Project Specifications

Group 1

December 6, 2017

Contents

1 Safety and Security

1.1 Access control with different levels of security for different purposes e.g. medical cabinet, and 24/7 building access.

- Authorization / Authentication (REST, OAuth2.0)
- Roles

	Admin	Medical Staff	Technical Staff	residents
survaillance of public spaces	x		x	
state of windows and doors	x	x	x	
smoke alarms	x	x	x	
heart rate / blood pressure	x	x		
location tracking	x	x		
managing information for info board	x	x		
technical state of all devices	x		x	
access the info board	x	x	x	x

1.2 Surveillance of the public spaces

- video cameras for parking lot and entrances and elevators (hardware purchase and installation)
- archive backup file system
  - NAS with redundance (RAID 2)
  - Backup also with (RAID 2)
  - label the files with location and timestamp for searching later

1.3 Smoke detection

- In every room or corridor
- Smoke detectors with network capabilities
- Tracking the alarms with within the system (location and time)
- Dashboard should be able visualize alarms origin

1.4 Window and door status listed in the central hub

- Buy wireless detectors/ sensors for doors and windows
- Create interface for sensors to communicate with the central system
- Dashboard should visualize the state of the doors and windows

1.5 Safe deposit of monitoring feeds

- Central system needs a database for persitent data storage
- Redudant backup system

2 24/7 real-time Health Monitoring facilities

2.1 Monitoring of inhabitants without breaking the laws of privacy

- Buy motion detectors (+ installation)
- Create interface for detectors to communicate with the backend
- Dashboard should visualize the data of the motion detectors for each room

2.2 Health Monitoring

- Heart rate , blood pressure monitoring with smart wrist bands
  - wrist band communicate with the backend
  - not mandatory for every resident - resident can decide for their own (or doctor orders it)
  - realtime monitoring via frontend for each resident who has a wrist band by their location (GPS)
  - implement alarm logic, when monitored health data shows critical state
- Emergency button
  - purchase emergency buttons that can communicate with a central hub or backend
  - installation and create interface for communication with backend
  - log the frequency of the usage of each button (location / time) and store it in the database
  - provide access to the logs by the frontend and implement searching and filtering features

3 Engineering services

3.1 Central hub that lists the status of the building infrastructure

- A silent alarm to the personal if a critical device is failing
- technical staff should be able to access the state of devices that are out of order
  - sensors
  - lights
  - elevators
  - heating

3.2 ticket system for manual issue managment and tracking their state

- technical staff and medical staff can manage the issues (add, update, delete)
- design and implement a GUI for the staff that allows them to manage the issues

4 Energy and water consumption

4.1 Monitoring of water and energy consumption

- Design and implement a GUI for the technical staff to monitor the consumption
- Buy smart power meters and water meters that can communicate with the backend
- Log and aggragate the data in the database
- Implement filtering and searching features for the stored data

4.2 Central heating control

- Residents can control the room temperature
- Purchase heating controls that can communicate with the backend (installation and integration into the system)
- Purchase temperature sensors that can communicate with the backend (installation and integration into the system)
- Dashboard should visualize the temperature and heating settings of each room

5 Cleanliness and outbuilding services

5.1 Tracking of cleaning services

- design and implement a GUI for the medical staff to save the date and room for which the cleaning service was done
- implement backend and database for storing the data

5.2 An easy way to report contaminations

- design and implement a GUI for the medical staff to report contaminations
- implement backend and database for storing the data

6 Residents satisfaction

6.1 Optional registration for health services like heart rate and location tracking

- design and implement a GUI for the medical staff for storing which person was given a wrist band
- implement backend and database for storing the data

6.2 Info board for events

- Purchase flat screen (installation and integration in the system)
- Web frontend that is also accessable on mobile devices
- implement backend and database for storing the data

7 Technical Specification

- Database for data persitents