



# Capstone II Final Project - Fall 2023

## *Web-Based Neurological Assessment*

Team Members: Jordan Bravo, Nicolas Bello, Jonathan Oviedo

Product Owner: Dr. Christian Poellabauer

Professor: Masoud Sadjadi



# Problem Definition

Patients with neurological disorders require a way to communicate with their medical providers through virtual means, with the same set of examinations and feedback that an in-person consultation can provide. This includes tests that a provider can assign to a patient, one-on-one video calls with live feedback on those tests, and a robust history concerning previous calls and examinations between a patient and provider.

This is the goal of this software, to provide that bridge between a patient and a provider through a virtual network. The system is brand new and built from the ground up this semester.

The primary focus was to instill a solid, concrete architectural basis for teams to build upon as this project continues to mature through various semesters. This included setting up the guidelines for testing, component creation, styling, back-end and front-end logic and directory structure.

Since the development was initiated the semester of Fall 2023, the project is still in a very nubile stage and requires much more work to be able to arrive at the point where some of the visions are being met.





# Project Management

The team followed the Agile Scrum methodology, where we had 6 total 2-week sprint development.

We met daily for our standups, weekly with our PO for status updates and backlog refinement, and finished our sprint iteration with our sprint planning and retrospective meeting.

- *Sprint 1*: August, 28<sup>th</sup> – September, 10<sup>th</sup>
- *Sprint 2*: September, 11<sup>th</sup> – September, 24<sup>th</sup>
- *Sprint 3*: September, 25<sup>th</sup> – October, 8<sup>th</sup>
- *Sprint 4*: October, 9<sup>th</sup> – October, 22<sup>nd</sup>
- *Sprint 5*: October, 23<sup>rd</sup> – November, 5<sup>th</sup>
- *Sprint 6*: November, 6<sup>th</sup> – November, 19<sup>th</sup>





# Project Management Cont.

## Sprint 1 Stories:

- Research architectural design for scalable web software
- Research various possible frameworks and technologies that can be used
- Develop the MVP UI/UX for the application

## Sprint 2 Stories:

- Implement the landing page
- Implement the login page
- Set up NgRx, documentation, guidelines and initial commit of the project
- Set up Firebase

## Sprint 3 Stories:

- Implement the dashboard for a logged in user
- Implement the user sign up option page
- Implement the registration form (patient and provider)
- Tweak Firestore for new collections and data
- Implement admin verification for newly created providers pending registration approval



# Project Management Cont.

## Sprint 4 Stories:

- Implement the back-end logic for new provider creation and handling
- Write tests for the current Firebase Cloud Functions in use
- Introduce better mobile responsiveness and design for the dashboard route
- Introduce route guarding for unauthorized users trying to access certain routes

## Sprint 5 Stories:

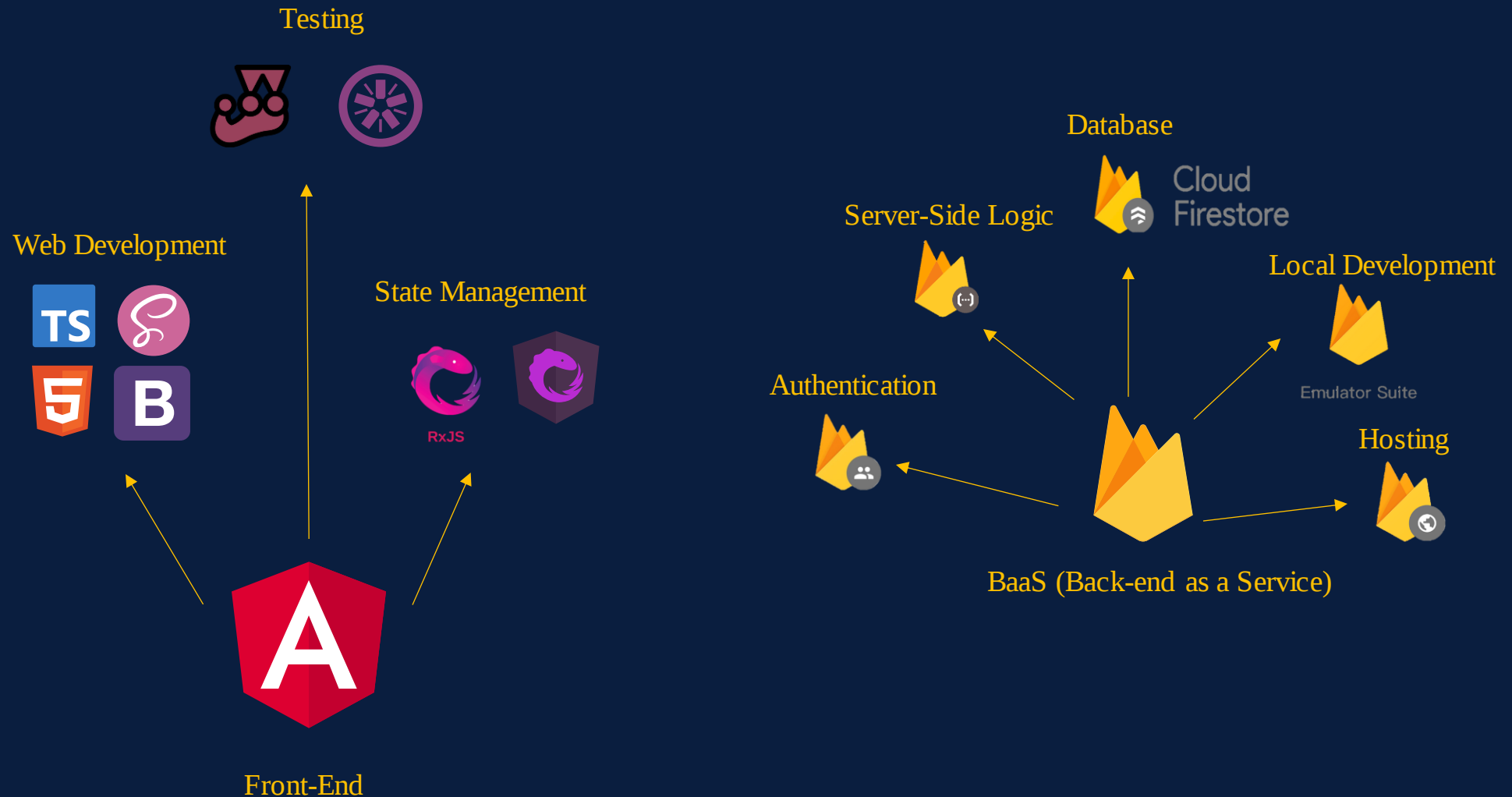
- Create the overall design of the contacts page for a user
- Add the password forgot feature
- Add more route guards for route protection
- Finalize the side nav for MVP
- Implement database seeder script

## Sprint 6 Stories:

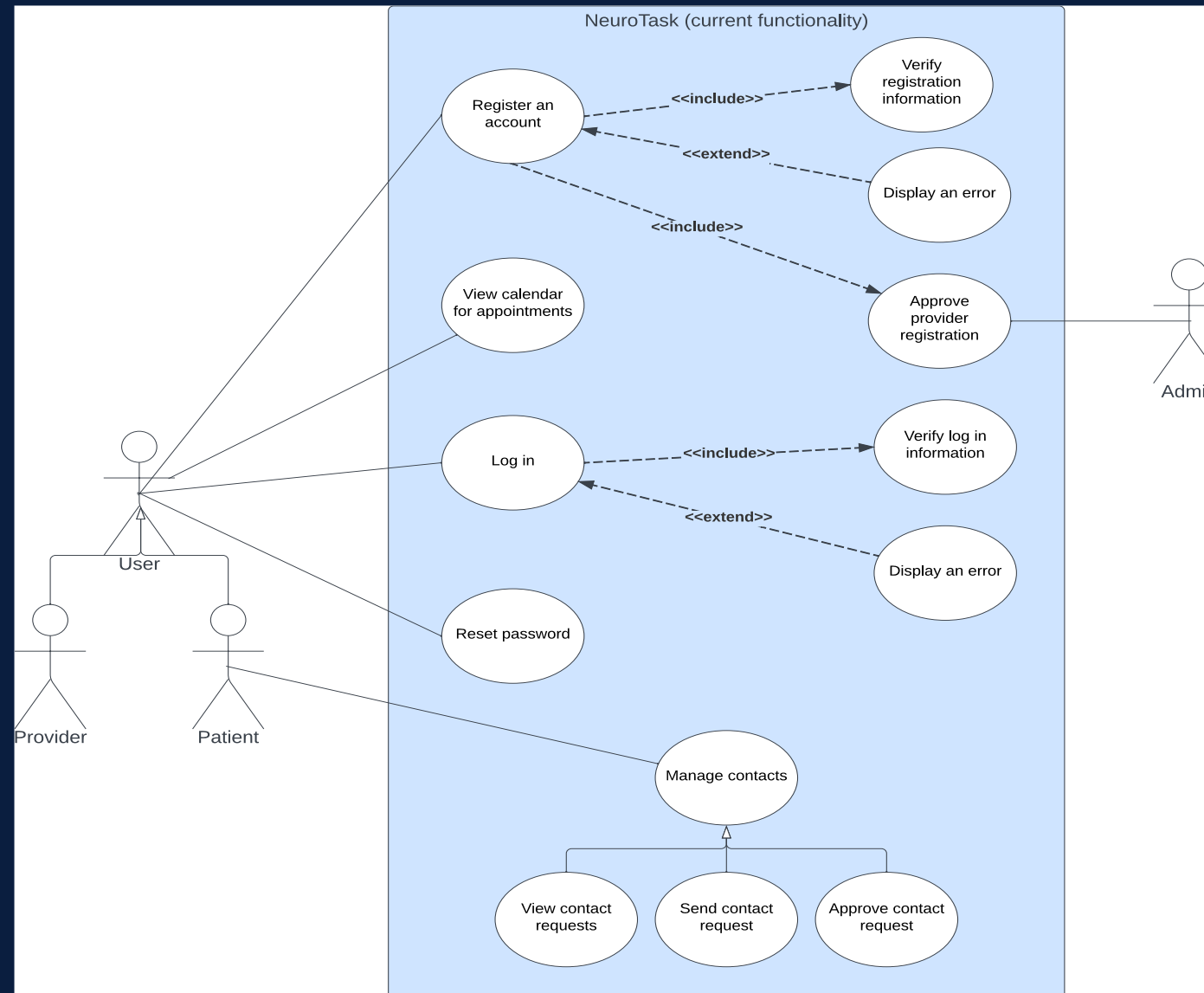
- Implement the landing page for the contacts route
- Implement page for pending incoming/outgoing contact requests
- Implement page for contact list
- Implement back-end logic for contacts route
- Document each feature developed during the semester



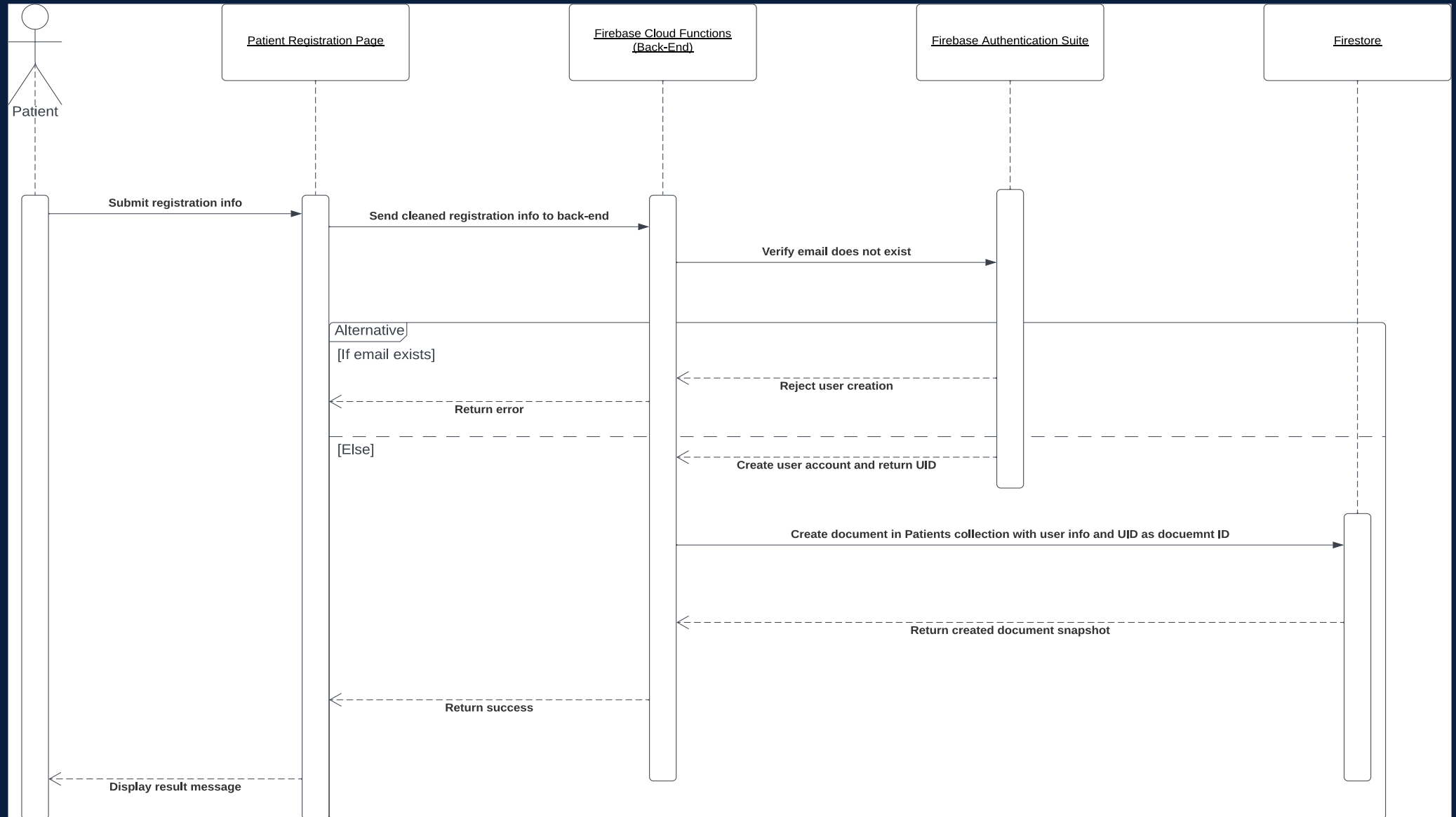
# Technology



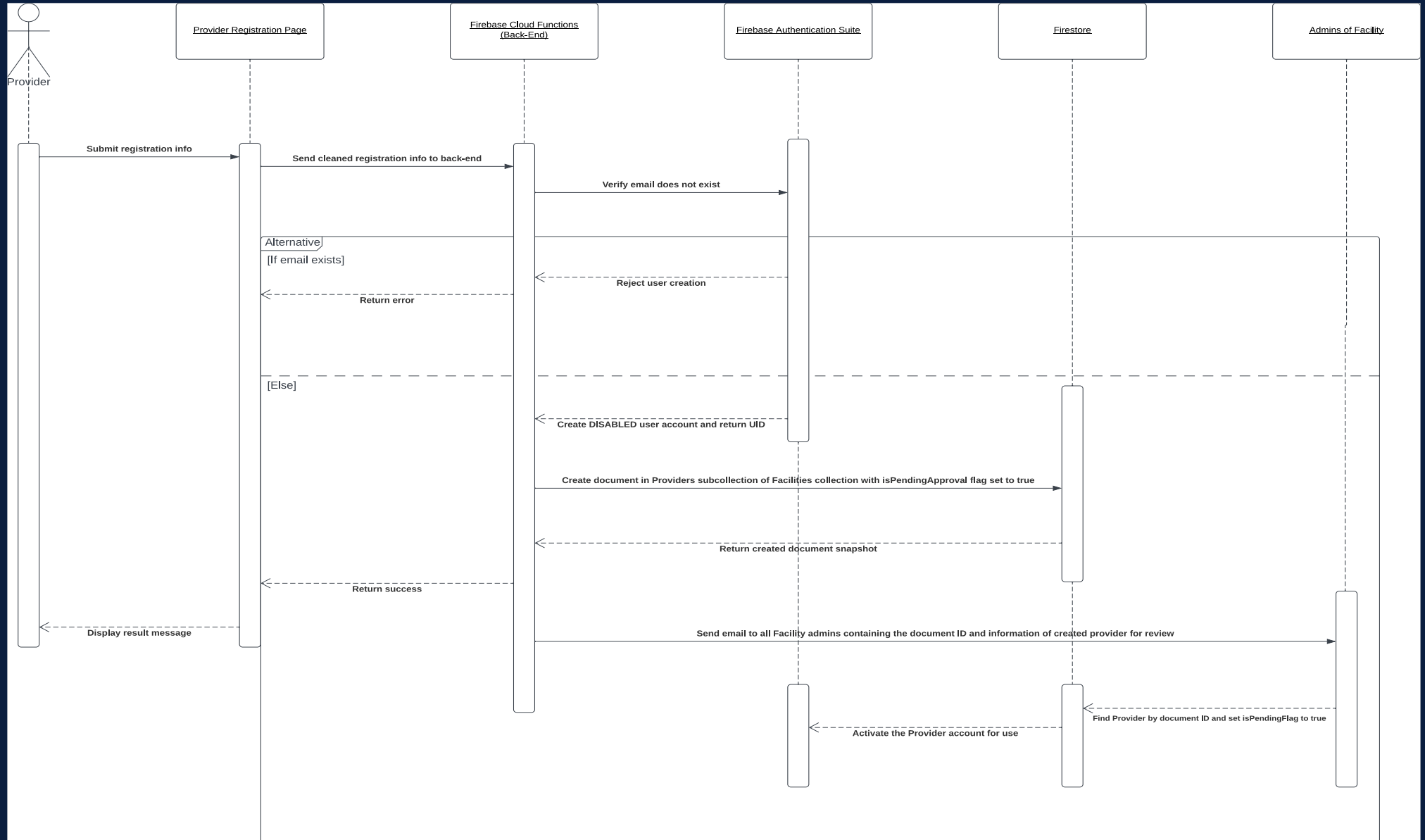
# Use Case Diagram – Current Functionality



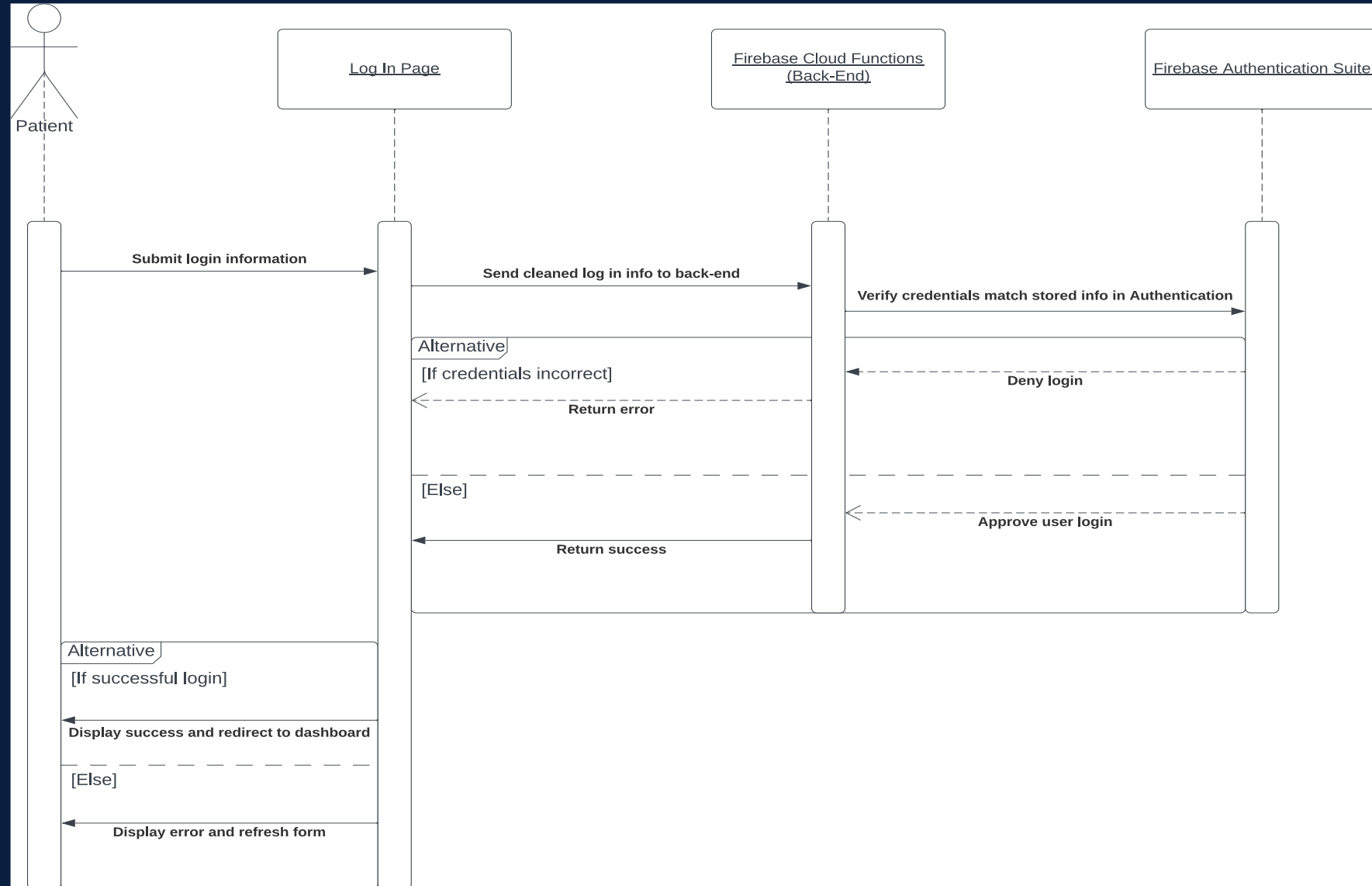
# Sequence Diagram – Patient Registration



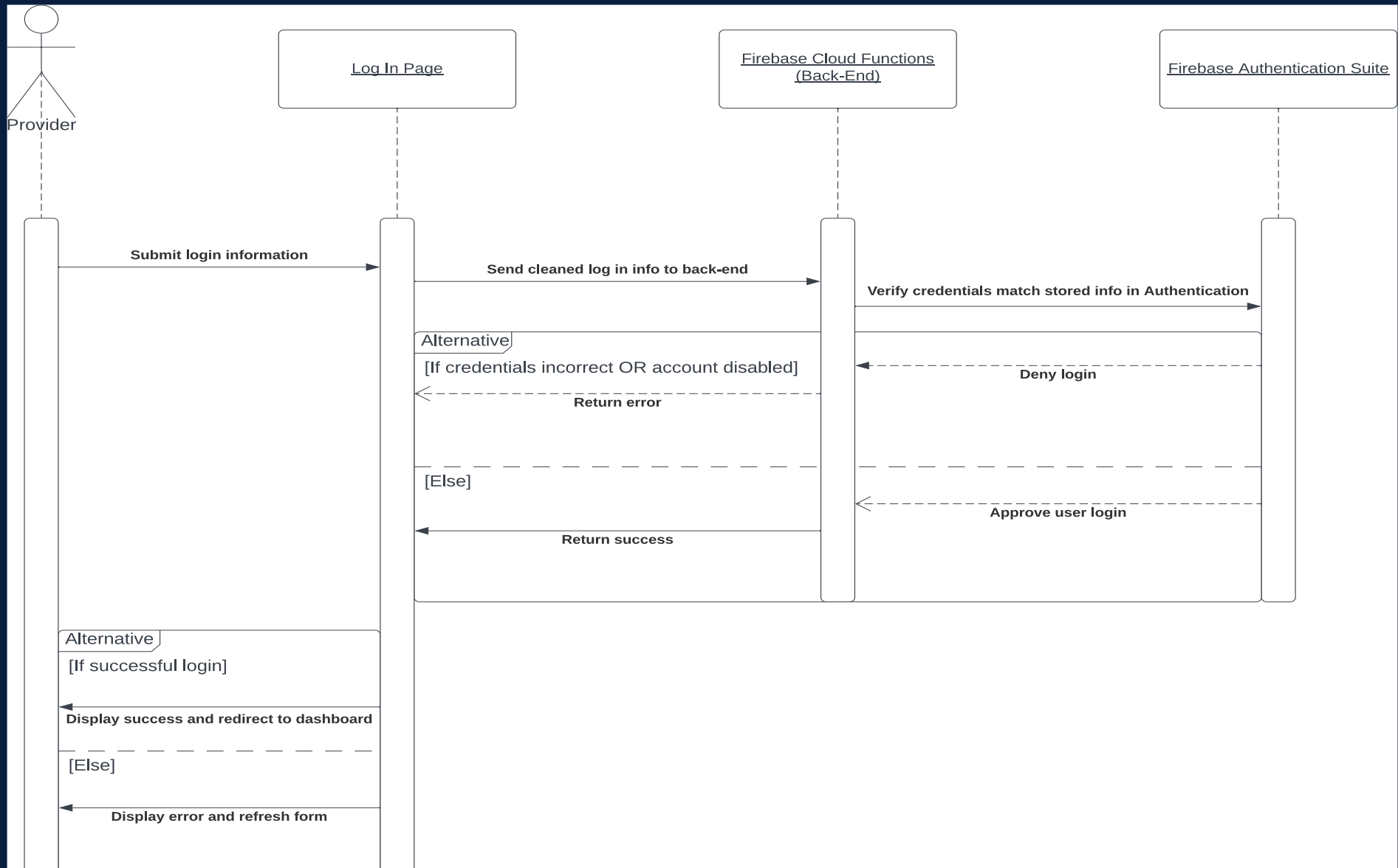
# Sequence Diagram – Provider Registration



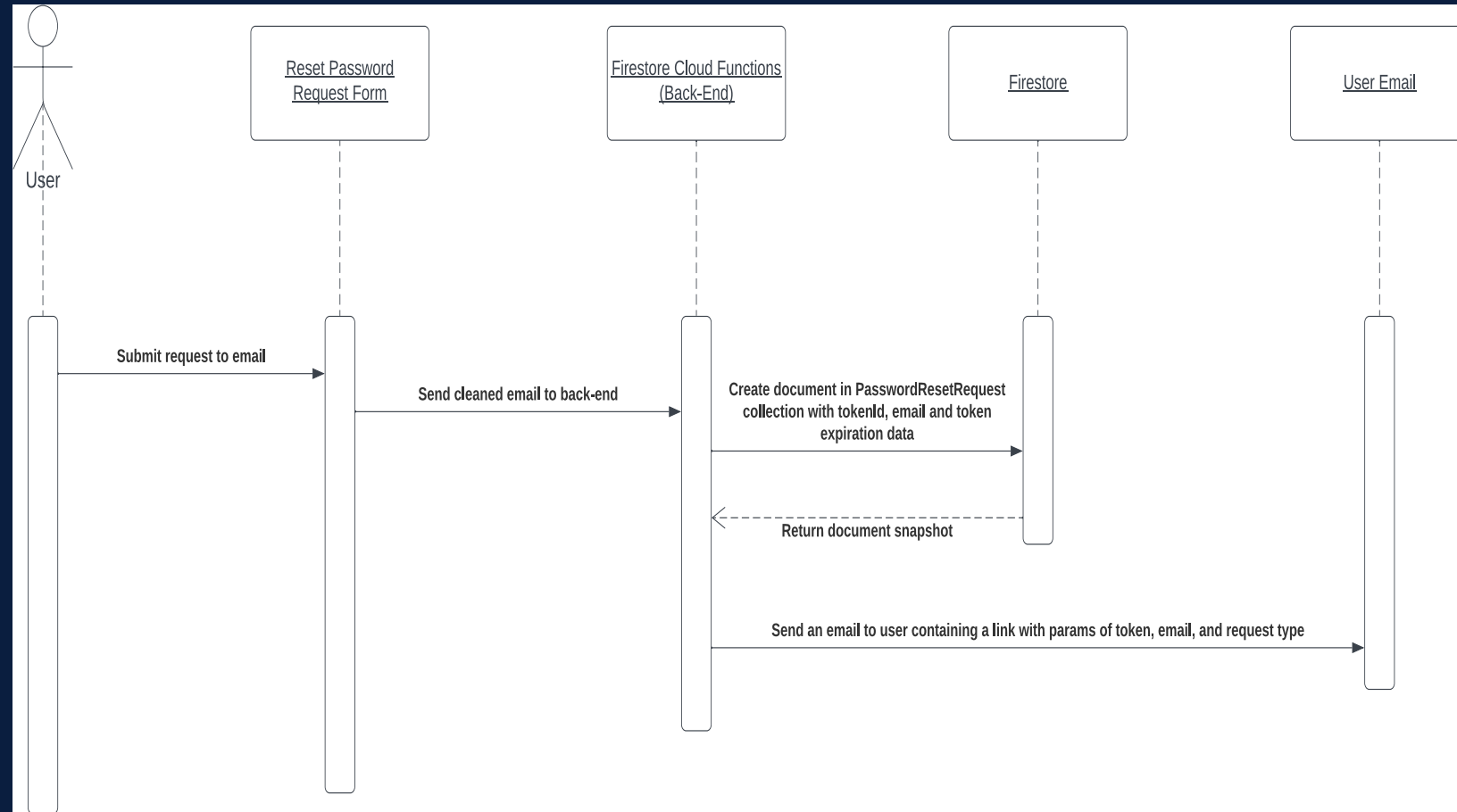
# Sequence Diagram – Patient Login



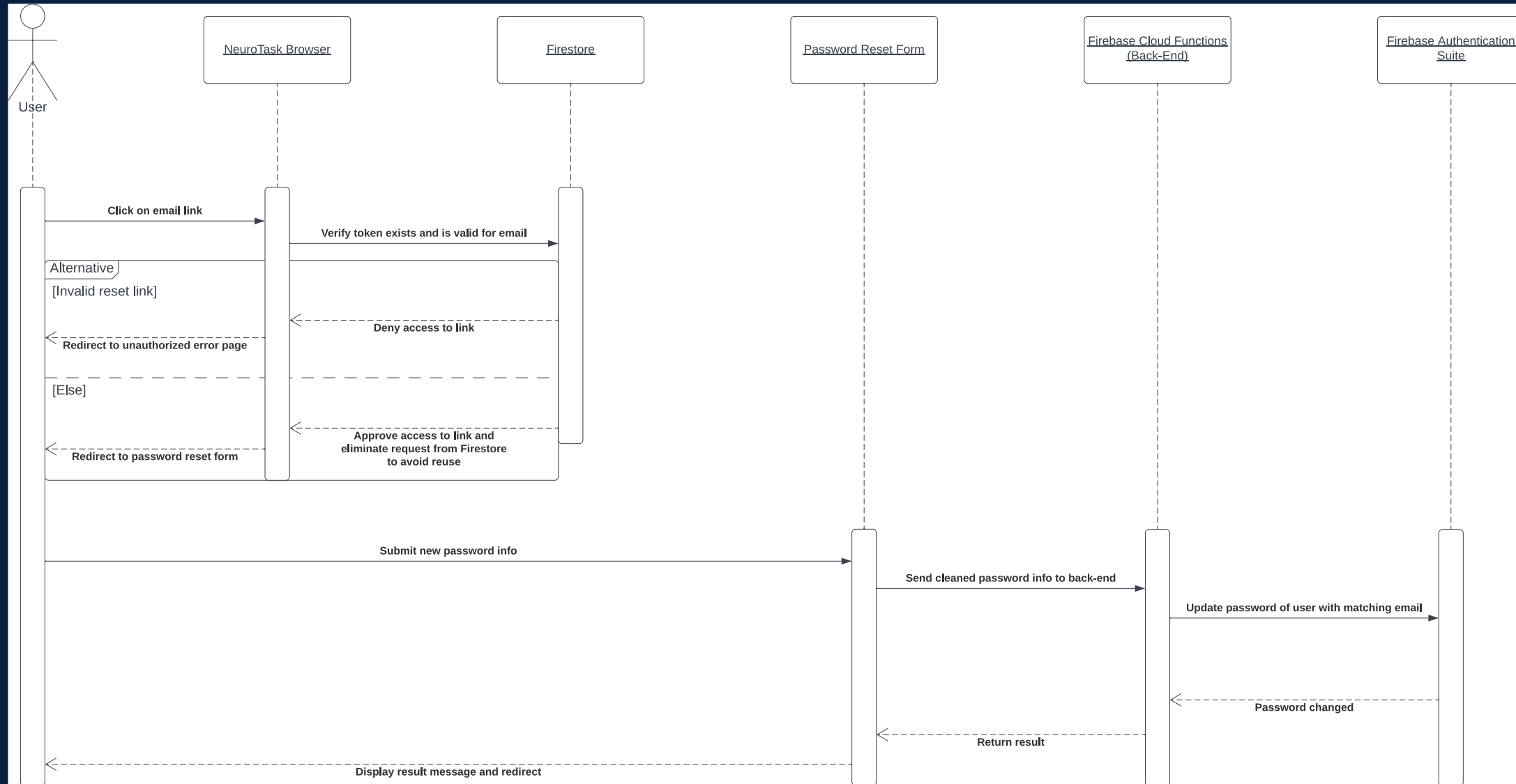
# Sequence Diagram – Provider Login



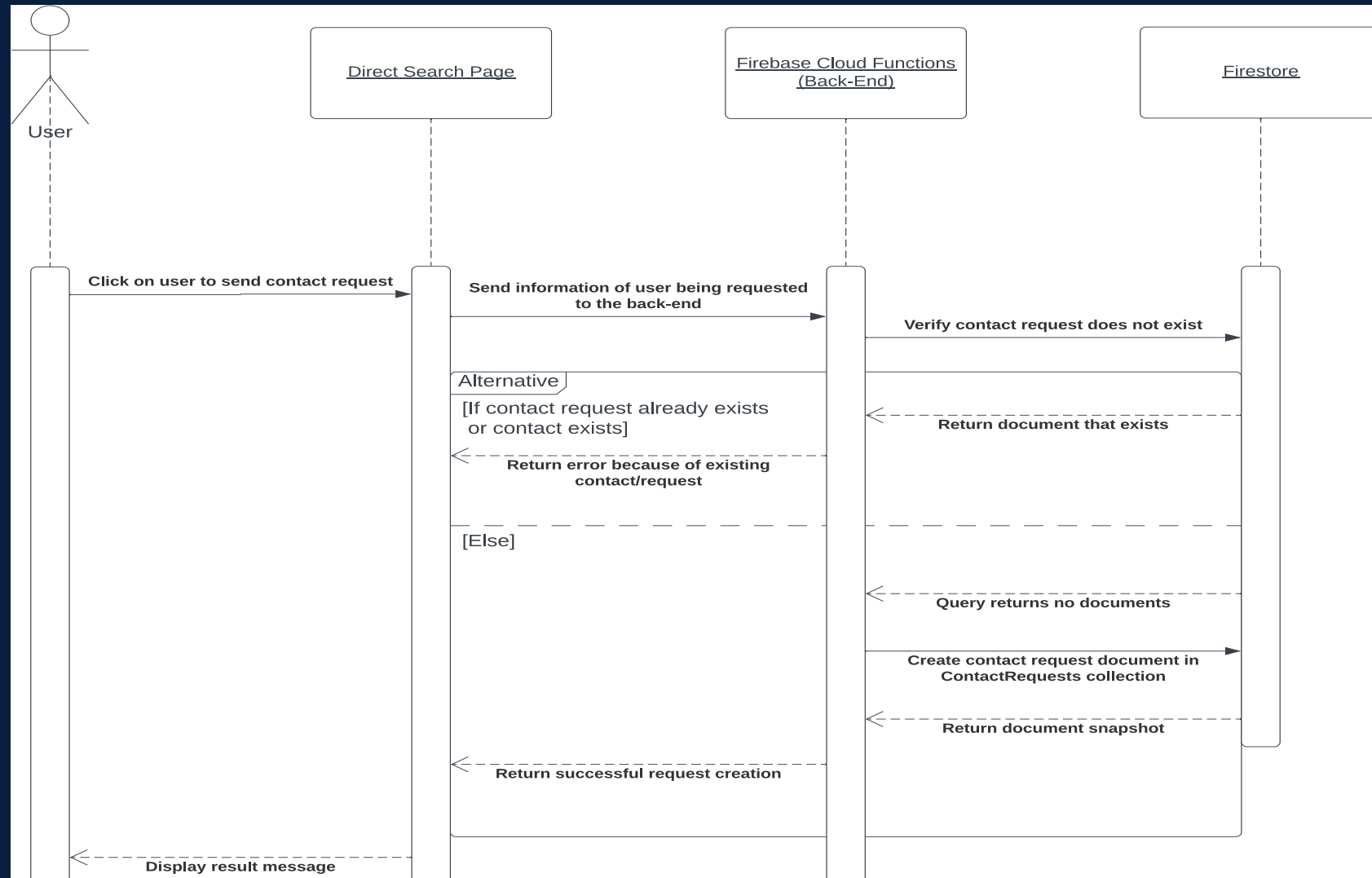
# Sequence Diagram – User Password Reset Request



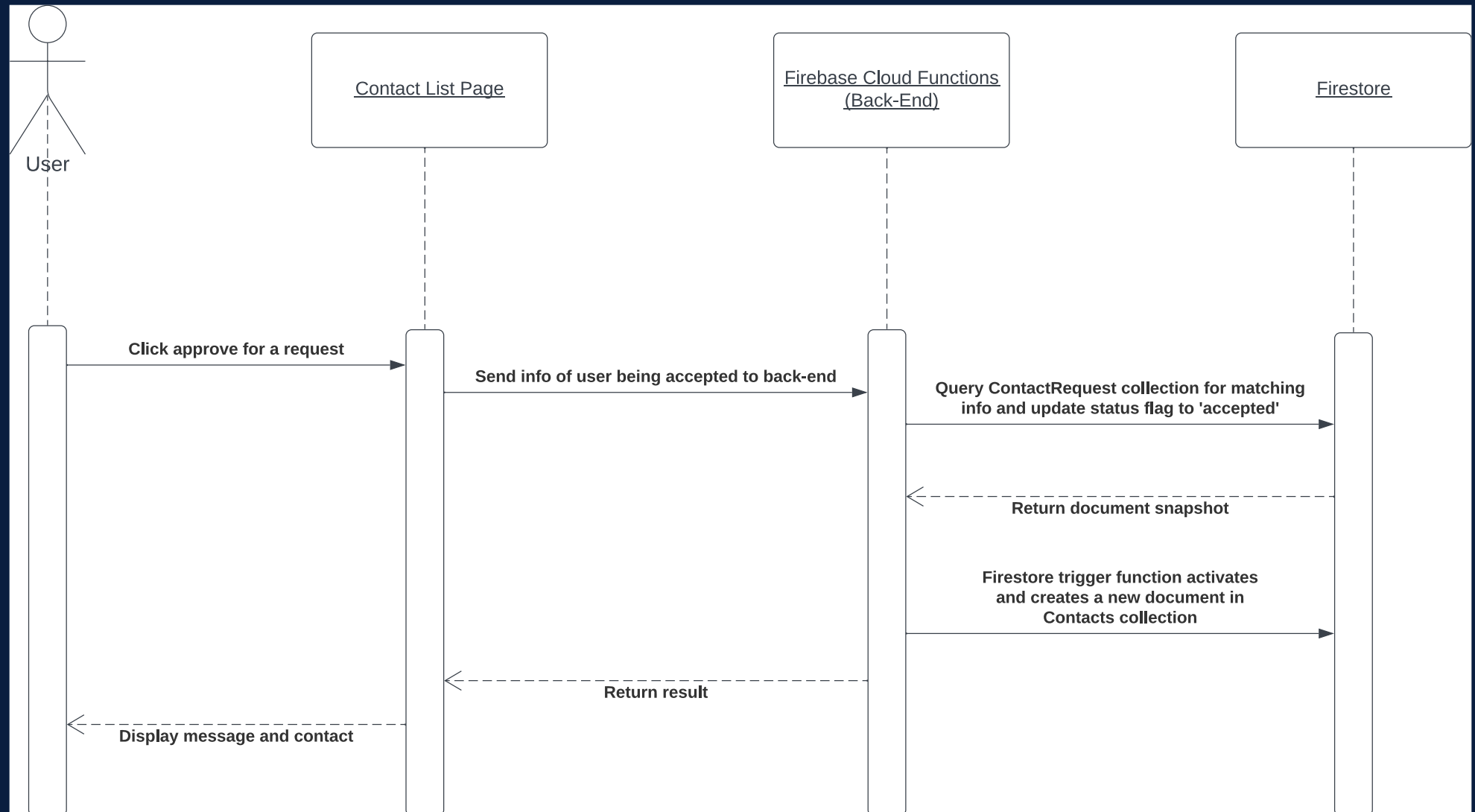
# Sequence Diagram – User Password Reset



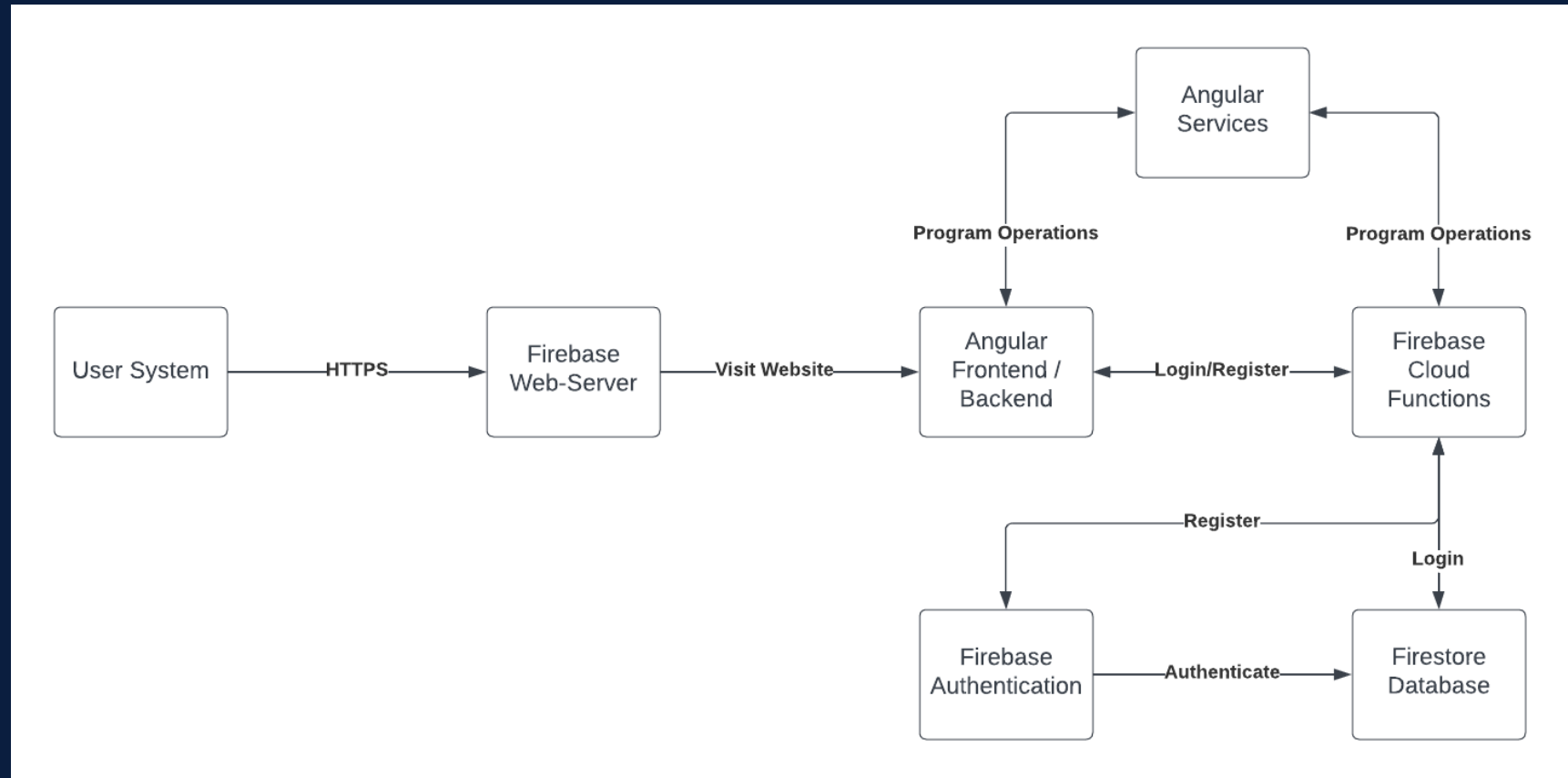
# Sequence Diagram – Send Contact Request



# Sequence Diagram – Approve Contact Request



# Deployment Diagram



# Summary

This software aims to bridge connection between a patient and a medical provider virtually. By providing a virtual platform, patients and providers can meet one-on-one through video chats, perform examinations and tests assigned by the providers in live time, provide history of exam results and calls, schedule appointments and much more.

While these features are far from reaching completion, the groundwork has been laid for the growth of the software to eventually reach those desired features.

For any further questions, please reach out to:

## Product Owner:

- Dr. Christian Poellabauer - [cpoellab@fiu.edu](mailto:cpoellab@fiu.edu)

## Team Members:

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