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Design Overview

Architectural design-

It will have the following modules :-

1.Login/Sign up Module

2.BACnet Module

3. User Module

4. Data Analytics Module

First, the BACnet system needs to be set up . Then designing several web pages and data analytics of the data collected.

System interfaces

User Interface

The main page will contain a navigation bar and login/sign up process.

There will be several web pages for each super user, space user(private access to respective labs), and data analytic page for public users (open for all , no need for sign in)

The space user can control the AC of their rooms , they can access the data of past several days.

The super user can control AC and access data of all labs.

APIs

In final Release we will have following APIs:

1.FetchData :-

It includes connecting to Daikins Dbacs using bacnet getting the relevant Data.

2.SetTemp:-

API to change the temp to whatever the user desires and also based on the outside

temp. and occupancy.

3.SetStatus:-

To change the running status of the AC eg. switching it ON/OFF . This API is available to both admin and space user.

4.Alarm/Alert :-

This API is used to send mail/alert to the user who are overusing AC .

Example :- If the user is running AC for more than 16 hour then an alarm must set to inform the user.

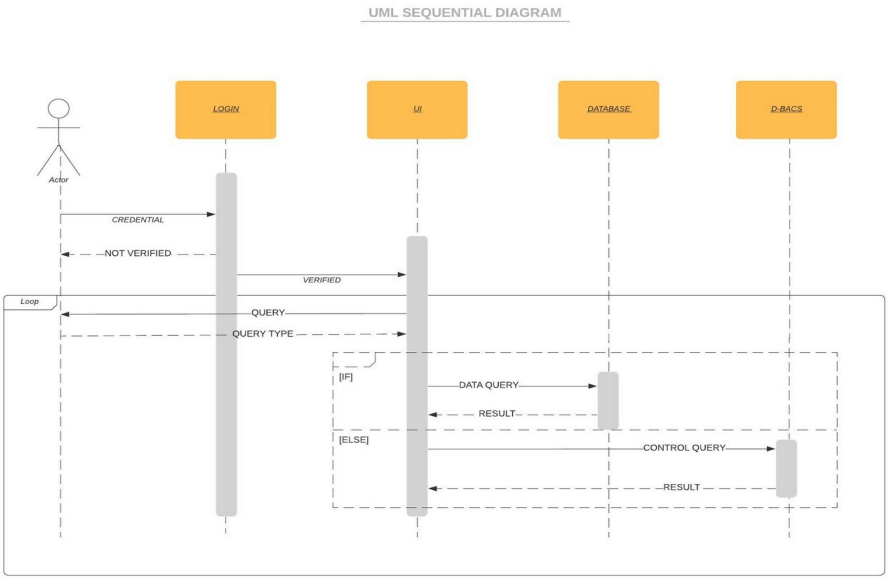
5.Occupancy:-

To get the data related to the occupancy of the lab at any given time.

Model

User Class	This class will have methods such as : login(), logout(), getData(), changeRoom() etc. There will be child classes for User such as space user and super user.
AC Class	This class will have methods such as: getStatus(), setStatus(), getTemp(), setTemp(), etc. AC instances will have attributes such as temperature, status, currentRoom etc.

Sequence Diagram(s)



Design Rationale

Will be added later.