# 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 one of our clients, DriverPass. The purpose is to provide online training and test preparation, as well as on the road instruction (as requested) to help users in passing the DMV exams to get their driver’s license. The system will be able to handle both user side interactions like demographics entry and update, making and modifying reservations for on the road instruction, accessing and tracking online learning, and secure data entry and management for credit card information. On the client side the system will provide access to management to employees, scheduling management for trainers/instructors and the client’s vehicles, reporting on users online progress and on the road instruction, as well as the ability to enable and disable the different packages available to maintain work flows.

### 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?*

* The client has requested that the system data be accessible from a anywhere anytime, both online and offline. (Offline accessed data would be read only to prevent data redundancy)
* The system will be virtual, on the internet, accessible through both mobile devices and laptop or desktop computers.
* The system should be cloud based, to minimize security and data backup concerns or technical problems.
* The system will provide access to online instruction, reservations and scheduling, password recovery, and billing services to the end users/customers.
* The system will provide the client/owner with data tracking, report generation, schedule generation with pickup and drop-off times and locations.
* The system will be accessible both from the internet by the client and end users, as well as in an office setting by the client and their employees.

### 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 end users/ customers with the following functions:
  + - * A client dashboard that displays demographics, reservations, etc.
      * Online signup and registration
      * Online scheduling for on the road instruction, including time pick up and drop off locations
      * Modification or cancellation of existing reservations
      * Access to online instruction and test preparation
      * Forgotten password reset
  + The system will provide the client/ employees with the following functions:
    - * User information management
      * User credit card information management
      * Automatic credit card payment processing for user selected services
      * Schedule tracking and generation for cars, trainers, times, and locations
      * Report generation for reservations tracking origination, modification, cancellation of reservations
      * Different access rights for employees in different roles in the client’s company
      * Report generation about individual users, including tracking progress of online instruction and test preparations
      * Report generation about on the road instruction, including times, trainer/driving instructor, and the trainer/instructor’s notes and observations.
      * Password reset services for client’s employees
      * Usable data reporting with the output being exported in various common formats like Excel
      * The ability to activate or deactivate the different packages, to control work flows as needed
      * An interface and integration with theDMV, to keep course content current and up to date on any changes.
      * A dashboard that shows demographics, online test progress, trainer/instructor notes, special need, trainer/instructor photo and student photo.

## 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 user wants to be able to access the system data anywhere, anytime, as well as online and offline.
  + Offliine data will be read only to prevent data corruption or redundancy.

#### 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 system will be cloud based.
  + The central database will be updated frequently when data is accessed and manipulated. (<10 seconds, if that is a reasonable time frame)
  + The system must perform comparably on mobile devices or desktop devices.
  + The system must have the capability to generate and download the required report files.
    - The report files must be compatible with Excel.

#### 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 will be Windows based.
* The system will require database support for the user data.
* The system will require database support for the online learning and testing modules.
* The system will need a secure payments processing portal.
* The system will need a secure way to transfer funds from the online transactions to the business bank account, regularly and automatically. (Every 30 minutes, as appropriate)

#### 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 system will require every user to login with a password to access the system for ay reason.
* The system will use unique login and password to distinguish different users.
* The login and password should be case sensitive.
* The system should inform an admin when a new user creates a new account.
* The system should inform the admin when a user forgets their password, and goes through the automatic password rest process.
* The system should inform the admin when a login has more than 4 incorrect passwords in any single attempt to login.
* The system will update the database contents every 10 seconds or less (what every reasonable value should be inserted here).
* The system should update the admin when content from the DMV has published updates.

#### 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 user requires the ability to enable or disable different instructional packages, to control customer flow.
* A developer will be required to add, edit, or remove the different instructional packages in the future.
* The system needs to be connected to the DMV to receive the annual updates to laws, rules, policies, and sample questions.
* The Owner and IT admin need full rights to system for adding and removing employee access.
* The Owner and IT admin need the ability to reset passwords for employees if they forget them.

#### 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 will require a new user to set up a unique login and password for their account.
* The unique user account will also hold credit card details for payments securely.
* The system will require each user to login with their credentials each time the system is accessed.
* Any secure data transmitted by the system from user to server will be encrypted, using standard and correct encryption software.
* If a ‘brute force’ attack is detected, an appropriate protection procedure should automatically be implemented, and the admin and Owner should be notified immediately.
* The system will have a method for non-employee users to reset their passwords automatically.
* The security package will be provided, maintained, and updated by the system vendor, not the user.
* Data backup and maintenance will be performed by the vendor company.
* All changes to data will be logged, with date time and user who made changes to the data.

### 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 validate each users credentials when they log in.
* The system shall check and enforce the rights of each user when they log in.
  + The Owner and IT admin will have the greatest access and most extensive rights to change or reset data/passwords than regular employees, who will have different access rights than the end users (customers) who will only have access to to their own data.
  + The system shall track end users progress in online training modules.
  + The system will track the number of hours end user’s have logged on the raid with a trainer.
  + The system will have features that allow end users to make, modify, and cancel reservations for on the road training which will include such data as:
    - Time and date of reservation
    - Instructor preference.
    - Vehicle preference
    - Pickup and drop off location.
  + The system will generate schedules that include :
    - Instructor
    - Car ID
    - Time
    - Date
    - End User Name
    - Pickup/Drop off location
  + The system shall contain the data about the three current packages:
    - **Package One**: Six Hours in a car with an instructor.
    - **Package Two**: Eight hours in a car with a trainer and an in-person lesson where DMV rules and policies are explained.
    - **Package Three**: Twelve hours in a car with a trainer, and in-person lesson where DMV rules and policies are explained, and access to the online class with all the content and material, including practice tests.
  + The end user’s registration information will be entered by office staff and will consist of:
    - First name, last name, phone number, state, credit card number, expiration date and security code.
    - The end user data will also contain the pickup and drop off locations.
  + The system shall generate a user login and password which will be sent to the end user, so they can make, modify, and cancel 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 initial user interface will be a login page, identifying the company and requesting login and password credentials.
* The initial login page should contain links for an employee login page, a user password reset link, a link to contact information and/or fillable form, and a links to information pages about the packages, company story
* The company user interface will be based on a drawing provided by the Owner.
* The company user interface should include the company logo in the top center position.
* The company user interface will have a, ‘Online Test Progress’ box in the upper left position, under the logo.
  + This box will contain online test progress what tests are completed, and what is in progress.
    - Each entry should contain information like test name, time and date taken, score, and status.
* The company user interface will have a demographic information box in the upper right position.
  + This box will contain data like: first and last name, address, city, state zip code, phone number, email address, etc.
  + The company user interface will have on the right side, in the lower section will be a box that contains any information about an individuals special needs.
  + The company user interface will have on the lower middle left side will be a box that contains data about driver notes.
    - The entries will include scheduled start time, actual start and end time, and any notes left by the drivers or trainers about the session.
* The company user interface will have on the bottom right side of the page will be a picture of the driver/trainer and a picture of the student.
* There will also be a separate end user interface to edit demographic data, and will be accessible to either company employees or the students themselves.
* There will also be a fillable form to contact the company, which will generate an email message to the company.
* The company user interface will have the ability to contact students.
* Possible methods for student contact may include email (either individual, through distribution lists, or mass emails), a package or 3rd party texting system, phone calls (either automated for mass communication or single in person calls), or by regular mail, depending on circumstance and necessity.

### 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 the whole system will be web/cloud based and web accessible.
* The vendor will provide appropriate security, data storage, and payment processing packages.
* It is assumed that the company’s clients are reasonably computer savvy and can login and navigate the system pages without the need for extensive instructions or training.
* It is assumed that local conditions do not impede the constant and consistent delivery of utilities like electricity, internet serve, WIFI, and cellular/mobile data services.
* It is assumed that the end users are reasonably proficient in reading, writing, and understanding the English language.
* That the end users will have access to the internet, either through an ISP or via a cellular or mobile network, while trying to access the system.
* That the system will work equally well on all devices, regardless of operating system or type- computer, tablet, smart phone, etc…
* Access to the system will be completely revoked when an employee leaves the company.
* Access to the system for the end users will be regulated by company policy and any applicable laws.

### 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?*

* Without electricity, internet service, or remote cloud services, the system will not function or be accessible.
* Sudden severe weather could effect scheduling, causing appointments to back up.
* Significant vehicle malfunctions could cause significant problems in providing the services that are being paid for. ( e.x. What if all the cars are parked in the same lot, and they all get flood damaged..)
* Integrating existing packages for security, data backup, data storage and payment processing may cause issues in the future since they are off the shelf instead of engineered for the particular use the rare being put to.
* Access to the system via cellular data may be limited by availability of signal or coverage.
* At this time the system will be utilized by several dozen people at a time, if the system use becomes more widespread to thousands of users simultaneously, the web hosted cloud based system approach may need to be rethought.

### 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.*

