# CS 255 Business Requirements Document Template

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Complete this template by replacing the bracketed text with the relevant information.

This template lays out all the different sections that you need to complete for Project One. Each section has guiding questions to prompt your thinking. These questions are meant to guide your initial responses to each area. You are encouraged to go beyond these questions using what you have learned in your readings. You will need to continually reference the interview transcript as you work to make sure that you are addressing your client’s needs. There is no required length for the final document. Instead, the goal is to complete each section based on your client’s needs.

**Tip:** You should respond in a bulleted list for each section. This will make your thoughts easier to reference when you move into the design phase for Project Two. One starter bullet has been provided for you in each section, but you will need to add more.

## System Components and Design

### Purpose

*What is the purpose of this project? Who is the client and what do they want their system to be able to do?*

* The purpose of this project is Driver Pass wanting to have a better advantage on the need for better driving instructions. The system needs to be able to provide online, virtual instruction, in person training, and on the road training. There also needs to be a system that can manage reservations.

### System Background

*What does DriverPass want the system to do? What is the problem they want to fix? What are the different components needed for this system?*

* Driver Pass has found a market for new drivers. They want to help new drivers by offering driving practice with online classes and practice quizzes. They also want to offer live training. This will help achieve their goal that they have in mind of helping new drivers be more prepared for their driving tests at the DMV, reducing the number of failed tests and creating confident drivers!

### Objectives and Goals

*What should this system be able to do when it is completed? What measurable tasks need to be included in the system design to achieve this?*

* The system should be able to have a reservation and appointment system. This means being able to make/cancel/edit appointments and also being able to document the instructor, car, and time for the reservation/appointments. Read only data is a feature that needs to be provided so that it can be accessed when offline. DriverPass needs to have user and password security features that can be accessed by an administrator. An administrator should also be able to access any changes that occurred to the system/dataset as an extra cushion of security, and to keep accountability.

## Requirements

### Nonfunctional Requirements

*In this section, you will detail the different nonfunctional requirements for the DriverPass system. You will need to think about the different things that the system needs to function properly.*

The system should be reliable and able to keep accurate records of student progress at all times, even if problems occur. It should perform well, with fast page load speeds, and be secure to protect any personal information. The system must also be scalable to handle more students and updated learning materials as needed. It should work well on mobile devices with responsive design. The interface should be easy to use and understand. All learning materials must be up-to-date, trustworthy, and follow DMV guidelines. Additionally, driver instructors must be properly vetted, licensed, and certified when required.

#### Performance Requirements

*What environments (web-based, application, etc.) does this system need to run in? How fast should the system run? How often should the system be updated?*

This is a web-based distributed system, with Linux-based servers handling requests from various browser clients. The system needs to perform well, as it will handle network-heavy tasks like accessing up-to-date DMV-compliant testing materials and submitting form data for reservations or account updates. The database should be updated whenever there is progress on practice exams, when drivers submit feedback from lessons, when reservations are made, completed, updated, or canceled, and when new DMV guidelines are released.

#### Platform Constraints

*What platforms (Windows, Unix, etc.) should the system run on? Does the back end require any tools, such as a database, to support this application.*

Since the system is web-based, it is platform-agnostic and will work on Mac, Linux, and Windows operating systems. Development will focus on compatibility with current versions of major web browsers, including Chrome, Edge, Firefox, and Safari. The backend will need a database, and either a SQL or NoSQL solution can be used, depending on the specific needs of the application.

#### Accuracy and Precision

*How will you distinguish between different users?* *Is the input case-sensitive? When should the system inform the admin of a problem?*

System users will be identified by password-protected accounts, using usernames and passwords for authentication. Each user will be assigned a role that determines their level of access to system resources. To enhance security, input will be case-sensitive. Additionally, there will be a limit on the number of incorrect password attempts, and exceeding this limit will trigger a notification to the system administrator.

#### Adaptability

*Can you make changes to the user (add/remove/modify) without changing code? How will the system adapt to platform updates? What type of access does the IT admin need?*

System users, including both customers and DriverPass staff, will be able to create new accounts. They will also have the ability to modify their account information, such as contact details, through editable form submissions using POST requests, with the system's backend built to support this functionality. Users will also be able to delete or remove their accounts as needed. While browsers may update frequently, these changes typically won’t affect the backend, though patches will be applied when necessary to maintain compatibility. System updates across the frontend, backend, and database layers will be rolled out as features or bug fixes are completed, and will be scheduled during off-peak hours to reduce disruption. Agile development practices will be used to introduce smaller, frequent updates that carry less risk than large overhauls. Also, the IT administrator will have full access to manage accounts, including resetting passwords and revoking access for former employees.

#### Security

*What is required for the user to log in? How can you secure the connection or the data exchange between the client and the server? What should happen to the account if there is a “brute force” hacking attempt? What happens if the user forgets their password?*

Users will need a username and password to log into the system. All network requests will be made over HTTPS to ensure secure communication between client devices and backend services. Sign-in forms will use HTTPS POST requests so that sensitive information isn’t exposed in the URL. Sensitive data transmitted over the network will also be encrypted using cryptographic methods. To protect against brute force attacks, accounts will be locked after five incorrect login attempts, and the IT admin will be notified. The admin can then inform the user of the steps needed to reset their password and unlock their account. Users can also request a password reset themselves by providing a matching piece of account information, such as their email address, after which a reset link will be sent to them.

### Functional Requirements

*Using the information from the scenario, think about the different functions the system needs to provide. Each of your bullets should start with “The system shall . . .” For example, one functional requirement might be, “The system shall validate user credentials when logging in.”*

 The system shall require user authentication and authorization, validating user credentials during login. Authorization levels shall be based on the user’s account type.

 The system shall be web-based. Instructional materials may be downloaded for offline access, but data such as reservations or password changes shall only be updated online.

 The system shall track user activity, including who made, canceled, or last modified a reservation.

 The system shall provide reporting features, including detailed activity reports.

 The system shall initially offer three DriverPass course packages and allow individual packages to be disabled. New packages may be added in future development.

 The system shall accept the following customer details during account registration:

1. First name
2. Last name
3. Address
4. Phone number
5. State
6. Credit card number, expiration date, and security code

 The system shall allow users to reset their passwords.

 Instructional materials shall comply with current DMV guidelines.

 The system shall display users’ exam progress and grades.

 The system shall provide instructor feedback to students.

 The system shall allow exams and materials to be added, modified, or deleted.

 The system shall support communication between users and instructors, secretaries, or administrators.

### User Interface

*What are the needs of the interface? Who are the different users for this interface? What will each user need to be able to do through the interface? How will the user interact with the interface (mobile, browser, etc.)?*

The system interface shall include several main pages: a home page, an account registration page, a course material access page, a driving lesson reservation page, a student information page, and a DriverPass contact page. The student information page shall include sections for test progress, a contact form, and driver notes. The test progress section shall display details such as the test name, time taken, score, and current status, which shall be indicated as either not taken, in progress, failed, or passed. The driver notes section shall include a table showing lesson times, start and end hours, and fields for driver comments.

User roles and access levels within the system shall be clearly defined. The DriverPass owner and the information technology officer shall both have full access to all accounts and the ability to update passwords. The DriverPass secretary shall have access to schedule, cancel, and modify appointments. Customers and students shall have access to create accounts, view learning materials, and manage their own appointments, including scheduling, canceling, and modifying them.

Since the system is web-based, all interface interactions shall take place through a browser, whether on mobile devices, tablets, or desktop computers. At this time, there are no plans to develop native mobile applications for Android or iOS.

### Assumptions

*What things were not specifically addressed in your design above? What assumptions are you making in your design about the users or the technology they have?*

The internet is available 24/7 to support system functions like recording student progress, updating exams, and scheduling driving lessons. It’s assumed that DMV guidelines are consistently kept up to date and remain freely accessible. With the growing popularity of mobile apps, developing native DriverPass apps for iOS and Android may become a priority in the near future.

DriverPass users are expected to have a working internet-connected device that meets the system’s operating system and browser requirements. Since most customers are likely to be younger and more tech-savvy, the website is expected to receive the most traffic compared to in-person visits or phone calls.

### Limitations

*Any system you build will naturally have limitations. What limitations do you see in your system design? What limitations do you have as far as resources, time, budget, or technology?*

The system depends on internet access, so users can’t create, update, or access data like study materials or reservations without being online. Electricity is also needed to power the system and user devices.

Buying physical servers is expensive and takes time. Using a cloud-based system is a better option because it’s cheaper upfront and faster to set up. The number of staff and whether outside help is needed will depend on the budget and time available. If the current team lacks experience with the technology, they may need extra training. Lastly, the system relies on DMV guidelines, so any delays or changes to those could affect the learning content.

### Gantt Chart

*Please include a screenshot of the GANTT chart that you created with Lucidchart. Be sure to check that it meets the plan described by the characters in the interview.*

A screen shot of a calendar

AI-generated content may be incorrect.