# 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 the project is to create a system to make driver education and training better to reduce the failure rate of new drivers on their driving test. The client is DriverPass, which was started for the same purpose that the project is looking to accomplish, specifically we are working with Liam who owns DriverPass, and the IT officer Ian. They want the system to be able to be accessed from anywhere, allow users to take online classes, and take practice tests, as well as allow users to reserve and schedule in car driving practice sessions.

### 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 wants a system that will allow them to offer driver training to new drivers to help improve the passing rates of new drivers on DMV tests. The system should allow:
* Customer accounts should be able to access driver training materials, take practice tests, and schedule driving training appointments. Customers should also be able to update their package choices.
* An administrator account will be able to add or remove users of any level, as well as modify the offerings on the site. It should also be able to download system reports for offline work. This account should also be able to reset user passwords.
* A secretary account will be needed to allow the receptionist to schedule, cancel or modify a customers scheduled training or package. This should include the creation of customer accounts, and modification of customer information in those accounts, such as billing and contact information.
* Driver’s will need accounts to know when they have scheduled driving lessons, and who they are with.

### 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 Objectives of the DriverPass system are:
  + Make scheduling driving lessons easy and accessible
  + Provide access to driving training material
  + Keep track of driver schedules as well as the cars used for the system
  + Provide information about user status
* The DriverPass system goals are:
  + Allow students and secretary to schedule driving lessons with drivers
  + Allow drivers to check their schedules to know what lessons they have.
  + System should be always accessible from any device with internet access
  + Should allow administrators to download reports for offline work.
  + The system should track who makes changes in the system, for example who makes, cancels or changes a reservation for a driving lesson should be tracked.
  + Administrators should be able to create or remove any account.
  + Secretary should be able to make student driver accounts on their behalf.
  + Student drivers should be able to make their own accounts.
  + Student drivers should be able to purchase and modify their learning packages.
  + Student drivers should have access to training materials and tests based on their purchased package.
  + Allow administrators access to update the study materials based on changes to DMV resources.

## 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 will be web-based requiring internet access to use.
* The system will need to be light weight, we would not any page taking longer than 5 seconds to load, even on non broadband connections.
* Site should be responsive, ideal latency should be kept under 200 milliseconds.
* The different parts of the system will need to be updated at different times:
  + The scheduling system and user accounts will need to update in real time as changes are made.
  + The training content needs to be updated when the DMV releases new requirements.
  + Tests should update in real time as they are taken, and grade in real time to provide customers instant feedback.

#### 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?*

* As a web based system it should be designed to run on the major web browsers, Chrome, Safari, Edge, and Firefox.
* The system should be optimized to run on both full browsers and mobile browsers, it should detect browser type before loading content to make sure it is smooth.
* The system will need to operate on a cloud based system running windows architecture.
* They system will need at least four databases:
  + A user database to track customer accounts, driver accounts, the secretary account, and the administrator accounts.
  + There will need to be a content database, for training material and tests.
  + A scheduling database, this will track who is scheduled with which driver at what times. As well as correlate which driver is assigned to which car.
  + A database of what packages are available for purchase.
* The system will need a back end connection to a payment processor, for any payments being made directly by the customer, or over the phone through the secretary.

#### 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?*

* The DriverPass system will need to have roles setup to structure what access a user can have.
* There will need to be four roles:
  + Administrator
  + Secretary
  + Driver
  + Student
* Accounts will need to be secured with a username and password.
  + Usernames should be unique, once one is taken there cannot be a duplicate.
  + Passwords should be case sensitive and have requirements. Password requirements should be at least 8 characters long, with at least one uppercase letter, one lower case letter, a number, and a special character.
* The system should automatically notify the administrator if any aspect stops responding for more than 5 minutes.
* There should be a bug report feature for users to report no working aspects of the system to the administrator as needed.

#### 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?*

* The system should allow the ability to create, remove or modify users without the need to modify the site code, users should not be hard coded into the system.
  + Customer users should be able to change information on their own account.
  + Secretary accounts should be able to create, remove, or modify any customer accounts. But cannot create or modify any other account type.
  + Administrators can create, modify, or remove any account type.
  + Driver accounts can only modify themselves, they cannot create, remove, or modify any other accounts.
* Since the cloud based system will run on windows architecture, it should not be set to perform automatic updates.
* Once a week IT admin should manually perform updates to the background system to assure security and that the system still functions following the update.
* Administrator accounts will need to have access to create/remove/modify any account type, they should have access to modify all databases as needed, the administrator will also need access to download status information for content and users to be able to run reports,

#### 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?*

* In order to login the customer must have a registered username and a password.
* The website should use HTTPS in order to form a secure connection to the server.
* There should be only 10 attempts to access the page before the username is locked, once a username is locked the customer must contact DriverPass by phone to have their profile unlocked.
* There will be two methods of resetting a user’s password, the user can click a forgot password link on the login page that will send a password reset link to the email on file in their customer profile, or they can call DriverPass from the number they registered with DriverPass, authenticate that they are who they say they are then the Administrator can reset their password.

### 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 determine user by validating username and password credentials at login.
* The system shall only provide users access based on their role.
* The system shall allow Students to register for a service package, schedule driving lessons, view scheduled lessons, cancel lessons, and access training materials.
* They System shall allow Secretary users, to register student users, schedule driving lessons, change driving lessons, view current lessons scheduled, and cancel lessons.
* The system shall allow administrator users to create users, remove users, reset user passwords, see/download activity reports for who schedules/changes/deletes driving lessons, see/download student progress reports.
* The system shall allow the Administrator to be able to disable or enable a package if it is no longer available or becomes available.
* The system shall alert the Administrator if the DMV updates their rules, policies, or sample questions.
* The system shall allow Driver users to see their scheduled appointments.

### 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 user interface needs to have a section for test progress(ongoing, not attempted, and completed), a section for student personal information (first name, last name, address, email, phone number etc.), a section for driver notes to the student( should include lesson time, start hour, end hour, and comments sections), an area for any particular needs a student may have, a section for the driver’s photo, a section for a photo of the student, and the DriverPass logo should be at the top of the page.
* The Student user should have access to all sections of the user interface as they need to be able to access their tests, information from drivers on how to improve, they need to be able to fill out or modify personal information or their special needs, they need to be able to see who their driver is and to be able to add their photo.
* The Secretary user only needs access to the students personal information to register the user, or modify the information as requested by a customer.
* The driver needs access to the driver notes section in order to fill it out, they need access to the special needs section to fulfill needs of the student, as well as the student photo section to make sure they are picking up the correct student.
* The administrator needs access to all sections, and to be able to access the information of driver notes and online test progress for all drivers and students.

### 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?*

* All users are going to have internet access.
* Students will access the system using both mobile and traditional computer devices.
* Drivers will likely be accessing the system via mobile devices from vehicles (not while driving for safety).
* Secretary user will only access the system from the DriverPass offices.
* The system will be cloud based to prevent loss of service.
* The system will be accessible 24/7 with minimal downtime.
* Students will have a permanent address, an active phone number, and an email address.
* Students will have received a learners permit before scheduled in car driver lessons.
* Drivers will be legally allowed to drive and will have passed their driver’s tests.
* There is an API or notification system to know when the DMV updates their rules.

### 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 does not work offline.
* Changes can only be made to the things in the system online(no offline data changes).
* The system must run on a cloud based windows environment.
* The system will need to be brought down for maintenance.
* At launch changing or adding new packages will require a developer.
* The system will be ready for testing no later than April 27th.
* The system will be delivered no later than May 9th.

### 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.*

