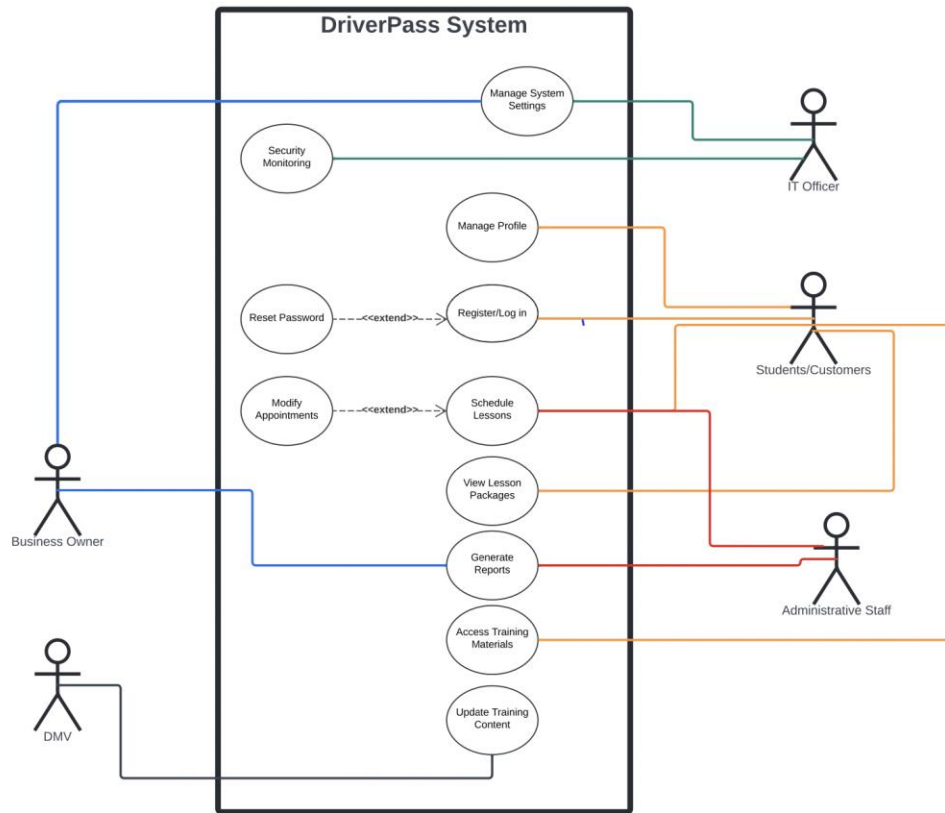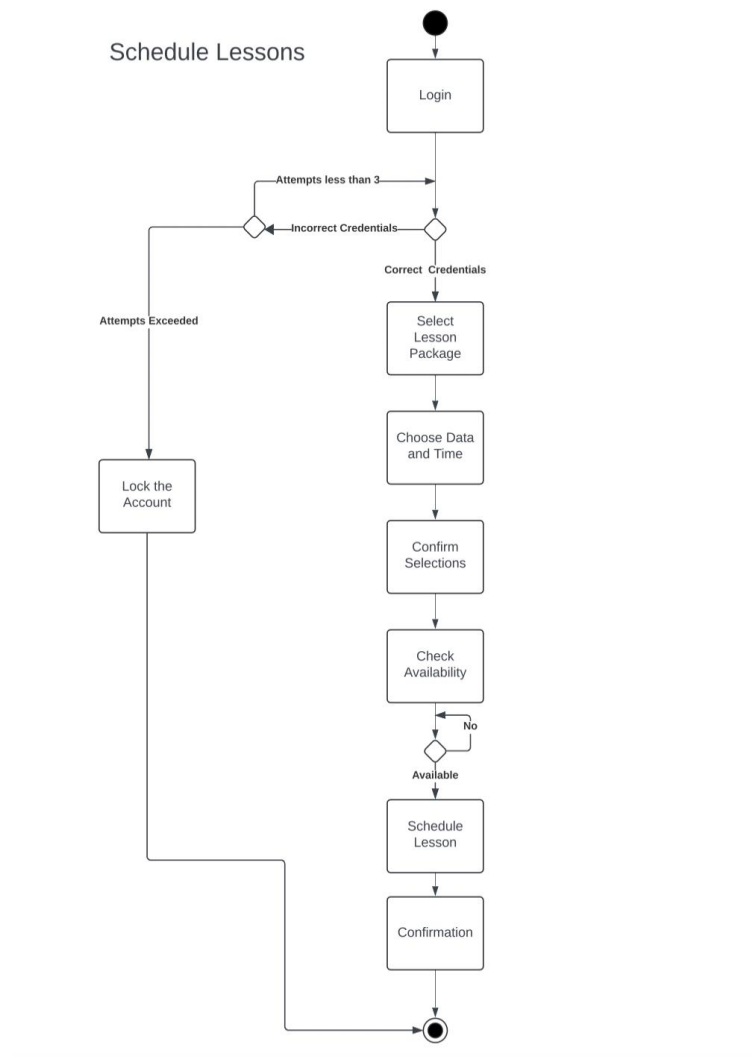# CS 255 System Design Document Template
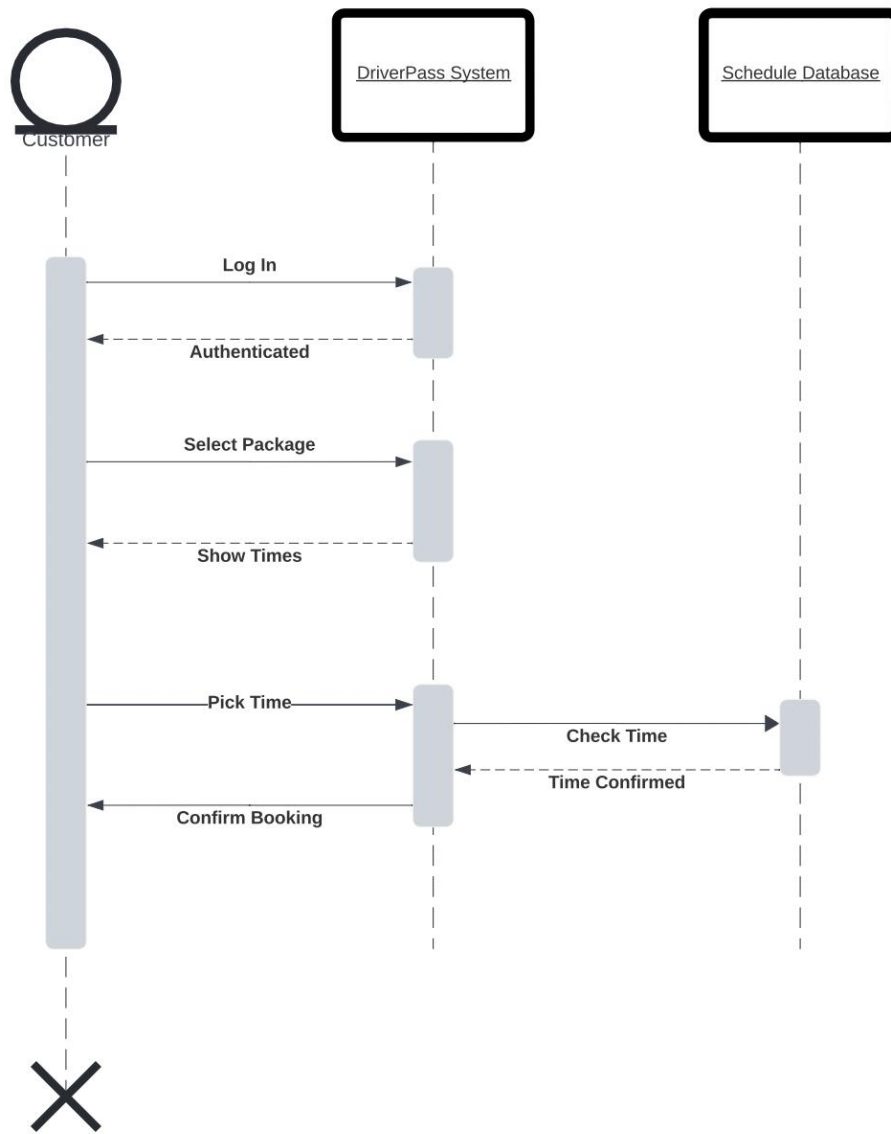
UML Diagrams

UML Use Case Diagram

Schedule Lessons

Generate Reports

```
                              ●
                              │
                              ▼
                        ┌──────────┐
                        │  Login   │
                        └──────────┘
                              │
      ◄──Attempts less than 3─┤
      ◄──Incorrect Credentials◄─◇
      ◇                         │
      │                  Correct  Credentials
      │                         │
      │                         ▼
      │                   ┌──────────┐
 Attempts Exceeded        │  Select Report │
      │                   │    Type   │
      │                   └──────────┘
      ▼                         │
 ┌──────────┐                   ▼
 │ Lock the │             ┌──────────┐
 │ Account  │             │Input Criteria│
 └──────────┘             │ for Report │
      │                   └──────────┘
      │                         │
      │                         ▼
      │                   ┌──────────┐
      │                   │  Submit  │
      │                   │ Request  │
      │                   └──────────┘
      │                         │
      │                         ▼
      │                   ┌──────────┐
      │                   │Retrieve Data│
      │                   └──────────┘
      │                         │    No
      │                         ◇◄──┘
      │                  Data Available
      │                         │
      │                         ▼
      │                   ┌──────────┐
      │                   │ Generate │
      │                   │ Report   │
      │                   └──────────┘
      │                         │
      │                         ▼
      │                   ┌──────────┐◄──┐
      │                   │ Display  │   │
      │                   │ Preview  │   │
      │                   └──────────┘   │
      │                         │        │
      │                         ▼     ┌──────────┐
      │                         ◇───►│Edit Report│
      │                         │    └──────────┘
      │                 Report is Accurate
      │                         ▼
      │                   ┌──────────┐
      │                   │ Confirm  │
      │                   └──────────┘
      │                         │
      │                         ▼
      │                   ┌──────────┐
      │                   │Export/Print│
      │                   └──────────┘
      │                         │
      └───────────────────────►◉
```

Customer

DriverPass System

Schedule Database

Log In

Authenticated

Select Package
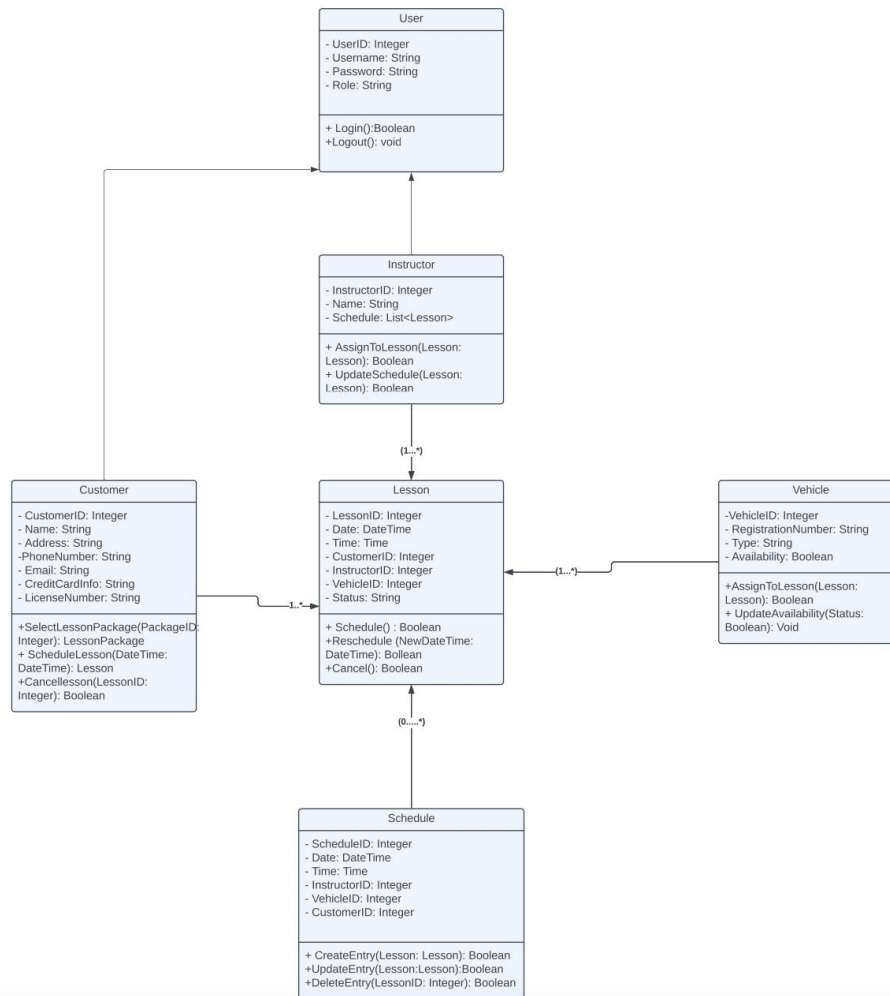
Show Times

Pick Time

Check Time

Time Confirmed

Confirm Booking

Technical Requirements

1. Hardware Requirements
   - Servers: Cloud-based servers are recommended to manage the web and database services, allowing for scalability and flexibility.
   - Client Devices: Compatibility with a range of devices (desktops, laptops, tablets, smartphones) to accommodate various customer access points for scheduling lessons, as shown in the sequence diagram.
2. Software Requirements
   - Database Management System: A robust relational database like MySQL to support complex queries and transactions for customer data, lessons, and packages, consistent with the class diagram where multiple classes interact through database operations.
   - Backend Framework: Use of a framework like Django for Python, which can efficiently handle the routing, controllers, and views as specified in the UML sequence and class diagrams.

- Frontend Technologies: Utilization of React or Angular for building a responsive and interactive front-end that integrates seamlessly with the backend, accommodating the system operations outlined in the activity diagrams.

3. Tools
- UML Tools: To maintain and update the UML diagrams as the system evolves, tools like Lucidchart.
- Development and Deployment Tools: Integrated Development Environments (IDEs) like Visual Studio

4. Infrastructure
- Cloud Services: Adoption of AWS or Google Cloud Platform to provide a scalable infrastructure that supports web and database servers, and aligns with the need for a high-performing, accessible system.
- Security Measures: Implementation of advanced security protocols like HTTPS for secure data transmission

5. Integration Requirements
- APIs for DMV and Payment Systems: The system needs to integrate with external APIs for DMV updates and payment processing services, facilitating real-time data synchronization and secure financial transactions.

6. Maintenance and Support
- Software Updates and Support: Plans for regular software updates to improve functionality and address security issues.