# 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?*

* Out client, Driver pass, wants to provide a service for individuals who are getting ready to take their drivers test. They want to platform that will allow their users to participate in online classes and take practice tests focused on driving.
* If need be the company will also provide their users with on the road training in order to prep them for their exam.
* Certain roles within the company will need to have access to all accounts. This  is necessary in case any given user forgets their password. By someone within the company having access to these accounts resetting them will be simple.
* The reservations/cancellations should also appear in an activity report.   The user will also have an option to select a specific day/time they wish to set up an appointment to practice their driving skills. If they do not wish to do so online they can call the companies secretary and set it up over the phone. They also want to track what customer goes to what car at what time and who the driving instructor is.

### 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 owner of driver pass states that many people fail their driving exams and that there is a need for better driving trainings The companies goal is to help people pass these exams and they will do this by offering multiple services catered around driving effectively. This is the problem they are trying to solve and they are aiming to do so within a relatively niche market.
* They will offer online classes and even in-person training. By offering these classes focused specifically on driving they hope to help their customers pass their driving exams.
* They will have driver instructors set up for people who opt to do in-person lessons.

### 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 client, driver pass wants their system to allow users to set up reservations to practice their driving. The user should be able to pick what time and day they want this to take place. If the user does not wish to do this online they can call up the companies secretary and have her set up the appointment.
* The IT team needs to have access to all accounts in case a customer forgets their password. This way resetting the password can be done easily. They also an activity report that lists what users make an appointment, cancel an appointment and so on.
* Since the company has many cars/driving instructors they want to be able to track each driver/driver instructor as well as what time and day the appointment is set up for.
* The company offers 3 different packages that offer 6,8 or 12 hours with a trainer.
* A new customer must input their first name, last name, address, phone number, state, and their credit card number, expiration date, and security code.
* The system must run over the cloud as the company does not want to deal with the overhead of inhouse severs.

## 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 Driver pass system will be web based and will run on the cloud. This will allow the company to not have to worry about physical servers, routers, switches etc. By using the cloud they can quickly and efficiently scale up/down their services if need be.
* The cloud offers affordability and less overhead for a company that is just starting up. Driver pass will be using Microsoft azure for their cloud needs.
* Some of the benefits of using a cloud based service have already been listed but let’s look at a specific example. During the summer it’s very common for teen drivers to hone their driving skills in order to prepare for their drivers test. Due to so many individuals wanting to get prepared for their road test Driver pass might have a large influx of new users to their system. They can quickly contact the Microsoft azure centers and request to scale up. Then when the summer has ended and web traffic slows down they can just as quickly scale down.
* The system should allow the user to quickly reach the log in page. For example, If I was to visit the mySnhu login page it takes about 1/2-1 second for the login page to display. Then when the login in information has been displayed it takes about 3 seconds for my personal SNHU page to display. The speed of the Driver pass system should take roughly the same amount of time.
* Once a user is logged in they should quickly be promoted to their home page in roughly 3-5 seconds. Since our main demographic is younger inexperienced drivers we want to deliver our web services quite fast. This Is because these young customers are used to fast connections.

#### 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?*

* We will be using Microsoft azure servers which rely on mostly on a Linux based platform(Raymone,2019, How Linux took over everything, including Microsoft Azure)
* Servers running on the Linux platform are renowned for their quick updates/speeds as well as their reliability. There will be a few databases needed for this system to function properly. A database containing the user and password for all accounts will be kept to check a users log in attempt for correctness. Another data base will keep a log of all driver/driving reservations/cancellations per the owners request.

#### 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 have an input form that both the student and secretary can access when a student is first signing up. In this form there will be user information such as first name, last name, address etc. There should also be a spot to input the users email address. This email address will be used when the student creates their “student” account. Every user on the platform will have a separate username. The password will be created by the user and logged onto the loginCredentials database which contains username-password key value pairs. The username and password input parameters are case sensitive.
* The system will have many accounts but they will be grouped into different categories. The system has to distinguish between them. Each that will have their own separate features and accessibility. The lowest level of accessibility will be given to a driver pass student account. They will only have access to their own information. There will be one account that has access to everything, this account will be designated for the CEO/owner of Driver pass.
* There will also be an administrator account. This account has access to the database that contains the students log in information. This is to deal with scenarios like a student forgetting their password. The administrator will reset passwords.
* There will be a “forgot password” link on the login page. When clicked it will ask the user for their email address. The email address will be checked to make sure it exists within the data base. If it does an email will be sent allowing the user to access the website with a one time link. They will also be asked to create a new password.
* This information will be relayed to the administrator who has access to the database. He/she will then update the database with the proper username password combination for the user who just reset their password. So now if the user attempts to log in once again they will have no issues. The database will contain the now updated username-password key value pair.
* There will also be a separate account for the secretary. This is because students have two options when signing up. They can fill up the form themselves online or they can contact the secretary and have her take in the information for a new account. The student will then receive an email to the account they gave to the secretary to create their password. The secretary can also set up driving reservations on a students behalf.

#### 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?*

* When a user no longer needs our service their information will be discarded. This will free up some space in the database for the system. Since the system is linked to the database any changes made will be noted. We can add/drop/modify users on the table that the database will store. So the IT team/administrators will need access to these databases. They do not have to touch any code that is already set up and running on the server. They will however need access to the databases to access, update, print, delete data.
* Since the system is running on Microsoft azure it will be updated whenever Microsoft plans an update. As previously stated servers running on a Linux platform can still run while the update is happening. This is very flexible as it allows for almost constant access to The driver pass website.

#### 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 user will input their email account and the password created for this website in order to login into their account. For the users safety we will ask them to create a password that has a combination of capital letters, lowercase letters as well as digits 0-9. This leaves the user with a possibility of 62 characters to choose from. The password will be 10 characters long so overall this leads to about over a quadrillion possibilities.
* We can request to use HTTPS to transfer data back and forth between the user and the server.HTTPS is secure and uses port 443 unlike HTTP which uses port 80. Many web services are shifting from HTTP to HTTPS. Almost everything remains the same except with HTTPS data is encrypted and can only be decrypted by the machine it is communicating with. This will ensure security and safety when data is being exchanged between the devices.
* As noted before, the password needed for a user to login to their account will consist of 10 characters. The pool of characters to choose from will be the 26 capital letters, 26 lowercase letters as well as digits 0-9. Leaving an enormous amount of possible combinations. This password will not cracked using brute force, there are to many possible combinations. A brute force algorithm will require multiple loops and the time needed to crack this password is astronomical. Due to this wide array of possible combinations a user can feel secure when they use our services.

### 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 take in user input and log in a user based on their username and password. Based on this information it will determine whether the account is either a student, administrator, secretary or CEO account and proceed with the login steps.
* The system shall allow the administrator access to the database to update passwords and solve other issues
* The system shall give a customer the option to choose from 3 different driving packages
* The system shall allow a user to set up, cancel or change the date for a driving lesson reservation.
* The system shall record all driving reservations, cancellations and allow the CEO of the company to access these records.
* The system shall allow students to take online practice exams related to driving.

### 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.)?*

* From the students perspective the interface will need to display the companies logo at the top of the screen
* The left hand side of the website will display the students test progress
* Below this will be the students driving notes
* The right hand side will display the students information to them. Such as name, address phone number etc.
* Below the students information will be a section for special needs
* And below this will be the a picture of the student and their driver
* The interface needs to show the driver their test scores and overall test progress
* The CEO, secretary and administrator will deal with different looking user interfaces as they all have more accessibility to the overall system. Because of this they can access data that the student cannot.
* The user can access this U.I through a browser. They can do this sitting at home or on their mobile.

### 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 student has paid for their services.
* The student has access to the internet in order to take practice exams
* Microsoft azure is running properly
* The student has a valid working email
* These assumptions will assume that the student has paid for their services and is a member of the driver pass system. It is also assumed that the student has a valid email.

### 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 not automatically set up reservations for the student. This is up to the student to either do on the system or to contact the secretary to do so.
* The system cannot finish a users test
* The system will be down if the servers at Microsoft azure are not properly working
* The company creating the driver pass does not have the freedom to create a user interface of their choosing. The companies CEO has a sketch of what he would like the system to look like.

### 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.*

[Insert chart]

