# CS 255 Business Requirements Document Template

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 to design and develop a comprehensive online driver training system for DriverPass, our client. DriverPass wants the system to provide online practice examinations to help students prepare for their DMV driving tests, offer scheduling capabilities for on-the-road practical driving lessons, and deliver accessible, safe, and up-to-date learning materials. The system aims to enhance the management of reservations for driving lessons, keep records of driving lessons given, and ultimately help students better prepare for and pass their driving tests at the DMV. By offering a combination of online resources and practical training opportunities, this system addresses the high failure rate of driving test applicants, fulfilling DriverPass's goal of improving student success in obtaining their driving licenses.

### 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?*

* DriverPass seeks to address the high failure rate (over 65%) of driving test applicants by providing a comprehensive training solution. The system aims to give students the opportunity to take online practice tests and receive face-to-face practical training. Key components of the system include user accounts, online classes, practice exams, appointment scheduling for on-road training, access to learning materials, and reporting capabilities. The system should also include a database accessible both online and offline, though data modification will only be possible online to maintain consistency. Security measures will be implemented to protect data from unauthorized access. Additionally the system will need to link to the DMV database to ensure up- to date information on driving regulations and test requirements. An administration panel will be included to manage the system and its users. By combining these elements DriverPass aims to create a robust platform that significantly improves students' chances of passing their driving tests.

### 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 primary objectives and goals of the DriverPass system are to create a comprehensive, web-based platform accessible from both computers and mobile devices. This system will implement user accounts with varying access levels for administrators, IT personnel, secretaries, and customers, ensuring appropriate system usage and data access. A key goal is to develop an online class platform featuring practice tests and learning materials, offering students thorough exam preparation. The system aims to provide an efficient reservation system for scheduling driving lessons, allowing users to make, modify, and manage their appointments easily. To support data driven decision making, a robust reporting system will be implemented to track user activity, lesson records, and business metrics. Safeguarding access and data through strong security measures is crucial to protect user information and maintain system integrity. The system will establish a connection to the DMV database to receive updates on new regulations and practice test information, ensuring content remains current. Additionally, the platform will enable users to interact with various activities, including taking online exams and accessing tutorials, while providing administrators with tools to effectively monitor and manage user activities and system performance. Ultimately these objectives and goals are designed to create a user friendly system that meets DriverPass's needs and significantly improves students chances of success in their driving tests.

## 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.*

#### 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?*

* The DriverPass system must be web-based and cloud-hosted, ensuring accessibility through any internet connected device including computers and mobile platforms. This web-based architecture is crucial for providing users with flexibility and convenience. The system should operate efficiently minimizing time consumption for all user interactions and processes. Real time updates to the database are essential to maintain data accuracy and consistency across the platform. To keep pace with changing regulations, the system must undergo regular updates to ensure all content, particularly information related to DMV regulations and test requirements, remains current. Performance is a key consideration, and the system should be capable of supporting multiple concurrent users without experiencing significant slowdown. This requirement ensures that the platform can handle peak usage periods smoothly, providing a seamless experience for all users regardless of the number of simultaneous connections. By meeting these performance requirements, the DriverPass system will deliver a responsive, up to date and reliable service to its users.

#### 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?*

* The DriverPass system faces several platform constraints that must be addressed in its design and implementation. Primarily, the entire system should be based on cloud services to leverage the benefits of scalability and automated backups. This cloud based approach ensures that the system can easily accommodate growth in user base and data volume without significant infrastructure changes. The system must be accessible through various web browsers and portable device types, including computers, tablets, and smartphones, to maximize user accessibility and convenience. This cross platform compatibility is crucial for meeting the diverse needs of DriverPass's user base. A robust database backend is required to efficiently store and manage user information, test results, and scheduling data. This database must be designed to handle complex queries and frequent updates while maintaining data integrity and performance. By adhering to these platform constraints, the DriverPass system will provide a flexible, scalable, and widely accessible solution that meets the needs of both the business and its users.

#### 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?*

* User data entry is a critical area where accuracy is paramount the system should be designed to handle and distinguish any case sensitivity in inputs correctly. It's essential that the system provides a straightforward mechanism for administrators to be promptly informed of any discrepancies or problems enabling quick resolution of issues. Accurate tracking of user progress in online classes and test scores is crucial for providing reliable feedback to students and maintaining the integrity of the learning process. The appointment scheduling feature demands precision to avoid any conflicts in bookings, ensuring a smooth experience for both students and instructors. To maintain data integrity, the system must implement robust validation processes for user inputs, particularly for personal information and test answers. This validation should occur in real time where possible, prompting users to correct any inaccuracies immediately. By prioritizing accuracy and precision in these areas, the DriverPass system will provide a dependable and trustworthy platform for both users and administrators.

#### 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?*

* A key aspect of this adaptability is the ability to modify certain system elements without altering the underlying code, allowing for flexibility in user management and content updates. The system should be built to easily accommodate future additions or modifications to training packages, enabling DriverPass to evolve its offerings as needed. Crucially, the platform must be able to seamlessly integrate updates to DMV rules and policies, ensuring that all training materials and practice tests remain current and relevant. To facilitate smooth operation and maintenance, IT administrators should be granted full access to manage user accounts and system settings. This level of access allows for efficient system management and quick resolution of any issues that may arise. The system's architecture should also be designed to remain compliant with any changes or updates to the underlying platform, ensuring long-term stability and compatibility.

#### 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?*

* The system must implement strict security protocols for user authentication, ensuring that all users are required to log in with strong, unique credentials. To enhance security, sensitive data transmission, including personal information and payment details, should be encrypted using industry-standard protocols. This encryption should extend to all data exchanges between the client and server, safeguarding information during transit. The system must also incorporate advanced measures to prevent unauthorized access, particularly focusing on protection against brute force attacks. This can include techniques such as account lockouts after multiple failed login attempts and implementing CAPTCHA systems. Additionally, the platform should provide users with a secure method to recover or reset their passwords, balancing security with user convenience. To further protect user privacy, all sensitive data stored in the system's database should be encrypted at rest.

### 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 permit the users to be able to schedule a driving lesson, and edit or delete it. Also allow availability of online sample papers and training. Recording of lesson schedule, the driver allocated to the group, and the vehicles schedule. Produce reports that relate to the activities of the user and other details of lessons. And help to allow the administrators, the IT officers, and the users to have access to accounts based on their authority.

### 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 interface will be web-based, ensuring accessibility from both computers and mobile devices through web browsers and potentially a dedicated mobile app. The interface will cater to different user roles, including administrators, IT officers, secretaries, and customers, each with tailored access and functionality. Customers will enjoy a streamlined experience, easily accessing classes, taking tests, and managing their appointments. Administrators and IT officers will have access to comprehensive management and reporting features, allowing them to oversee system operations effectively. The secretary role will be equipped with tools to efficiently manage appointments and customer information

### 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?*

* It is assumed that users have access to internet-connected devices, whether they be computers, tablets, or smartphones, as the system is designed to be web-based. Another important assumption is that the DMV will provide regular updates on rules and policies, allowing the system to maintain current and accurate information. This is essential for the system's relevance and effectiveness in preparing students for their driving tests. As the system evolves and more features are added in the future, it is understood that additional development effort will be required for each new feature. This ongoing development is an implicit assumption in the system's ability to adapt and grow over time.

### 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?*

* Customization of training packages may not be highly developed initially as part of the development process. The strength of the system is limited by the possibility of having the required amount of money and time for its development.

### 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.*

