Insurance Broker Management System

J2EE Web Components – ITE 5332 – 0NA

Assignment – 1

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Table of Contents

Project Description

Overview

The Insurance Broker Management System (IBMS) is designed to ensure that the brokers remain organized while efficiently managing the data pertaining to the consumers and the insurance policies offered to them in a systematic orderly manner. The system provides data persistence through the use of JSON files and also allows creation, updating, and deletion of consumers and policies. The system improves both maintainability and scalability by ensuring the application of the Repository Design Pattern where there exists a clear separation of concerns between the business components and data components.

The system allows brokers to handle activities like customer registration, policy handling, and organization of insurance records which burnishes operation management along with ensuring the data consistency and integrity.

Features

- Customer Management:
    - Add, update, delete, and view customer records.
    - Comprehensive customer profiles that store important information.
- Policy Management:
    - Create, edit, and assign insurance policies to customers.
    - Delete outdated policies and manage ongoing ones.
- Data Persistence:
    - Store customer and policy data in JSON files for easy management and durability.

Design Decisions

System Architecture

The system is structured with a modular approach to simplify the management of customers, insurance policies and future extensions. The key layers of the system are:

Model Layer:

- Classes like Customer and Policy represent the domain entities of Insurance Broker Management System.

View Layer:

- Developed using Nord Design library, this layer provides simple yet modern interface for brokers to manage customers and insurance policies.

Controller Layer:

- This handles the HTTP requests from the client and interacts with the repository layer to fetch or manipulate data.

Repository Layer (Data Access Layer):

- This is responsible for accessing the data storage. In this case, it's interacting with JSON files for reading and writing customer or policy data.

File Storage Format (JSON)

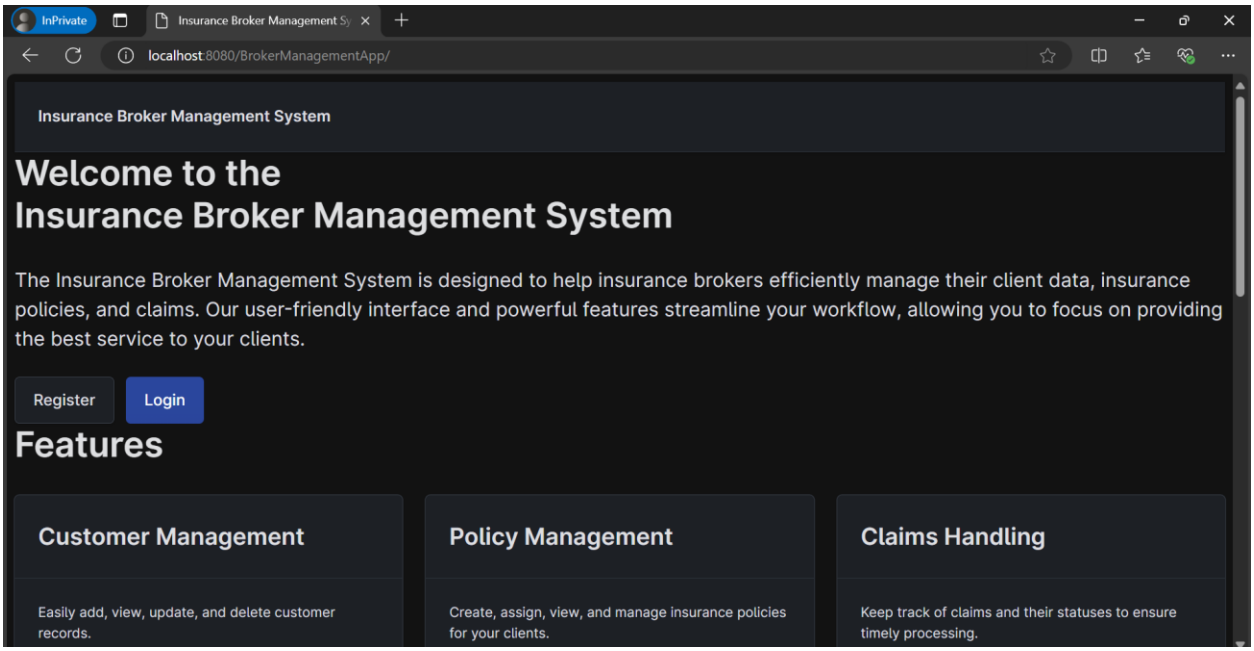
- The data in this architecture is stored in JSON format. The JSON files (customers.json and policies.json) contain serialized data about customers and policies.
- Jakson is used as external jar to manage json files from java code.

Repository Design Pattern

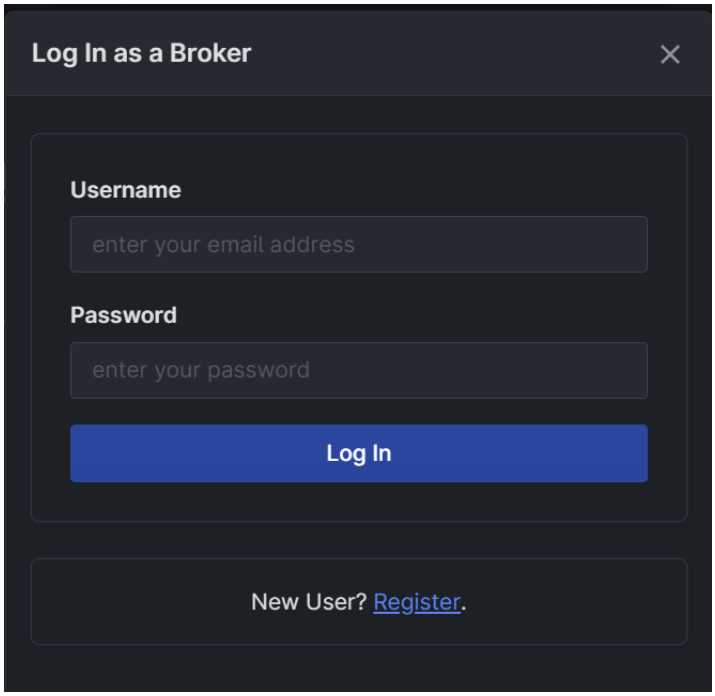
- The Repository pattern is used in application to abstract and encapsulate the logic for accessing data sources. It provides a way to separate the data access logic from the business logic for loose coupling.
- The Repository Design Pattern provides a clear abstraction for data access, making the system flexible and maintainable. This architecture could be extended to use databases or other storage mechanisms in the future, without needing to change the business logic.

Screenshots

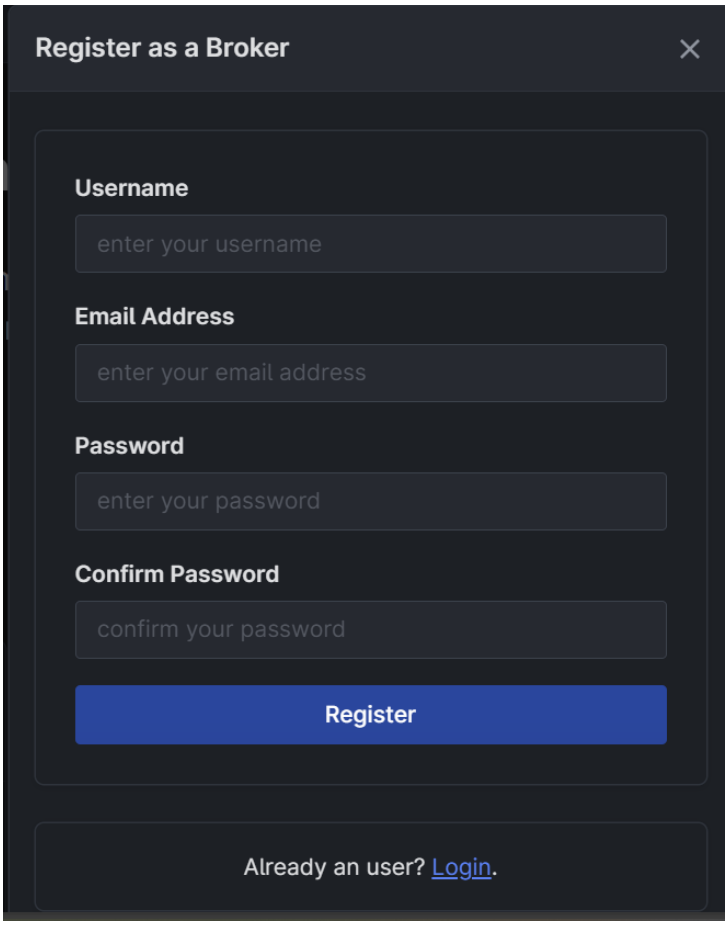
Welcome Page



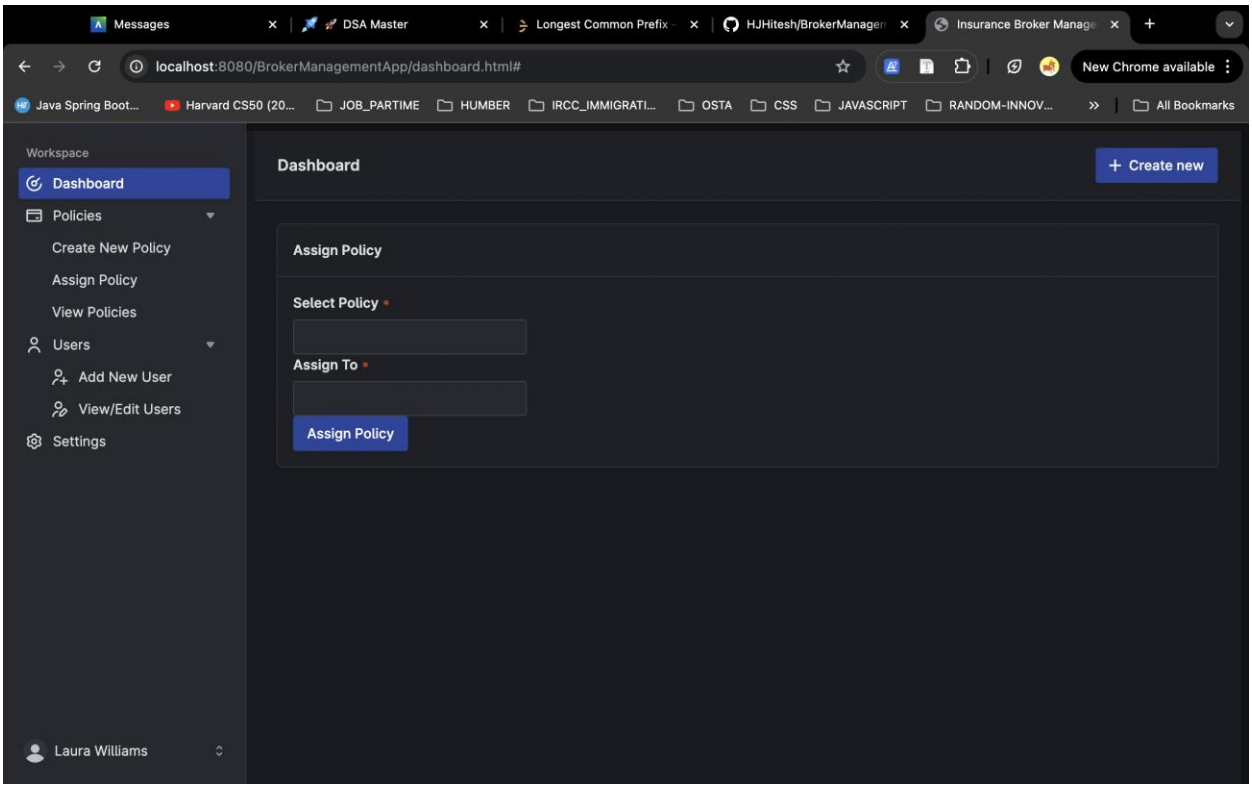
Login



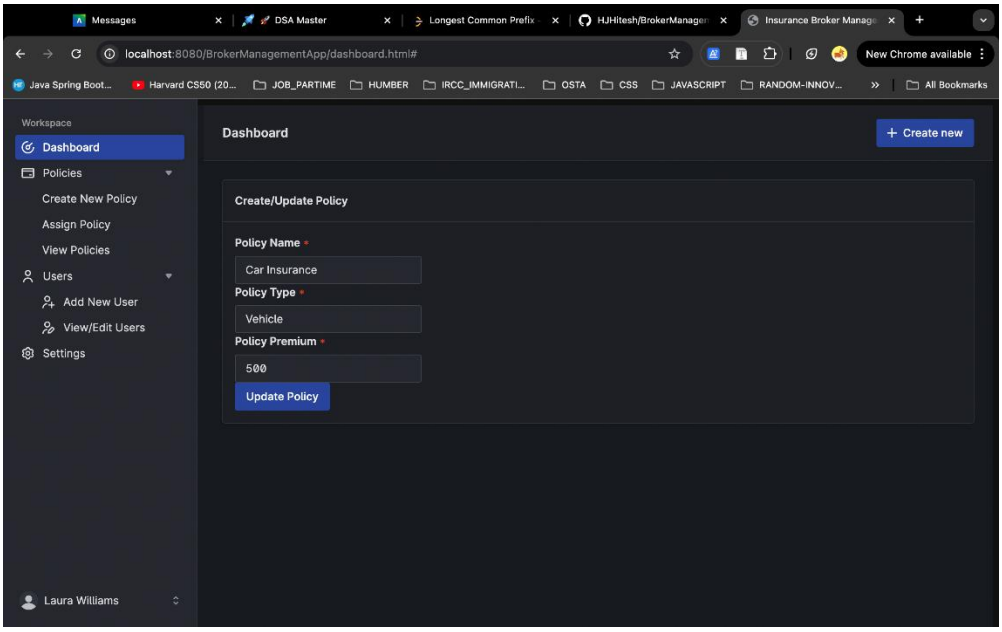
Register


Register as a Broker
Username
enter your username
Email Address
enter your email address
Password
enter your password
Confirm Password
confirm your password
Register
Already an user? Login.

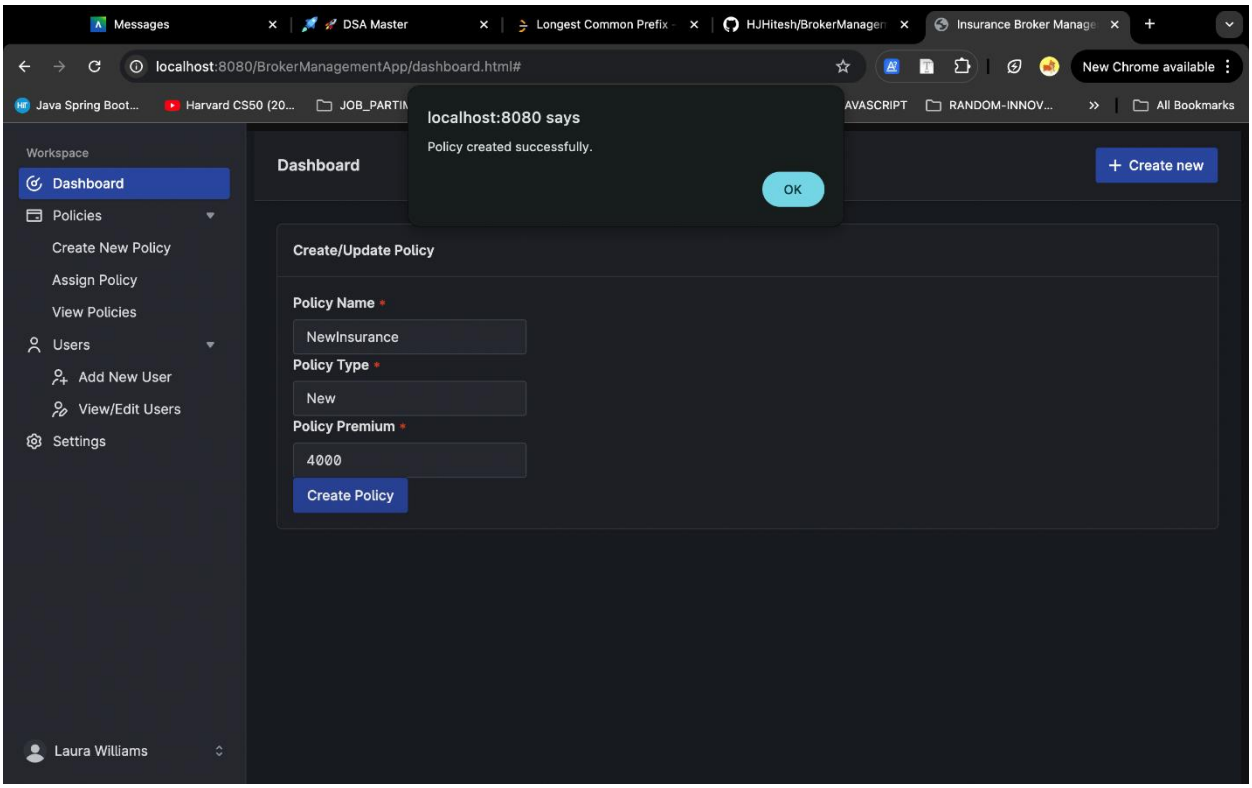
Assign policy



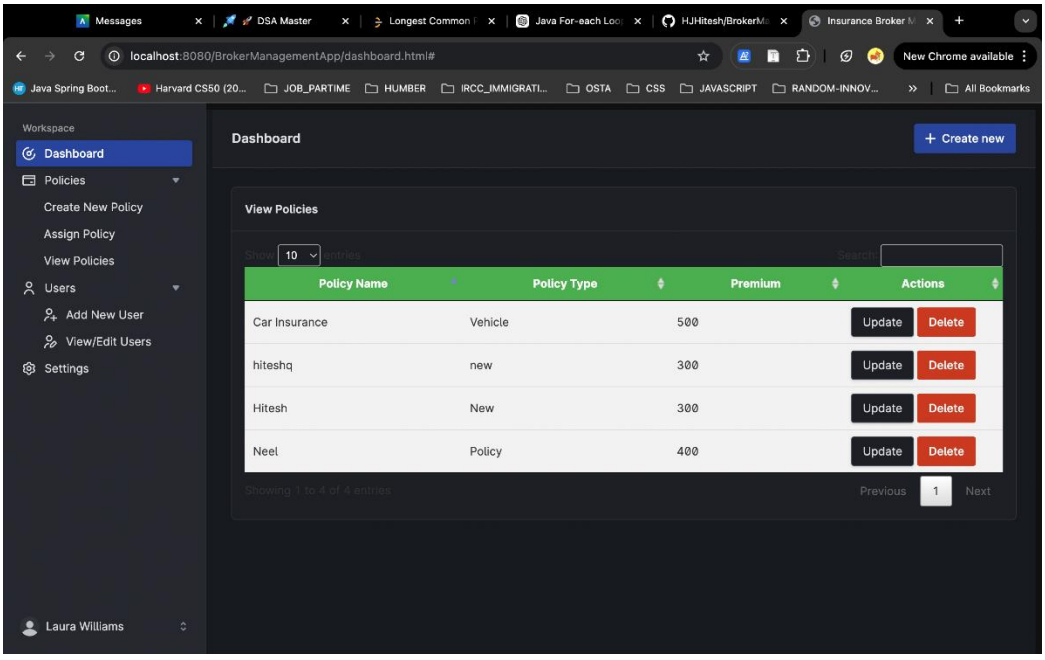
Create policy



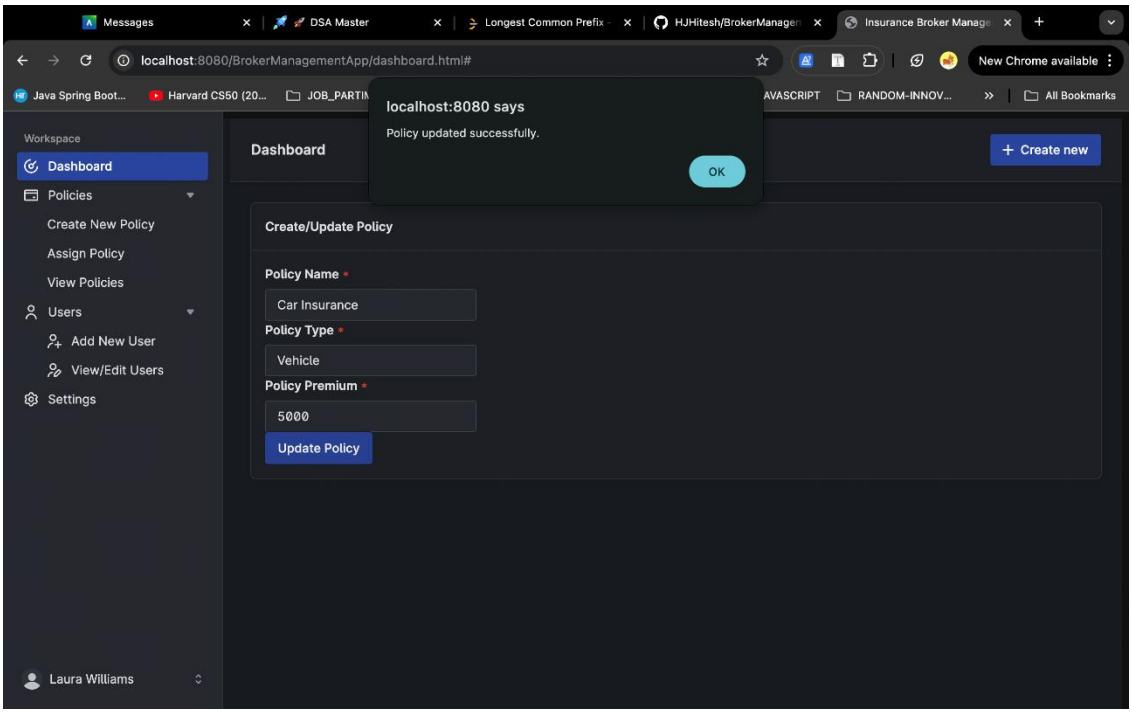
Policy create success



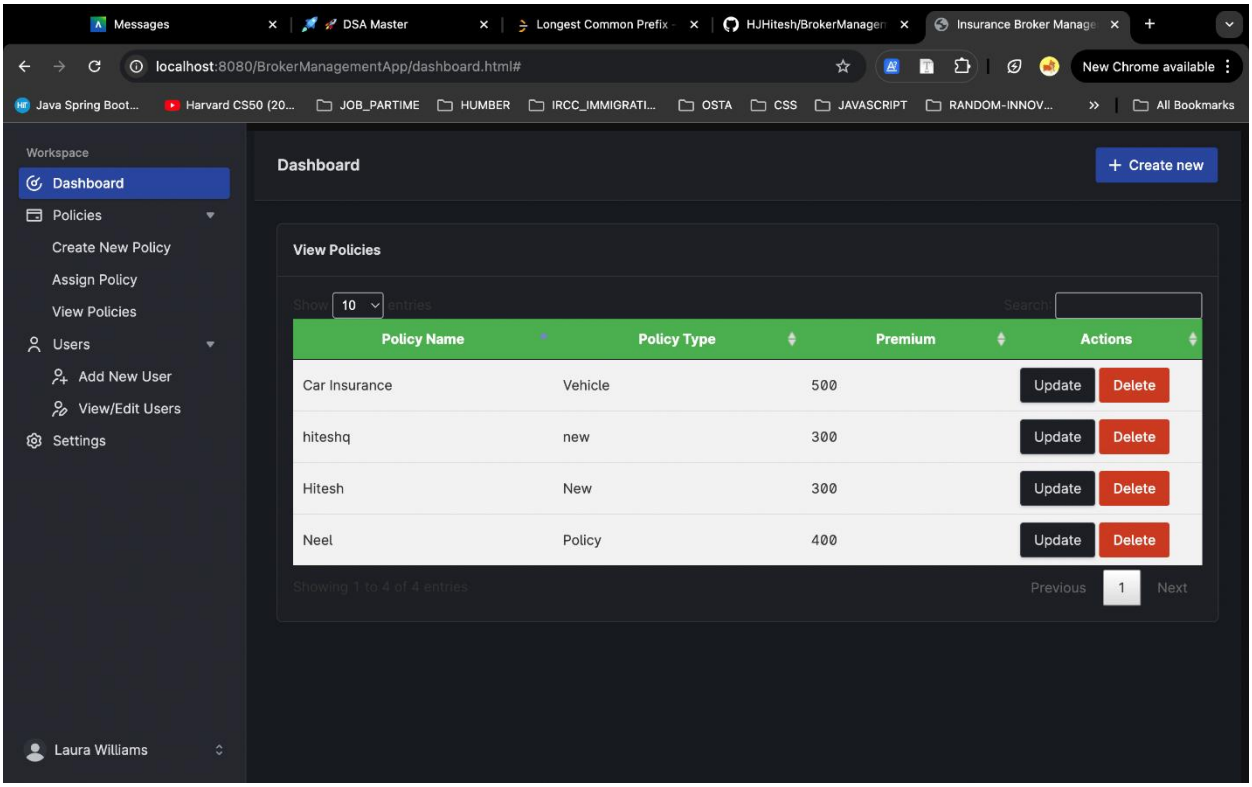
List Policy Delete



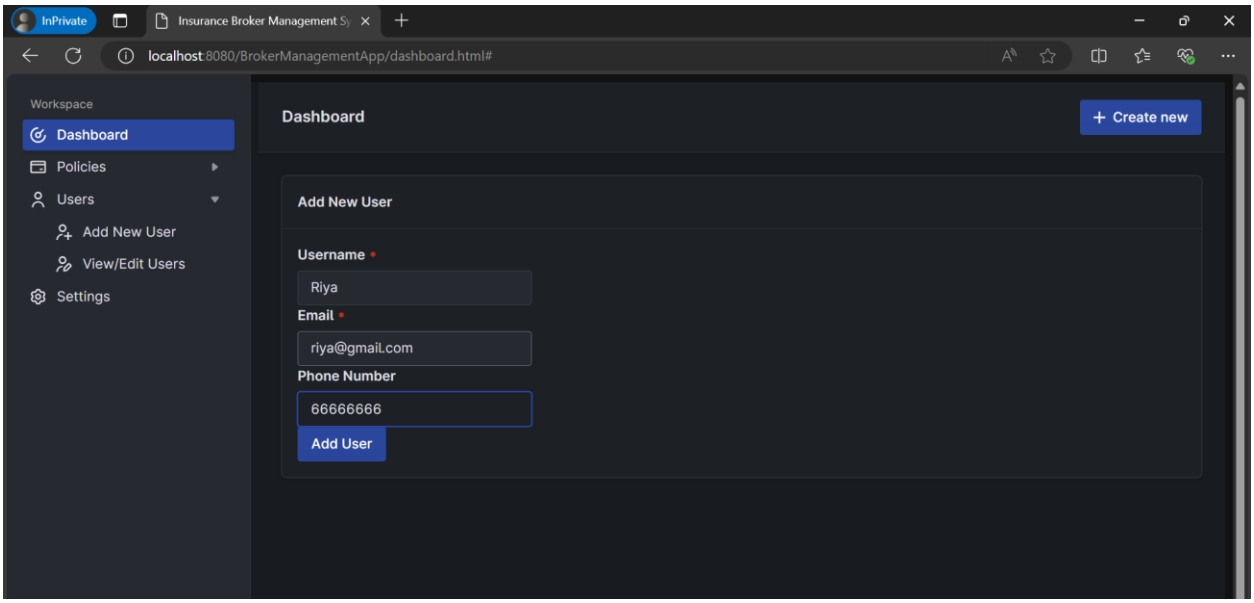
Update policy



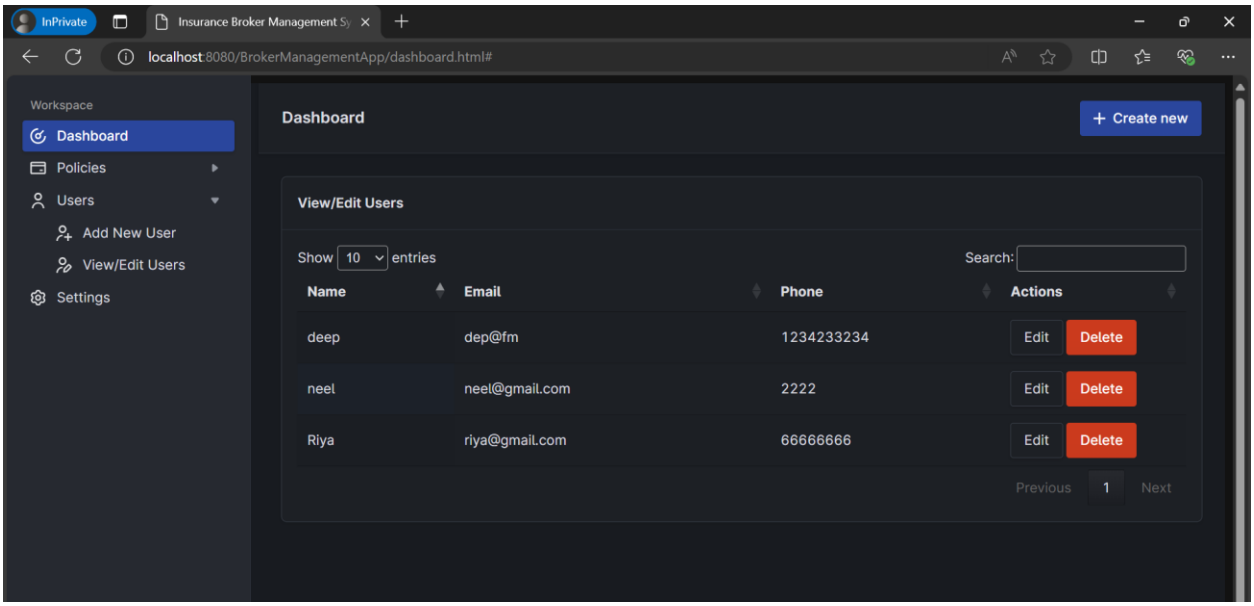
View policy



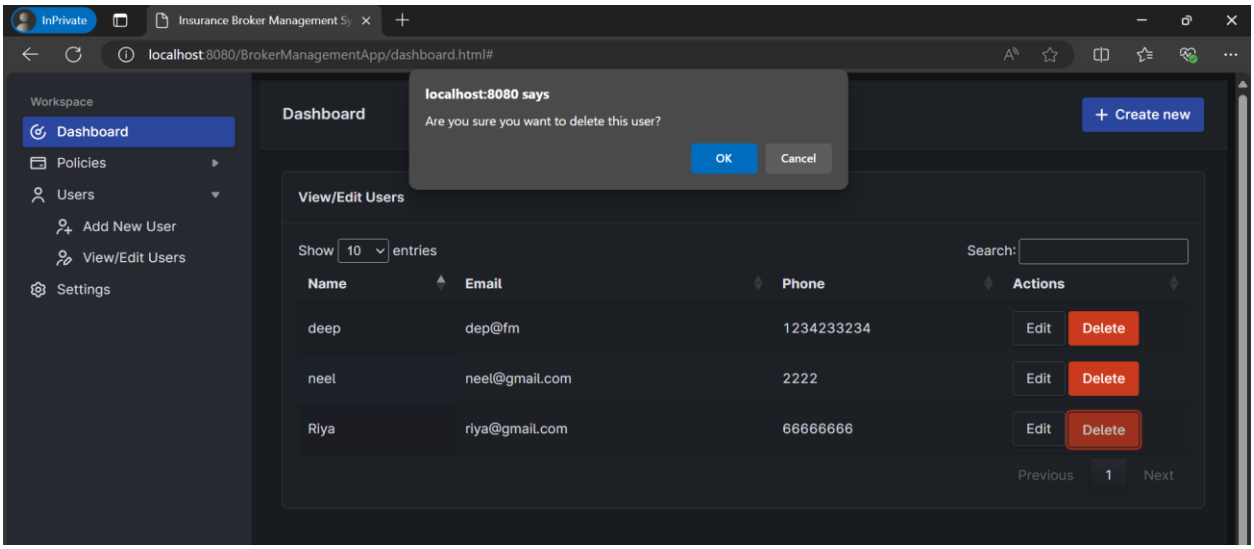
Add new user



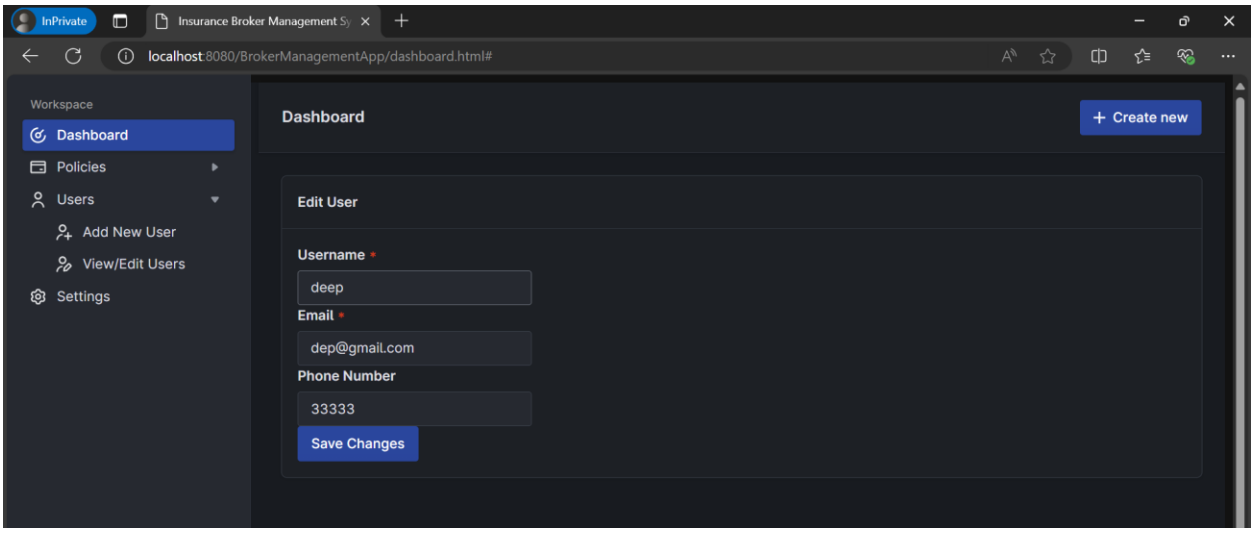
View User

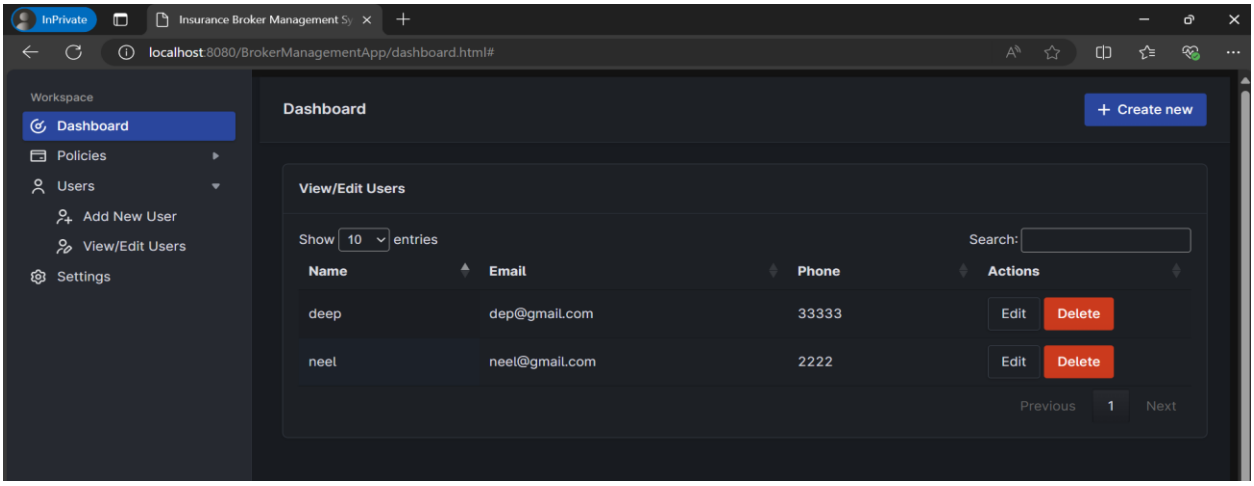


Delete User



Edit User

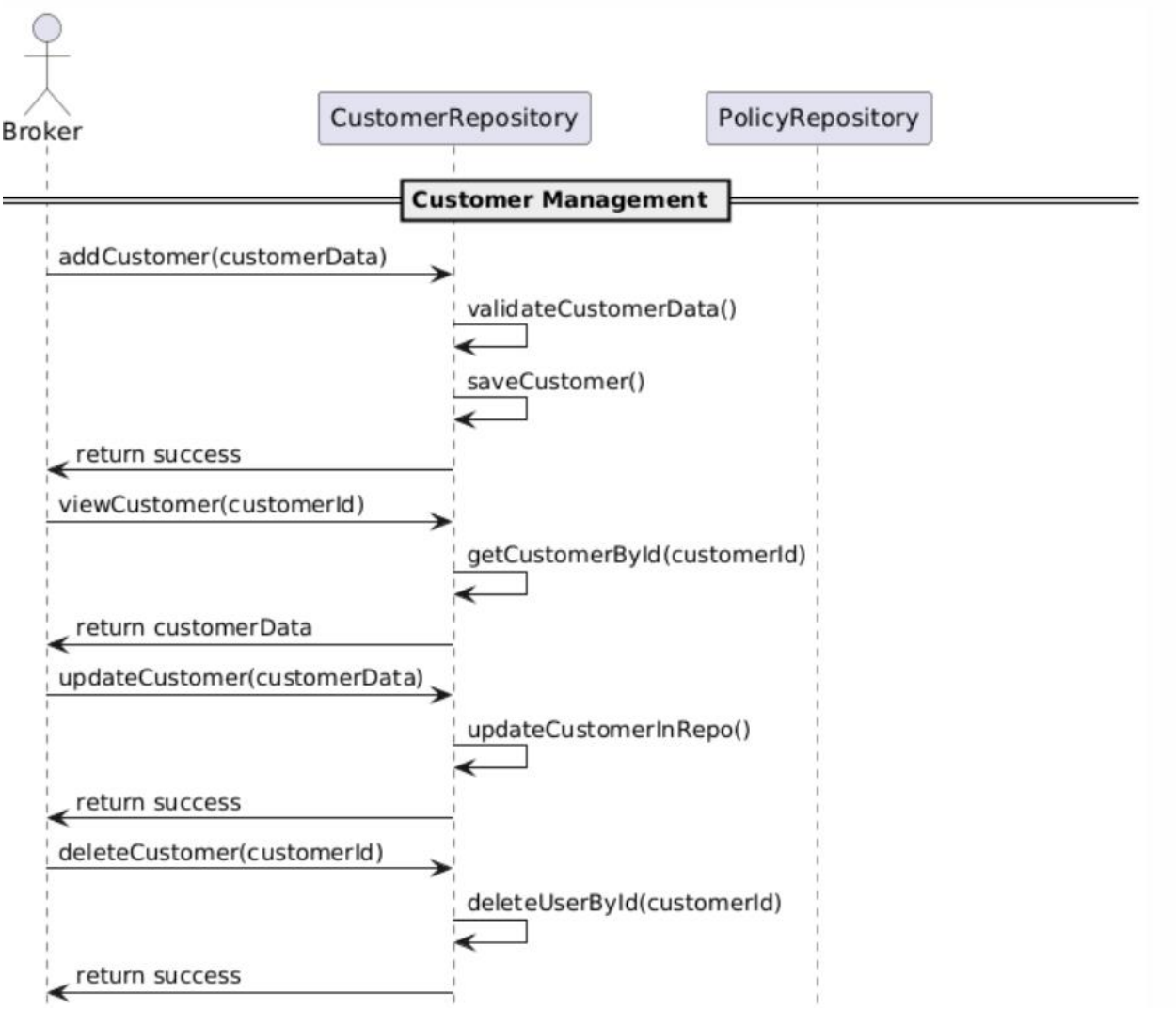


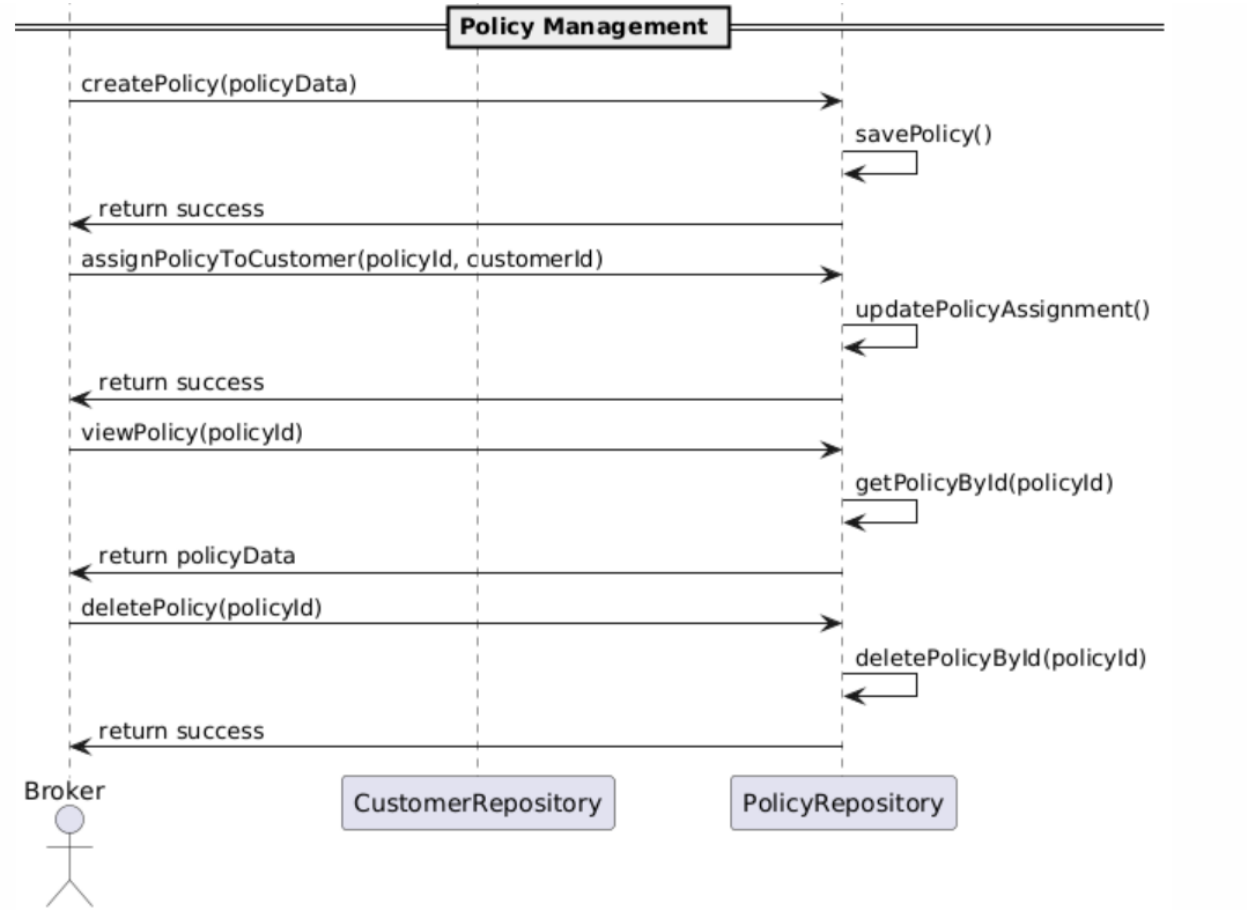


UML Diagrams

Class Diagram

Sequence Diagram





Collaboration Details

The team effectively collaborated using GitHub for version control and task management. Each team member was responsible for specific modules within the system, ensuring a clear division of responsibilities and smooth integration of the various components:

- Neel worked on the user management module.
- Hitesh developed the policy management features.
- Abdul Mubeen was responsible for the front-end development.

To ensure parallel development, we adopted a feature-based branching strategy. Each team member worked on their own designated branch:

- Neel: feature/neel-branch
- Hitesh: feature/hitesh-code
- Abdul: feature/front-end

This branching approach allowed us to work on individual features without interfering with others' work. Once a feature was completed, team members submitted pull requests to merge their code into the main branch. The pull request process included a thorough code review to ensure smooth integration and maintain high-quality standards. This workflow minimized conflicts, streamlined code merging, and maintained a consistent codebase.