Hospital Data Integration system

Background
A hospital uses two separated database systems:

1. Patient Management System - PMS
2. Laboratory Information System - LIS

Both systems sync their data to S3 buckets every few seconds in CSV format. Every update will trigger a new file creation and will be placed in the S3 bucket.

Task
Your goal is to create a patient monitoring web application displaying the data from the above systems. This application will help medical staff view patients hospitalized for more than 48 hours without new tests being performed.
The application will include a DB with relevant scheme to which the data is loaded, and the relevant frontend and backend that supports displaying this information.

Scope
This task focuses solely on the patient monitoring system, reading and processing the data from S3 bucket is out of scope

Notes:

- The choice of technologies, including programming language, is yours
- You are welcome to use any tool, including LLMs, as long as you understand the design and code
- You can find the sample data in the S3 bucket mentioned below (for the sake of the exercise, new files will not be created)
- You can use the provided sample data and inject it to your DB (you don't need to deliver the script or any other method you used in order to insert the data to the DB)
- The scope of this exercise is rather large, choose wisely where to focus and how to spend your time. You can use a to-do list to describe what you think is important to add and you didn't have the time for it

Technical Requirements

This is a ‘step by step’ task, we recommend to implement the requirements according to the below order

1. High level design of your solution
2. Decide on relevant database, data model and DB schemas, based on the given data examples in the bucket
3. Build an application that reads the data from the DB
4. Present the data in the application, in a table view
5. Bonus - Add some changes according to the below section - ‘additional considerations’

Additional Considerations:

1. What should be done about potential schema changes in the source systems?
2. Consider how your solution would handle frequent updates (every few seconds) in a production environment
3. Consider the solution for performance, given that the hospital may have thousands of patients and tests

Deliverables:

- Source code for all components of the solution (including DB, backend, frontend). A web-accessible git repo (e.g., GitHub) is preferred
- A README file explaining:
    - How to set up and run your solution
    - Your design choices and rationale
    - Any assumptions made and their justifications How you addressed the additional considerations
- Tests, if you've implemented any. If not, a description of what would you test
- A TODO list (bullet points) outlining considerations for productizing your code.

Time Limit: 3-4 hours

The static S3 bucket:
https://external-take-home-test-wild-launch.s3.eu-west-1.amazonaws.com/

Good luck!