If he/she clicks "Back" button: return to manage buildings page. |
| Abnormal Condition | • If he/she clicks "confirm" without typing a building's new name, then an error message will appear to notify the admin.<br>• If the new building already exists, then the admin will be notified by a pop-up error message.<br>• If the entered data did not match the datatype of the required field, then a message window will appear to notify the admin. |

| Actors | Manager |
|---|---|
| Description | The admin can delete a building. |
| Data | The building's name. |
| Stimulus | • Admin press the "Confirm" button.<br>• Admin press "Back" button. |
| Response | • If he/she clicks "Confirm" button: The specified building will be deleted from the system.<br>• If he/she clicks "Back" button: return back to manage buildings page. |
| Abnormal Condition | • If he/she clicks "confirm" without typing building's name, then an error message will appear to notify the admin.<br>• If the building does not exist, then the admin will be notified by a pop-up error message.<br>• If the entered data does not match the datatype of the required field, then a message window will appear to notify the admin. |

# Functional requirement

## 2- Admin functions

### EDIT/HIDE BUILDING

| Actors | Manager |
|---|---|
| Description | The admin can edit a building. |
| Data | • Building's current name.<br>• Building's new name. |
| Stimulus | • Admin press the "Confirm" button.<br>• Admin press "Back" button. |
| Response | • If he/she clicks "Confirm" button: The name of the specified building will be changed.<br>• If he/she clicks "Back" button: return to manage buildings page. |
| Abnormal Condition | • If he/she clicks "confirm" without typing building's name, then an error message will appear to notify the admin.<br>• If the building does not exist, then the admin will be notified by a pop-up error message.<br>• If the entered data does not match the datatype of the required field, then a message window will appear to notify the admin. |

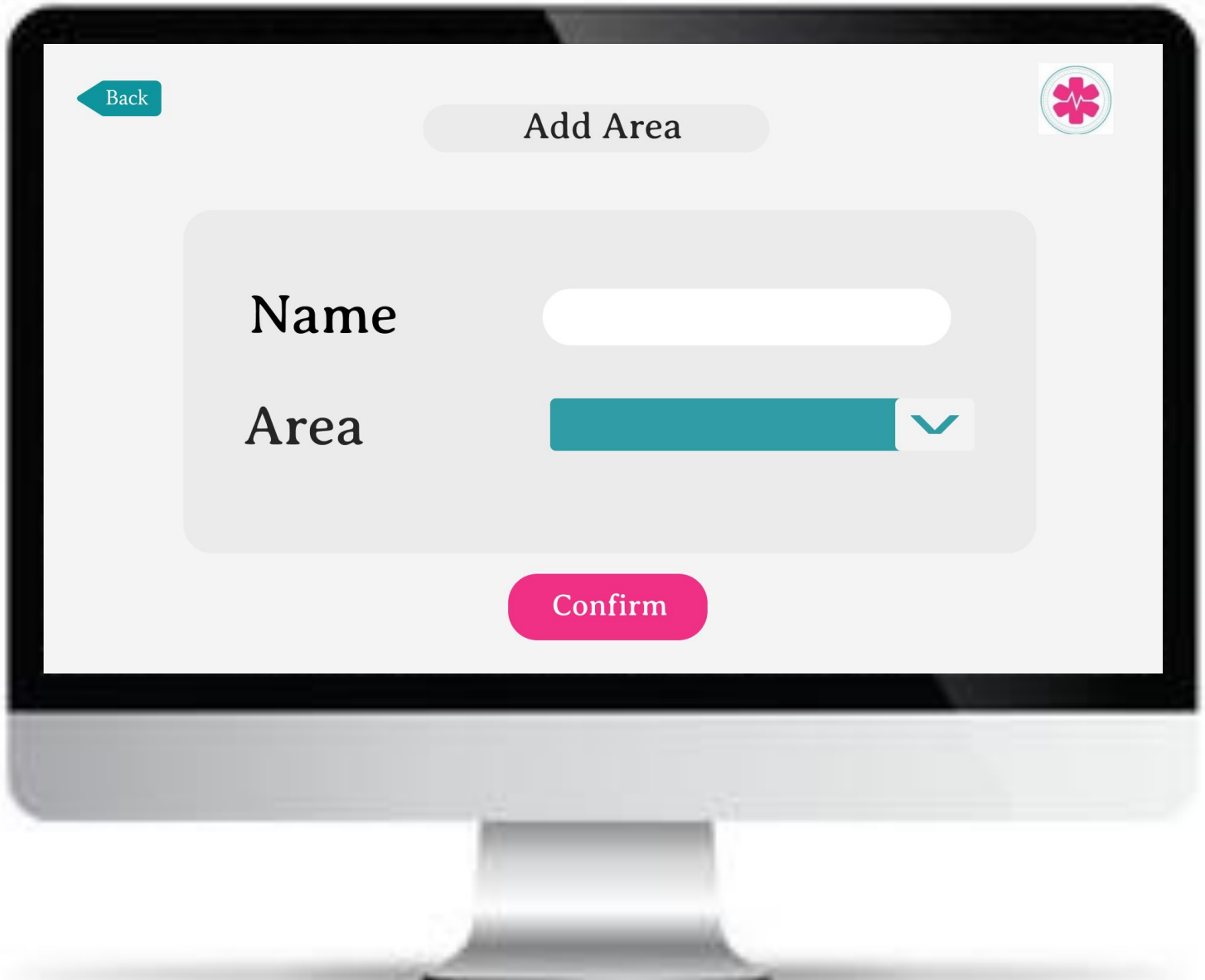
| Actors | Manager |
|---|---|
| Description | The admin can hide a building from appearing to users. |
| Data | Building's name. |
| Stimulus | • Admin switch the button to off.<br>• Admin switch the button on. |
| Response | • If admin switches it off: The specified building will be invisible to the staff.<br>• If admin switches it on: The specified building will be visible to the staff. |
| Abnormal Condition | - |

# User Interface Design

## 2- Admin interface

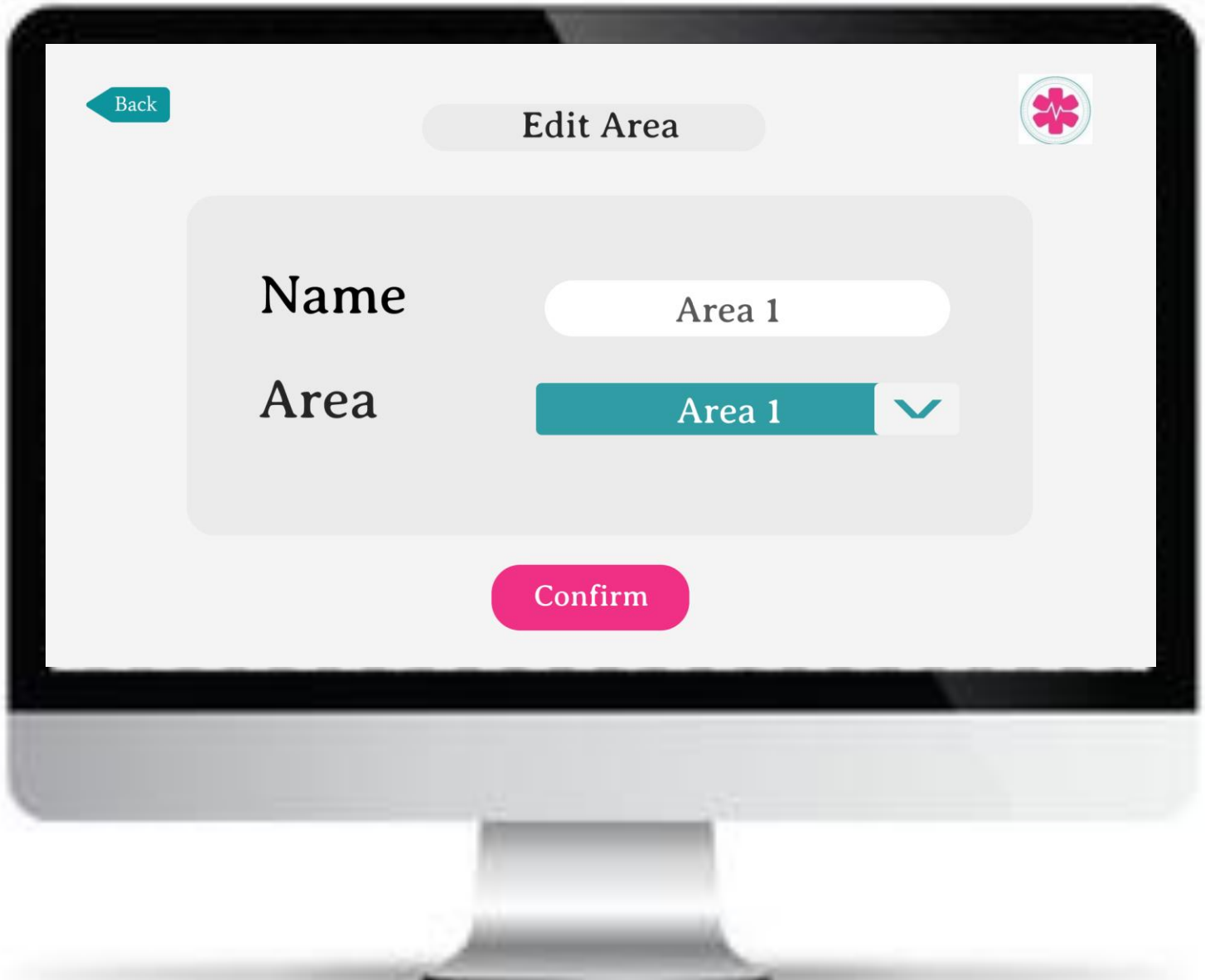
# User Interface Design

## 2- Admin interface



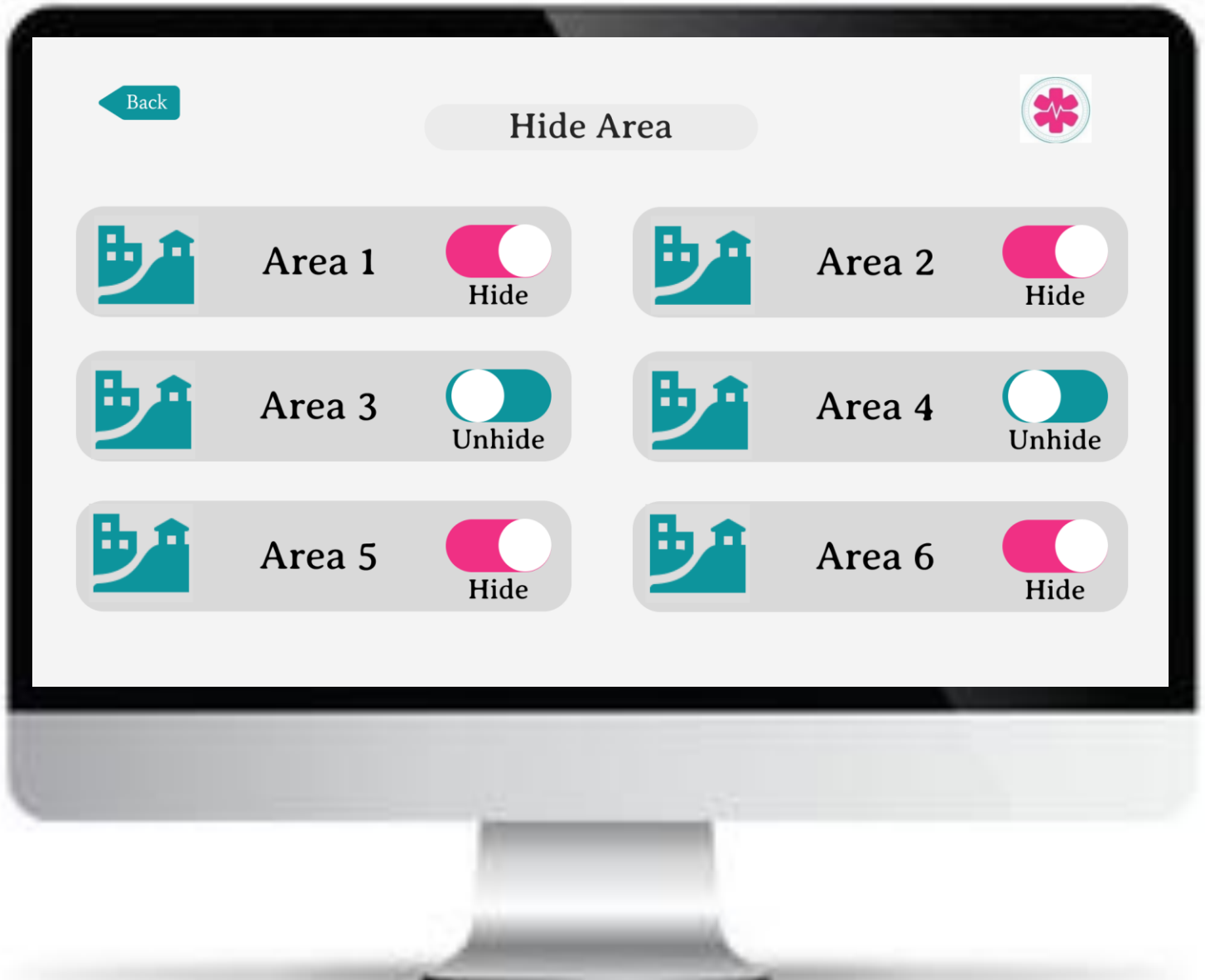
# User Interface Design

## 2- Admin interface

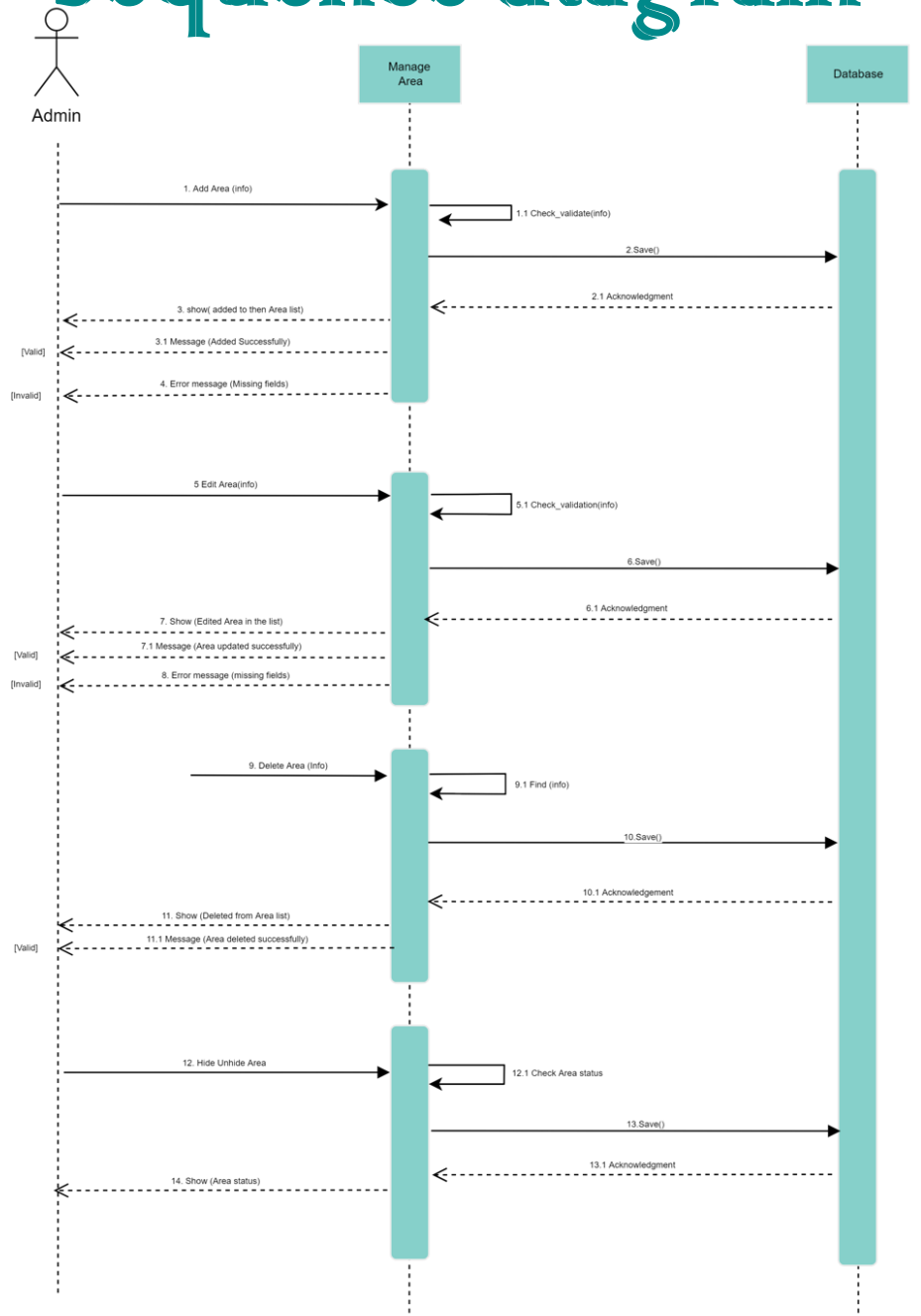


# User Interface Design

## 2- Admin interface



# Sequence diagram




MANAGE AREA

# Functional requirement

## 2- Admin functions

### ADD/DELETE AREA

| Actors | Manager |
|---|---|
| Description | The admin can add an area. |
| Data | New area's name. |
| Stimulus | • Admin clicks the "Confirm" button.<br>• Admin clicks "Back" button. |
| Response | • If admin clicks "Confirm" button: A new area will be added to the ASG system.<br>• If admin clicks "Back" button: return back to manage areas page. |
| Abnormal Condition | • If admin clicks "confirm" with any missing information, then an error message will appear to notify the admin.<br>• If the area already exists, then the admin will be notified by a pop-up error message.<br>• If the entered data did not match the datatype of the required field, then a message window will appear to notify the admin. |

| Actors | Manager |
|---|---|
| Description | The admin can delete an area. |
| Data | The area's name. |
| Stimulus | Admin clicks the "Confirm" button.<br>Admin clicks "Back" button. |
| Response | • When dicking "Confirm" button: The specified area will be deleted from the system.<br>• When clicking "Back" button return back to manage areas page. |
| Abnormal Condition | • When dicking "confirm" without typing area's name, then an error message will appear to notify the admin.<br>• If the area does not exist, then the admin will be notified by a pop-up error message.<br>• If the entered data did not match the datatype of the required field, then a message window will appear to notify the admin. |

# Functional requirement

## 2- Admin functions

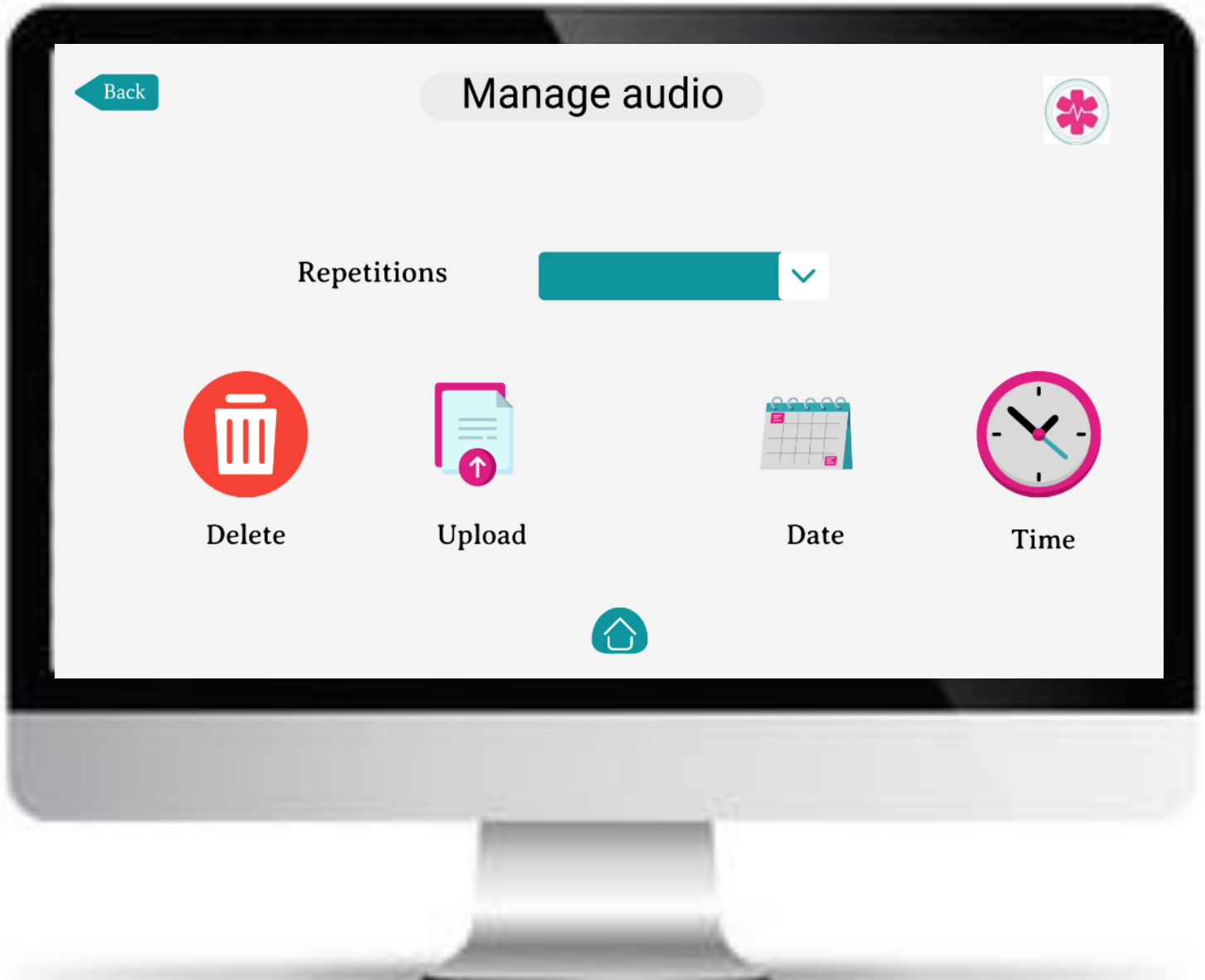
### EDIT/HIDE AREA

| Actors | Manager |
|---|---|
| Description | The admin can edit an area. |
| Data | • Area's current name.<br>• Area's new name. |
| Stimulus | • Admin press the "Confirm" button.<br>• Admin press "Back" button. |
| Response | • When clicking "Confirm" button: The name specified area will be changed.<br>• When clicking "Back" button return back to manage areas page. |
| Abnormal Condition | • When dicking "confirm" without typing area's name, an error message will appear to notify the admin.<br>• If the area does not exist, then the admin will be notified by a pop-up error message.<br>• If the entered data did not match the datatype of the required field, then a message window will appear to notify the admin. |

| Actors | Manager |
|---|---|
| Description | The admin can hide areas. |
| Stimulus | • Admin switch the button to off.<br>• Admin switch the button on. |
| Response | • When switching off: The specified area will be invisible to the staff.<br>• When switching on: The specified area will be visible to the staff. |

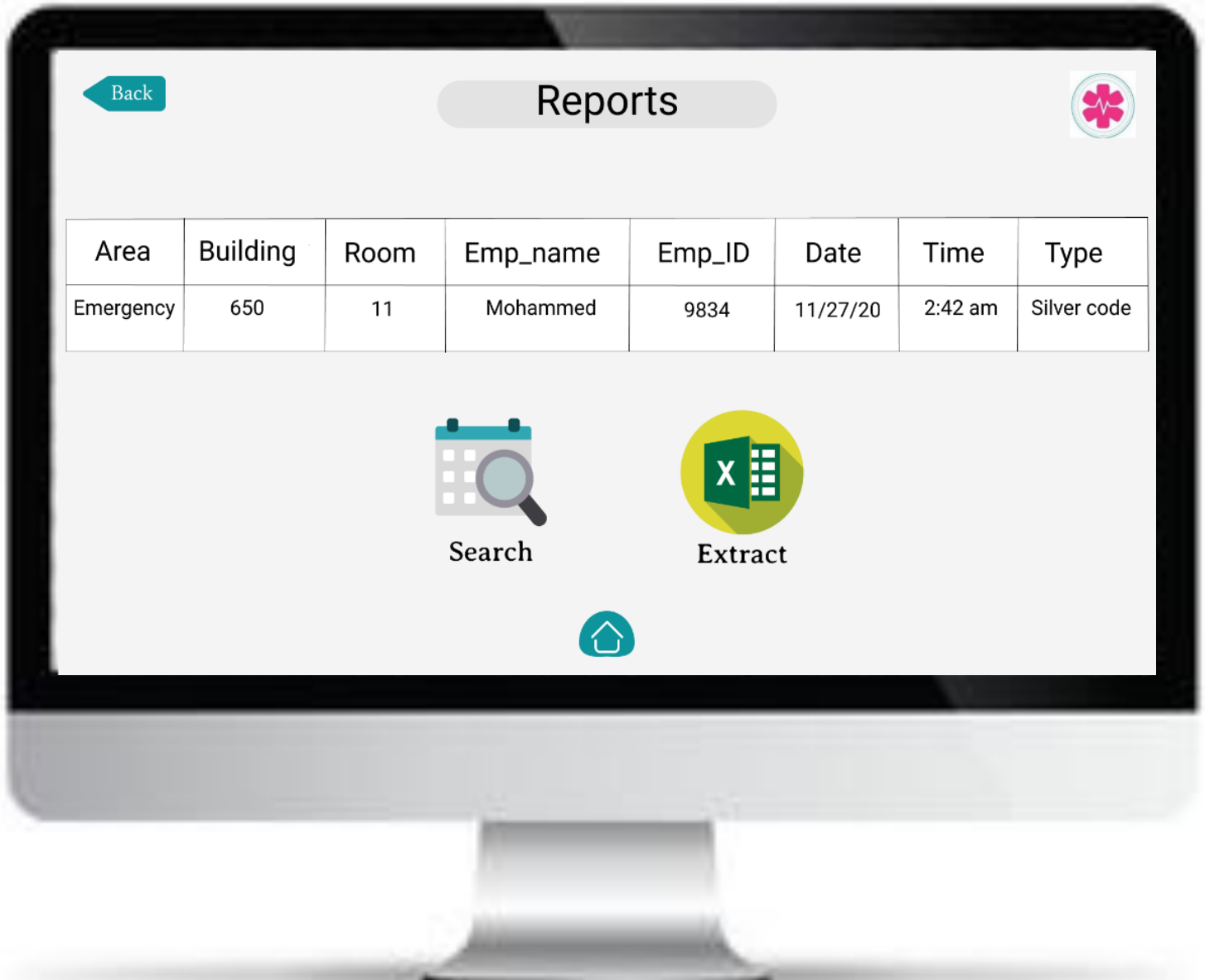
# User Interface Design

## 2- Admin interface

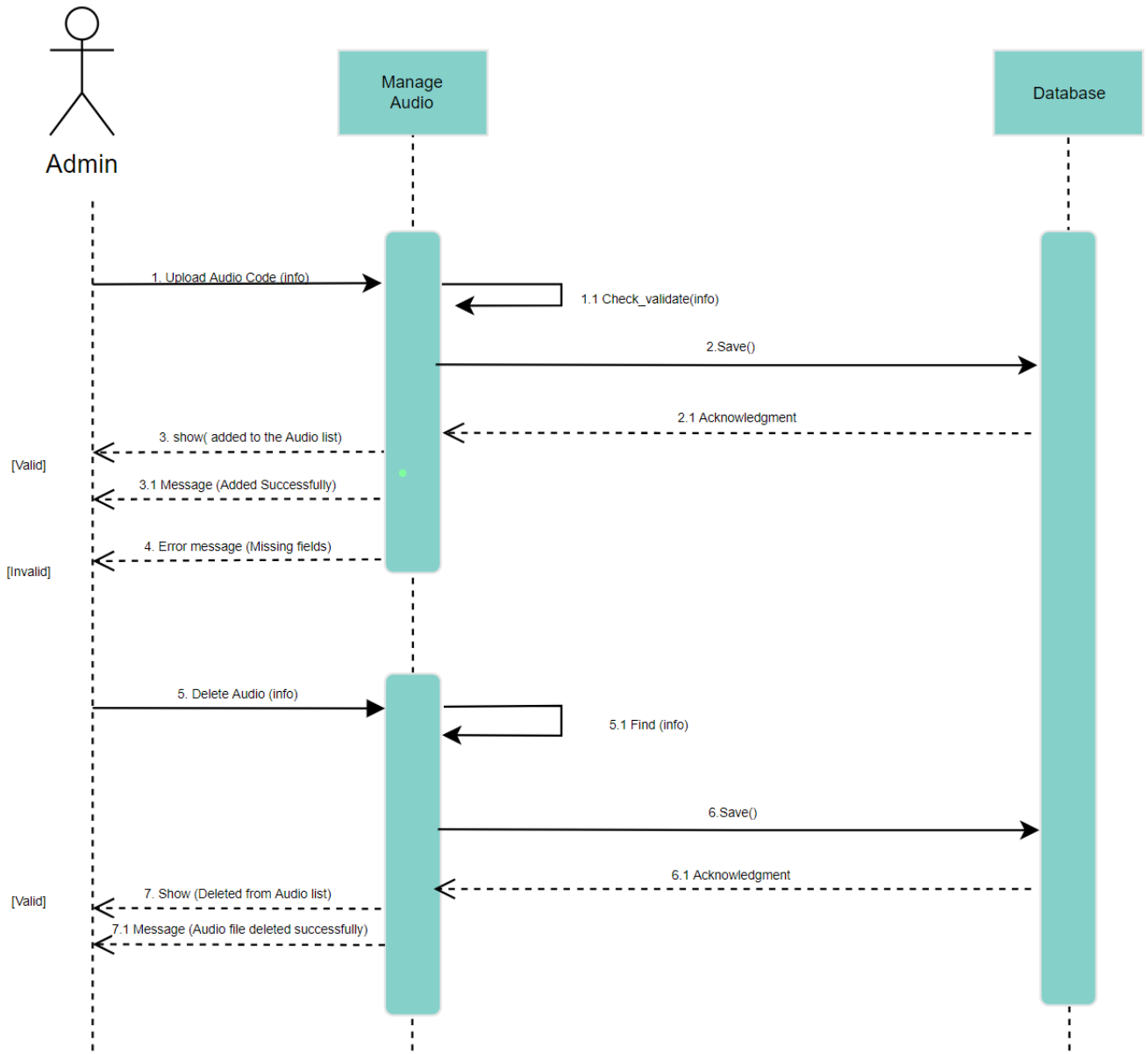


# User Interface Design

## 2- Admin interface

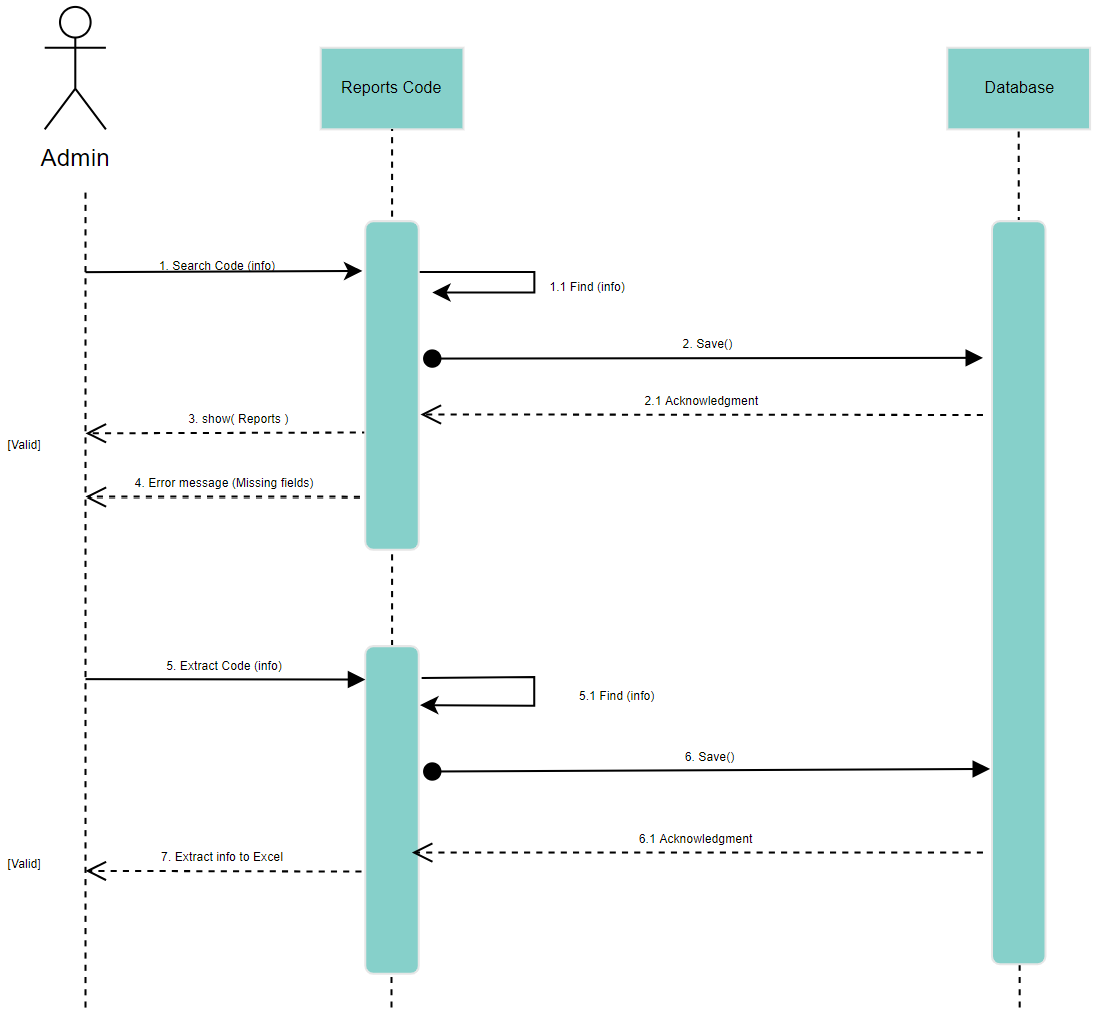


# Sequence diagram




MANAGE AUDIO

# Sequence diagram




REPORTS

# Functional requirement

## 2- Admin functions

### MANAGE AUDIOS

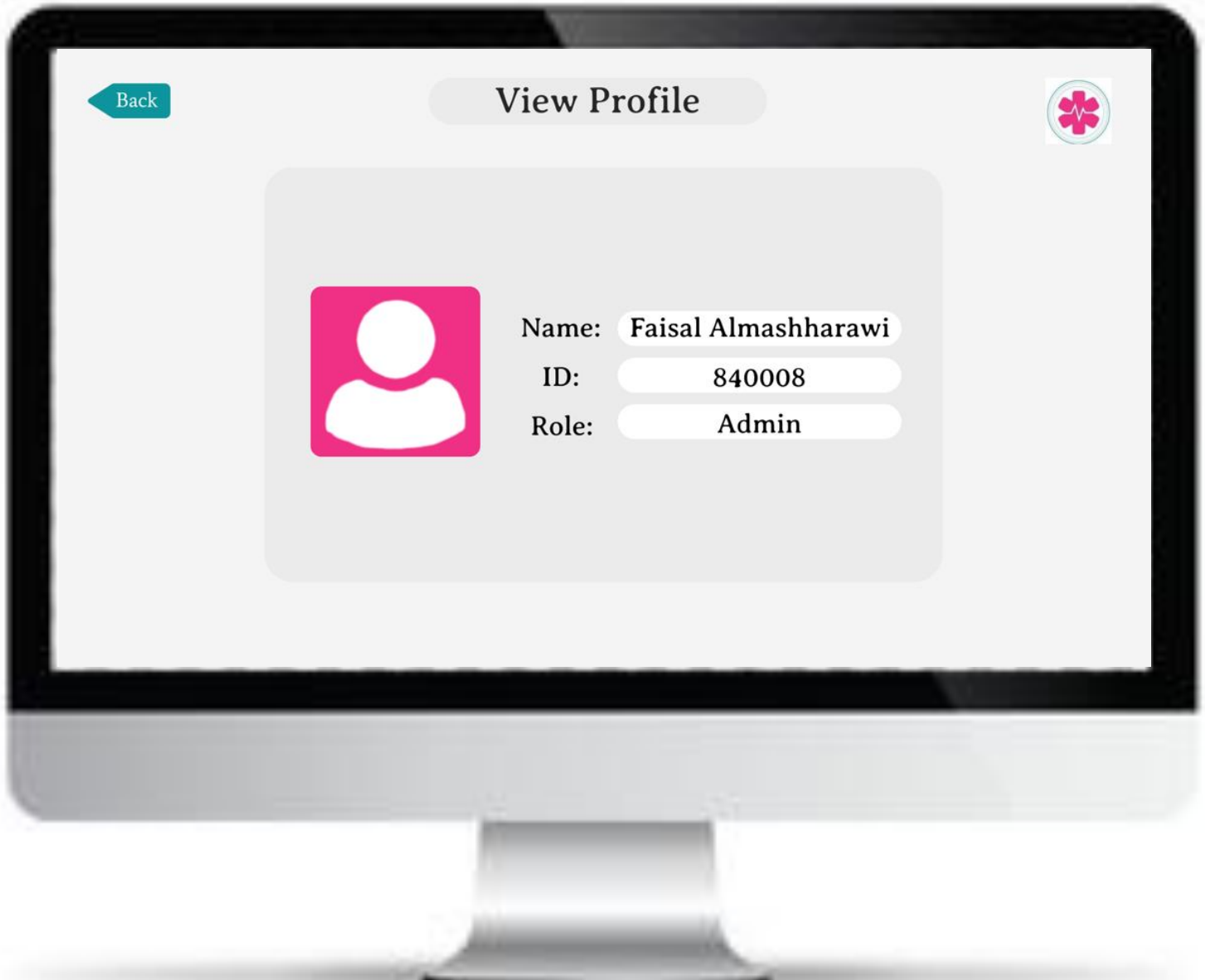
| Actors | Manager |
|---|---|
| Description | Admin can upload a new audio file, specifying its properties |
| Data | Audio file, repetition, date and time. |
| Stimulus | Admin clicks the “upload” button. |
| Response | The new audio will be uploaded to the ASG system. |
| Abnormal Condition | • If some of the required fields are missing, then an error message will appear to notify the admin.<br>• If the audio already exists, then the admin will be notified by a pop-up error message.<br>• If the file extension did not match the allowed extension, a message will appear to notify the admin. |

### REPORTS

| Actors | Manager |
|---|---|
| Description | Admin can view previous announcements as reports, exporting them in Excel. |
| Data | Date and time. |
| Stimulus | Admin clicks “Search” or “Extract” buttons. |
| Response | The announcements set on ASG system previously will be shown in a table and then extracted in Excel. |
| Abnormal Condition | If some of the required fields are missing, then an error message will appear to notify the admin. |

# User Interface Design

## 2- Admin interface



# User Interface Design

## 2- Admin interface

# Functional requirement

## 2- Admin functions

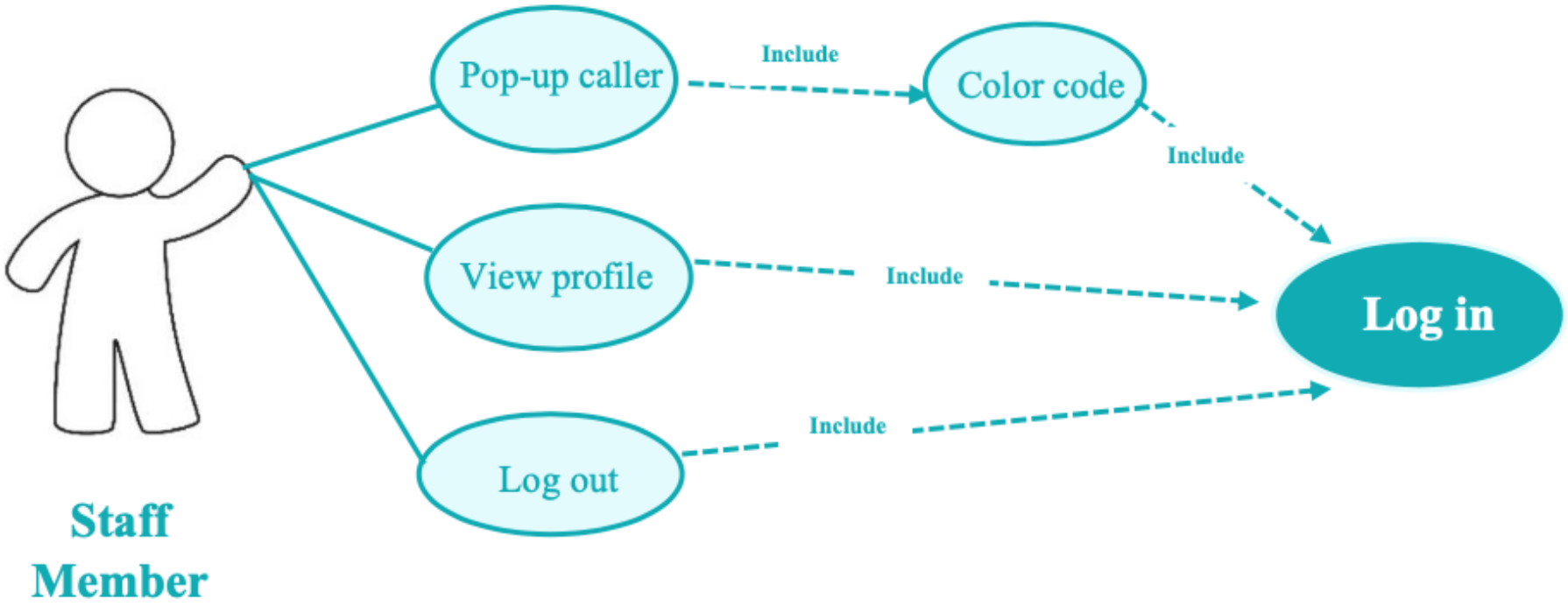
### DASHBOARD

| Actors | Manager |
|---|---|
| Description | The admin member can view all activities conducted in the system. |
| Data | • Activity during time<br>• Previous calls<br>• Last call<br>• Online users<br>• Most color code used<br>• Info |
| Stimulus | Click on the Dashboard from menu. |
| Response | The all activities on the system will be displayed in graphs and charts. |
| Abnormal Condition | - |

### PROFILE

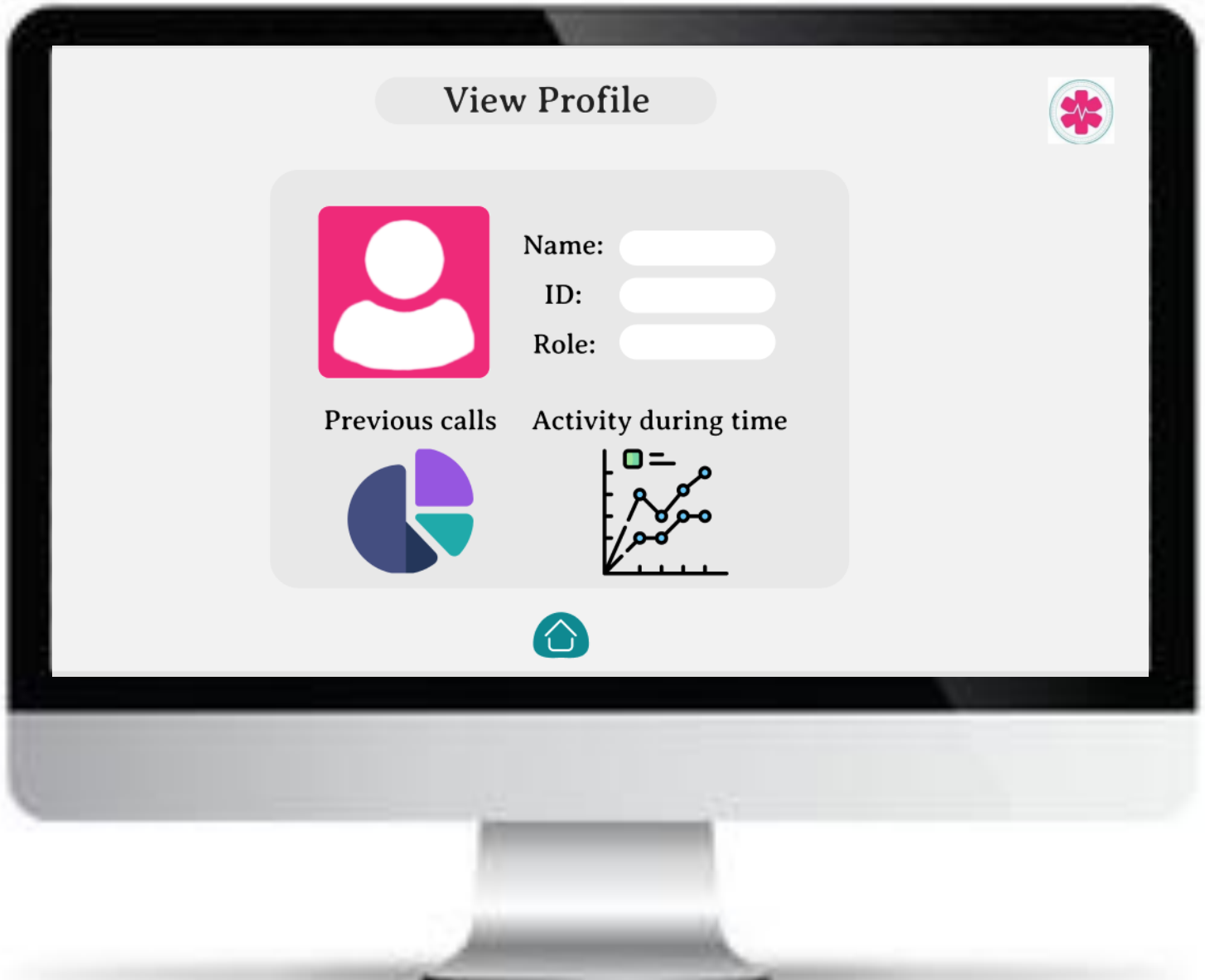
| Actors | Manager |
|---|---|
| Description | The admin member can view his/her own profile in the system. |
| Data | • Full name<br>• ID number<br>• Profile photo<br>• Role |
| Stimulus | Click on the Profile from menu. |
| Response | The admin user's profile will be displayed. |
| Abnormal Condition | - |

# Staff Use case



# User Interface Design

## 3- Staff interface



# Functional requirement

## 3- Staff functions

### PROFILE

| Actors | Staff |
|---|---|
| Description | The staff member can view his/her own profile in the system. |
| Data | • Full name<br>• ID number<br>• Profile photo<br>• Role<br>• Previous calls<br>• Activity during period of time. |
| Stimulus | Click on the Profile from menu. |
| Response | The staff user's profile will be displayed. |

# Non- Functional Requirements

01 Design constraints

02 Programming language

03 Time restriction

04 Cost restriction

# Conclusion

# IAU TEAM

- Faisal Almashharawi
- Abdulmalik Almajidharawi
- Alaa Albahrani
- Basheer Arab

# SE TEAM

- Seba Alqarawi
- Afnan Mhran
- Danah almudaifer
- Fatimah Mohammad AlQassab
- Rahaf Salem Alqahatni
- Shoog AlRassan

Announcements' Sound Generator

# Thank you for your listening

## ANY QUESTIONS?