# 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
* The purpose of the project is to provide students with tools such as on the road training and online practice tests. These tools will help them be more successful during their real test.
* The client wants the program to do the following things. Allow driver notes from training sessions, display student information, allow practice exams, include online classes and allow scheduling for on the road practice.

### 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 the system to aid students in both the test taking aspect as well as the on the road training aspect that takes place when getting a licence. They want the students to have a large success rate of getting their licence after taking this program.
* The problem DriverPass is trying to fix is there are too many students failing their drivers test, they want this program to help the students pass.
* Components needed are student login information, student progress bar, DMV information, scheduling and driver notes.

### 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 needs to prepare the students for both the written exam as well as the driving portion for their licence.
* A measurable task for success towards the end goal would be the combination of a progress bar. The progress bar could contain reading material and at the end have the student take practice quizzes to test knowledge for each section. On the road training will be another measure of success combined with teacher feedback. The teacher may leave notes in the system such as things the student driver needs to work on. When a new appointment is created the new teacher may view these notes and help the student where they are lacking. Once the student is proficient in the physical driving aspect they can complete that portion of the progress bar in the system. When both aspects Driving and Testing have been completed the program is complete and the student can set up an appointment with their local DMV to take their drivers test.

## 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 environments the system should be able to run need to be current popular environments, this includes cell phones, IOS, Android and computer web browsers. Having the system available to multiple popular systems maximizes the customer base.
* The system or program needs to be fast enough to work on the slower hardware, this means cell phones. I would like to program to run on cellphones at least 3-4 generations back as not everyone buys a new phone every year.
* System should be updated during reported software bug fixes, updates to driving regulations ,new security upgrades, updates to the user interface,.

#### 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?*

* I am only interested in android, IOS and https web browsers. The idea is most people these days have cell phones ,therefore apps will be made for the Google play store and the Apple app store. This will cover a large group of people. Instead of writing individual programs for Windows, Linux etc a web browser will achieve the same outcome and will work on multiple operating systems.

#### 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?*

* In order to distinguish between different users, new users will need to set up an account. In order to create an account you will need to input a case-sensitive username and password. An email will also need to be provided in case the password or username is forgotten. Once the program verifies the email address the user profile is created. The admin will be reported of a potential problem if the password is consistently wrong. To protect the user an email will be sent to the provided email address and after clicking on the link a new password will be created.

#### 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?*

* Making changes to the users such as adding, removing or modifying shouldn't require any code. These types of actions will be quite regular and we don't want to update the system every time a change is made. Once the base program is created with all of the functionality, a separate program will be made to interact with the data from that program. For instance a IT admin would be able to view and update the user database, the changes will save to the original program thus not requiring any code. You just need extra code for the admin functionality but that should be it. Platform updates will probably require the changing of code as we are changing the fundamental system. This means updating the Google play store, Apple app store and web browser preferably around the same time. The web browser may need to be taken offline temporarily for updates. The IT admin needs the access to the separate program which allows the viewing editing and saving of changes to the core program.

#### 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 start a new account a user will need to provide a case-sensitive username and password. The user will also need to provide an email, this is for alerts such as suspicious activity or a password reset. In order to prevent a brute force attack there will be a limit on the number of failed attempts. Once that limit has been reached the account will be locked and the only way to unlock it is to sign on to the provided email and reset the password. Once the password has been reset the account will become active again. If the user forgets their password they just have to click on a link provided that says "I forgot my password", they will then be directed to their email to click on a link to reset the password. VPN's provide safe data exchange as they encrypt data to be sent. I would suggest using a VPN for further increase security for the customers.

### 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 the users credentials when logging in
* The system shall allow a password reset
* The system shall record the number of attempts of login and lock the account after so many tries
* The system shall allow show user progress between reading test taking and driving experience
* The system shall allow the user to view notes taken from different instructors on things to improve for the driving portion
* The system shall show updates with new laws or regulations
* The system shall display user information and allow a photo to be uploaded
* The system shall allow easy admin modifications to users through a separate program

### 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.)?*

* On any operating system that utilizes a computer Mac, Windows, or Linux the user will use the mouse and keyboard
* For mobile devices such as Iphones and Android phones, users will navigate the interface through touch controls. If the user needs to input information the program will interact with the phone's keyboard.
* The driver interface will include the following features
* a progress bar of study or reading material
* a progress bar of tests and quizzes
* a progress bar of on the road driving, included are notes from the instructor
* a student photo
* photos of the driving instructors included in notes

### 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?*

* I would assume the user knows how to navigate their operating system weather they would be on a phone or a computer.

### 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 program needs to be consistent through all platforms, I will have to develop for the best case scenario with the lowest power which would be the cell phone. I chose to optimize for cell phone several generations back because not everyone has the current device. It may be difficult for the team to optimize on older hardware as research may need to be done, this may impact the time and budget. The plus is optimizing on less powerful hardware means anything above will be fine. I noticed I didn't create a user interface editor, this may be a good idea. If there are small changes to the UI like a new message, we could make changes to the program without an update. Much like I created an editor for the administrator on user profiles, this UI editor will keep coding to a minimum. In creating many editors this could increase the amount of bugs found which could increase the budget. Multiple editors will also create an initial upfront development cost but the return on investment over time should prove worth it.

### 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.*



