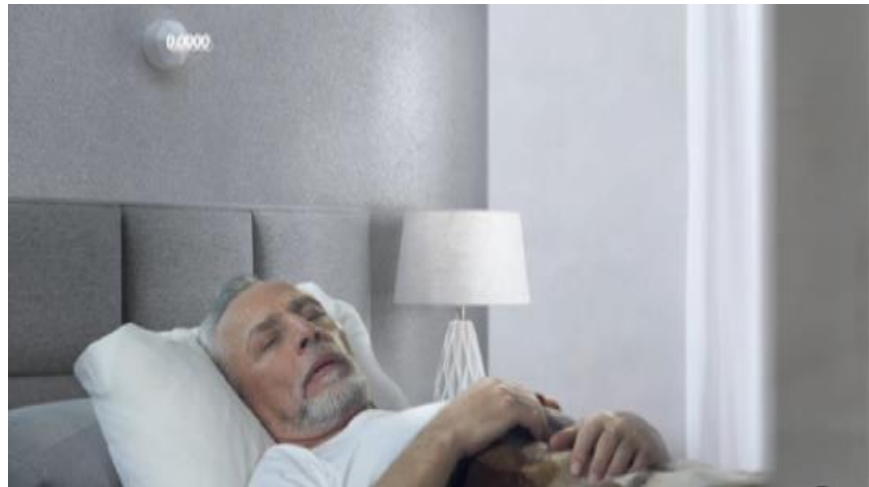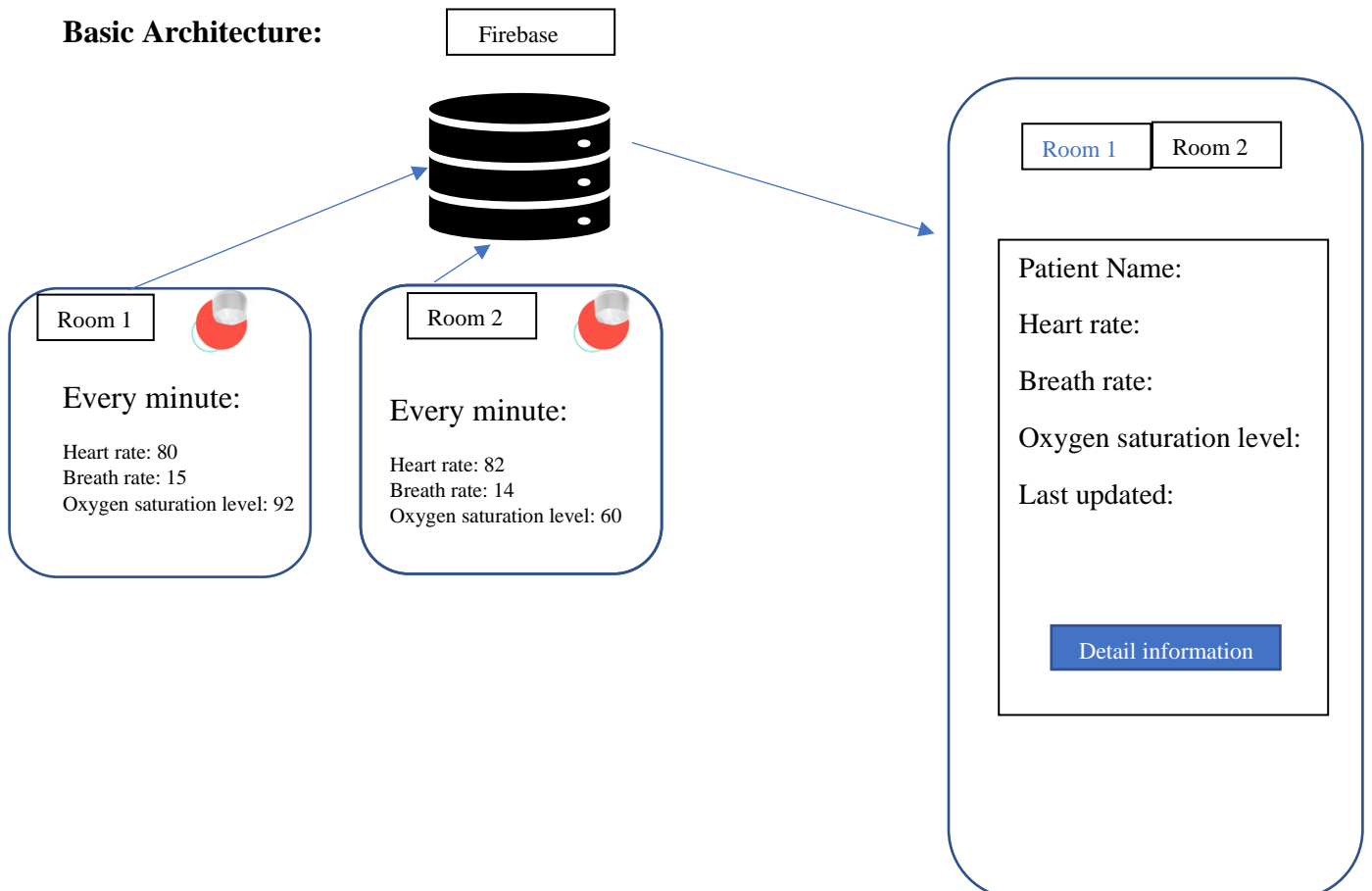**Title:** Real-time Covid Patient Monitoring App for the Hospital "XYZ"

Project description:

In-hospital "XYZ", there is a COVID care unit that has 2 rooms. Each room is equipped with a non-invasive sensor device called "ABC". The "ABC" sensor device is mounted on the wall and provides heart rate, breath rate, and Oxygen saturation level data every minute. Develop a Mobile App to virtually monitor the Covid patients of Hospital "XYZ".

Basic Architecture:

Firebase

Room 1

Every minute:

Heart rate: 80
Breath rate: 15
Oxygen saturation level: 92

Room 2

Every minute:

Heart rate: 82
Breath rate: 14
Oxygen saturation level: 60

Room 1 | Room 2

Patient Name:

Heart rate:

Breath rate:

Oxygen saturation level:

Last updated:

Detail information

Data generation:

1. You will simulate the data based on JavaScript code
2. Post the data to firebase **every minute**

Data presentation:

Fetch the data from firebase **every minute** and visualize the physiological parameters (heart rate, breath rate, and oxygen saturation level) in different screens (e.g., one screen for room 1 and another screen for room 2).

Interface Design:
While designing the app, you need to keep the user experience in mind. Various symbols/Icons can be used along with text to differentiate heart rate, breath rate, and oxygen saturation level on mobile screens.

Note: Above are the basic/mandatory requirements for the IKT-205 final exam.

Additional functionalities/features will be needed to make the App realistic and for getting good grades. For instance,

1. In the detailed information, you can present the data (heart rate, breath rate, Oxygen saturation level) of the last 10-15 minutes in the bar charts.
2. Data export functionalities with dropdown options for selecting room numbers and time period to download health data for future analysis
3. Add the capability to insert observations regarding a patient in the dashboard.
4. Firebase authentication can be added to secure the App
5. Access control mechanism with different rights for Nurse, Doctors, and Administrators. For instance, only a doctor can insert observations regarding patients. Another example could be: export functionalities will only be available to administrators.
6. You can generate notifications for the App users utilizing some pop-up/flashing signal of abnormal heart rate and oxygen saturation level.
7. Adding capabilities to the App for inserting a new room with patient details. By doing that data streaming should be on for the new room.
8. You can use React Native testing framework for testing different functionalities.

The above list items are just examples. You can add other functionalities which make sense from the App perspective.

Feel free to ask questions if you have any.

Project Demo Date: 19 and 20 May 2022 (Physical)

Book Timeslot:

https://docs.google.com/spreadsheets/d/1E3Ln_of3tOMpUG34cwy9_02NKRr2Iyg5W215SvlaaWw/edit?usp=sharing

Room No. Møterom Grm A2 082

Detailed information on other kinds of stuff (writing reports, submissions, app design, etc.) will be provided in the class.