**Module 3) Projects**

**● Describe a key project you have worked on or are currently working on**

**Project Title: ShareRide - Carpooling Platform**

**Role:** Java Developer

**Project Overview:** ShareRide is a web-based carpooling platform designed to connect drivers and passengers who are traveling in the same direction. The goal of the project is to provide a user-friendly and secure platform that facilitates carpooling, helping users save on travel costs, reduce traffic congestion, and minimize environmental impact.

**Key Features:**

* **User Registration & Authentication:** Users can sign up using their email or social media accounts, and their identity is verified through email/SMS confirmation. Secure login mechanisms, including OAuth2, were implemented.
* **Ride Matching Algorithm:** The platform features an advanced ride matching algorithm that suggests the best carpool options based on the user's location, destination, and time preferences.
* **Real-time GPS Tracking:** Integrated Google Maps API for real-time tracking of rides, allowing users to monitor their route and estimated arrival times.
* **Payment Integration:** Implemented secure online payment processing for fare splitting among passengers using Stripe API, ensuring smooth and reliable transactions.
* **Rating & Review System:** Users can rate their ride experience and leave reviews, fostering a trustworthy community.
* **Admin Dashboard:** Developed an admin panel to manage users, rides, payments, and monitor the system’s health and usage statistics.

**Explain the technologies used, the scope of the project, and its objectives.**

**Technologies Used:**

* **Backend:** Java, Spring Boot, Hibernate
* **Frontend:** Angular, HTML5, CSS3, Bootstrap
* **Database:** MySQL
* **APIs:** Google Maps API, Stripe API, OAuth2 for authentication
* **Tools & Frameworks:** Maven, Git, Jenkins for CI/CD, Docker for containerization

**Highlight the challenges faced and how you addressed them, showcasing your problem solving skills.**

**Challenges Faced:**

* **Scalability:** Initially, the system faced performance issues as the user base grew. To overcome this, I optimized the ride matching algorithm and introduced load balancing using AWS services.
* **Data Security:** Ensuring the security of user data and transactions was a priority. We implemented encryption for sensitive data and followed industry best practices for data security.
* **Real-time Updates:** Implementing real-time ride tracking required efficient handling of large data streams. We used WebSockets to ensure that users received instant updates on their rides.