# 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?*

* This project is for our client DriverPass, an educational business focused on instructing prospective drivers. The purpose is to prepare users for their driver’s test through online content and by scheduling in-person training.

### 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 has asked us to build a system that provides users with online educational content, a means to schedule appointments with one of their drivers and receive new information from the DMV as they make updates.
* The system allows the user to select from one of three training packages.
  + DriverPass has expressed interest in adding customizable packages in the future, so the packages will need to be built with modularity in mind.
* The system will consist of a web-based application that runs in the cloud. Users will connect to the application via the internet through a computer or mobile device.

### 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 will provide users with differing functions based on their role.
* Administrators will have the following functions:
  + Download reports in a spreadsheet compatible format.
  + Enable and disable available packages for customers to purchase.
  + Access activity reports of users for events such as making, cancelling, or modifying reservations.
  + Edit existing user information, reset user passwords, and flag users as being blocked from the system.
* Customers will have the following functions:
  + View online test progress.
    - Displays test name, time taken, score, and status (not taken, in progress, failed, passed)
  + View driver notes
  + View personal information.
  + View driver and student photos
  + Purchase one of three offered packages:
    - 1) Six hours in a car with a trainer
    - 2) Eight hours in a car with a trainer, in-person lesson on DMV rules and policies
    - 3) Twelve hours in a car with a trainer, in-person lesson on DMV rules and policies, access to online course content and material, including practice tests.
  + View online course content and tests, if the customer has purchased package three.
  + Make a reservation with a driver.
    - Reservations are for two hours at a time.

## 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 time it takes for the server to respond to a request from a client should not exceed 5 seconds.
* System overnight updates must be completed within 2 hours so that the system is available by 6:00 AM local time.
* The content should be updated to reflect any change in regulation made by the DMV within 24 hours of its posting.
* The system shall update driver instructor availability to the users every 30 seconds.

#### 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 system shall run on Windows Server 2019 via a virtual machine hosted through Amazon Web Services.
* Learning media, both video and text, shall be stored in a file system on the above server.
* User account information shall be stored in a database separate from the above server, also hosted through Amazon Web Services.
* Users shall be able to connect to the server via a web browser to access content.

#### 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 accounts shall have a flag noting whether they are administrators, representatives, drivers, or customers
* Representative and administrators shall be able to create new customer accounts.
* Administrator accounts and representative accounts shall only be created by another administrator account.
* Customers shall have the capability to view and edit their personal data, but will not be able to view and/or edit the data of other customers, representatives, or administrators. Customers shall also be able to schedule their own appointments and make cancellations or adjustments as they see fit.
* Representatives shall have the ability to view customers’ data as well as have the ability to make, cancel, and adjust appointments on behalf of the customer.
* Drivers shall have the ability to update their availability for appointments in the system. Further, they shall have the ability to view the name and profile pictures of users that they are scheduled with, as well as the times that they are scheduled and the subject of the appointment.
* Administrators shall have access to view customer, driver, and representative data, be able to change the passwords of customers, drivers, and representatives. Further, administrators shall have access to the server’s activity logs and be able to print out copies as needed.
* Login information, both for the username and password, shall be case sensitive
* The server shall log the events of appointments being created, modified, or cancelled, as well as when a driver changes their availability in a private, internal file on the server.
* The server shall email administrators in the case that a customer has made more than 5 appointment modifications within a 15 minute period, or when a driver edits their availability such that it results in a cancellation of a customer’s appointment.
* The server shall email administrators in the case that it cannot connect with the database

#### 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?*

* User information shall be stored in separate files on the database so that viewing or changing such information does not impact availability of other user information
* Learning content shall be stored in such a way on the system that updates to the content do not negatively impact performance or availability for the client’s side.
* Appointment availability shall be displayed to the user in such a way that the web page does not need to be refreshed for the available times to be updated.

#### 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 shall require a case sensitive username and password, checked against the database for a match, for the user to log in.
* The client and server shall transmit data between one another using HTTPS protocol.
* After 5 incorrect password entries within 30 minutes, the user information under that username used in those attempts shall be locked for 24 hours, or until opened by an administrator.
* Should a user forget their password, they shall be able to call DriverPass’s support line to reset the password. Alternatively, the user may click a link titled “Forget your password?” on the login screen and have a password reset link be sent to an email address that corresponds to the one in their user information.

### 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 provide content appropriate for the selected service tier to the customer.
* The system shall inform drivers when a customer schedules an appointment with them via email.
* The system shall email administrators when the DMV posts an update.
* The system shall display online test progress to the user upon logging in.
* The system shall allow administrators to view and print activity reports.
* The system shall allow users to edit and view their own information.
* The system shall allow customers to write up special needs with their appointments and allow drivers to view this information.
* The system shall display to customers a photo of the driver they have scheduled an appointment with.

### 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.)?*

* Users will interact with the system via their web browser to display different pages of content
* Customers upon logging in will see a page with blocks of information, roughly cut into quarters
  + The top of the page will display the DriverPass logo
  + The top-left quadrant will display the user’s progress in online tests, showing the statuses of either not taken, in progress, failed, or passed.
  + The top-right quadrant will display user information (first name, last name, address, city, state, ZIP code, phone number, email address, etc.)
  + The bottom-left quadrant would display driver notes, such as appointment times or feedback given to the user by the driver from previous appointments.
  + The bottom-right quadrant is further broken down into three compartments: the top half, bottom-left, and bottom-right quadrants
    - The top half will display the customer’s special needs for their appointment
    - The bottom-left will display a photo of the driver
    - The bottom-right will display a photo of the customer
* A “Contact Us” page will be present, displaying DriverPass’s phone number and email

### 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?*

* Users have access to a web browser and an internet connection
* Internet is available 24/7 for the server to communicate with clients
* Amazon Web Services was arbitrarily chosen as the server host. Cost should be investigated to see if it is the best fit for the system.

### 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 will stop functioning if the server host loses electricity.
* The system does not have text-to-speech or speech-to-text functions for the visually impaired.
* The system will stop functioning if it loses its connection to the user database.
* The system will be uncontrollable if all administrator accounts get locked out simultaneously.

### 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 screenshot of a computer

Description automatically generated with medium confidence