# CS 255 System Design Document

**D.D. Sessions**

## UML Diagrams

### UML Use Case Diagram

A screen shot of a cell phone

Description automatically generated

### UML Activity Diagrams

A screenshot of a cell phone

Description automatically generated

A screenshot of a phone

Description automatically generated

### UML Sequence Diagram

A black background with a black square

Description automatically generated with medium confidence

### UML Class Diagram

A screenshot of a computer

Description automatically generated

## Technical Requirements

The DriverPass system will need to run in a web-based environment so that it is accessible anytime from anywhere, and it will need to perform at a high speed to navigate through the practice exams and other pages within the application. A powerful server with multiple processors and a large amount of memory will be needed to account for users interacting with the program in real-time.

A platform like .NET MAUI should be used to ensure the program is compatible with multiple operating systems such as Windows, Mac, iOS, and Android. A database such as SQL is necessary to store all information associated with this application. C# is a great language to use for this project.

All users will need a unique username, and any errors should be reported to the admin team.

We will implement code that will make it possible to make changes to different components of the program (users, courses, exams, and DMV policies). HTTPS will be used to secure the connection or the data exchange between the client and the server along with SSH protocol to establish a secure connection paired with SFTP to secure file transfers. Administrators need to set up a maximum number of log in attempts for users, and passwords can be reset by answering security questions.

The system will need role assignments and adjustable user profiles, an intuitive user interface, smooth data integration, effective content management, responsive mobile learning support, and flexible online testing options.

The interface will need to be user-friendly, clear and concise, interactive, and offer easy navigation. Users for the interface will be students, owner, IT officer, secretary, and drivers. The owner will need to view and download reports as Excel spreadsheets; reset passwords; block user access; maintain and modify the system; add users; make reservations; disable and enable reservation package options; and receive notifications when the DMV updates rules, policies, or sample questions. The IT officer will need to maintain and modify the system; reset passwords; block user access; add users; disable and enable reservation package options; and receive notifications when the DMV updates rules, policies, or sample questions. The secretary will need to add new students and make reservations. The student will need to create an online account; make, cancel, and modify reservations; view scheduled driving sessions (completed and upcoming); if applicable, view online class material and take practice tests; and reset his or her password. The driver will need to access his or her reservation schedule, monitor the students’ progress, and provide feedback to the students. All users will need to interact with the interface by mobile, web browser, or any other device that has an internet connection.