# 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 client is DriverPass and they want to develop a new system to fill a gap in the market relating to training students for a drivers test.
* Need online training classes and the ability to give students on the road training.
* We need to build a system to accommodate this type of training.
* Needs online and offline access to personal data, download reports for offline use, ability to access online data from any computer.
* Need different account types to allow for different permissions and roles. Need at least 4 different account types (owner, IT manager, secretary, and customer).
* Need to track changes made to reservations and be able to print activity reports for specific customers so we can see where the system failed and how it happened.
* Reservations are for driving lessons. Customers need to be able to schedule reservations for a specific day and time. Need to be able to create reservations online by the customer, or over the phone or in person.
* Need to assign a driver and car with these reservations to keep track of the different vehicles and drivers.
* Three different packages:
  + Package 1: 6 hours in car w/ trainer
  + Package 2: 8 hours in car w/ trainer. Plus in person lesson with DMV rules and policies
  + Package 3: 12 hours in car w/ trainer. Plus in person lesson. Plus online class with practice tests and review of in person content.
* Currently each class is 2 hours so the schedule needs to keep track of how many hours each customer has already scheduled. In the future they want more flexibility and so we need to design the system with more customization options available in the future. FLEXIBLE
* Need the ability to enable and disable each of the three packages.
* Registration done in person or over the phone
* Scheduling can be done online, user needs to be able to maintain their own account.
* Need a way to update the online tests, DMV will provide updated tests as laws and regulations change, need a way to add and remove practice tests from the DB
* Web based service, need automated backups and security checks. System needs to run with minimal interaction. More of a plug and play solution than create a solution that the user needs to setup and constantly manage.
* Dashboard needs to have Online testing progress, drivers notes, personal info, special accommodations, driver photo, and user photo.

### 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 system will act as a way for scheduling driving lessons to be made and managed online. The system will also allow users to take practice tests and get support online.
* The problem that is being addressed is a gap in the market for online practice testing, as well as create an easy way for students to get access to driving education before going to the DMV to take a written and driving test.
* Components of the system
  + Account creation and management
  + Payment processing
  + Online testing
  + Online scheduling
  + Over the phone and in person scheduling
  + Assigning drivers and vehicles to students
  + Appointment modifications and management
  + Ability to access information offline for use at home or when on the road with a student.
  + Database of user information, practice tests, and study materials.

### 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?*

* Scheduling requirements
  + Create new appointments
  + Modify existing appointments
  + Assign drivers and vehicles to appointments
* Account requirements
  + Store sensitive payment information
  + Modify account data
  + User resettable passwords
  + Track a students progress throughout the course
  + Different types of accounts for Employees and students, different levels of employee accounts depending on their role in the company
  + Access a full history of an accounts appointments and changes to their appointments in order to provide support for when an appointment is modified and to be able to audit employees that made errors when scheduling students.
* Website requirements
  + Account dashboard that shows all relevant student information
  + Contact us page
  + Way to contact the student
  + Drivers need to be able to upload session recaps
  + Online testing platform
  + Personal information and a way to update their personal info.
  + Payment processing
* DB requirements
  + Storage for user information
  + Storage for practice tests and education materials
  + Automated backups/data redundancy
  + Security audits to ensure there are no security breaches

## 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?*

* Needs to run on browsers for different OS’ (web based)
* Needs to run on mobile (web based, or application)
* Data in the system needs to be updated live, whenever data is uploaded DB is updated
* System should be snappy on desktop browsers, pre-load assets when possible.
* System can be less responsive on mobile, but anything stored locally should be loaded in 1 second or less.
* Updates will be rolled out weekly at first while there is still a lot of development to be done and after that monthly bug fixes and security updates.

#### 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 front end will be browser based and must support browsers on all desktop OS’
* Back end will have a DB to support the application and that will be running a Linux environment.
* Front end will also need to be optimized for mobile or have a mobile application so that people can access all data on their phone.

#### 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?*

* All users will login with their email so that there is no confusion between two separate people with the same name or similar names.
* Names will not be case sensitive, but every word in a name will be auto capitalized.
* The system will inform admins when there is any scheduling error
* The system will generate a report whenever a user triggers an error code, admins will be notified depending on priority of error code.

#### 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?*

* There will be no changes to the code made when users are added, modified, or removed. That will all be built into the website.
* The system will perform updates overnight with a warning displayed at the top of the webpage or application on the days of updates.
* IT admins will need a special account type, this will give them access to the database, error reports, and some source code.

#### 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?*

* For the user to login they are going to need their email and password, if it is a new device we will use email 2FA to verify that user
* To secure the connection between the client and the server we will use HTTPS for most communications and use a more advanced encryption method for storing data in the database as well as user logins and payment information
* If there is a brute force hacking attempt then the requests will be blocked. There will be a limit on the number of requests a user can submit every minute in order to block any data scraping as well as brute force attempts.
* If a user forgets their password they will be able to request a reset link be sent to their email in order to change 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 validate user credentials when logging in.
* The system shall update the DB whenever data is pushed to it.
* The system shall allow drivers to view their schedules and student information.
* The system shall provide a method for users to update their credentials.
* The system shall generate an error report every time an error is encountered.
* The system shall allow users to access educational material online.

### 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.)?*

* There are five types of users, owner/manager, IT, employee, teacher, and student.
* The owner needs to be able to do everything.
* The IT will need special access to the database, error reporting, and some source code plus everything that the employee needs.
* The employee will need access to all scheduling and driver/student assignments. As well as have the ability to modify schedules and assignments. Also, will need to be able to complete purchases.
* The teacher will need to be able to view their schedule as well as update the students information with notes about their sessions and how they did.
* The student will have the most basic level of account. They will only be able to schedule themselves, see their progress report, view online material, and change their personal 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?*

* The users are on windows 10 or newer
* The users are on MAC OS Big Sur or newer
* The users are on IOS 14 or newer
* The users are on android 11 or newer
* There will not be two accounts with the same email address
* The users all have an email address

### 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?*

* A mobile app is going to be time limited, so if we go with a web based mobile solution then downloading files is going to be difficult for many users.
* The web-based environment makes it difficult to keep downloaded files updated automatically.
* The system will not be able to operate fully without an internet connection.

### 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.*

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