# CS 255 Business Requirements Document Template

## System Components and Design for DriverPass

### 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. Liam, the owner, has found a weak market and seeks to fill it by introducing a new service that teaches students how to drive.
* They want the service to be able to administer information, practice tests, and in person appointment setup. The service should analyze the results to help the user become a better driver.
* DriverPass should have full control and access to user generated driving reports as well as account securities.
* DriverPass does not want to be responsible for server maintenance and internal system security.
* DriverPass has 3 different tiered ideas for packages that the user has the option to buy.

### 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 to supply students and new drivers with information that will help them become better drivers and pass their driving exams.
* Many students fail their driving test the first time, and providing helpful information and in-person lessons would allow students to learn how to drive better and give them a better chance at passing their drivers test.
* The system will need to
  + maintain account accessibility
  + supply information
  + administer timed exams
  + handle appointment setup and reservation requests
  + create, analyze, and provide feedback for user generated data
  + Provide access to online users anywhere.

### 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 should be able to allow a user to do the following while connected to the internet: create an account, purchase a package, and access respective functionality. The functionality for each tier is different, and may change, so the main 3 components will be listed here:
  + All packages include an allotted amount of time to make appointments and reservations for in person driving lessons(The main method for the idea). Remaining features can be considered perks for paying more, as they also assist the user in preparing for the driving exam.
  + Driving Information: such as laws, signage, right of way, and other useful information is supplied to the user and organized in a way that’s pleasing to read through or review.
  + Driving exams: online driving tests which recalls the users knowledge of driving and evaluates the responses to provide the user with areas in which they could improve or provide the user with a tag, signifying they would like a teacher who specializes in a certain area of driving with the same tag.
* Some measurable tasks include:
  + Create Use Case Diagrams and build activity diagrams for each use case. This will allow the developers to visualize the flow of the user through the system.
  + Research user-interface designs and build the main class diagram. Which UI would be most compatible with this project, and how will individual components function as part of the whole system hierarchy.
  + Get Customer approval to proceed with development and start building system. From this point, the team will work on building the interface front end and linking the database to it. After main business logic is written the system will be bug tested and ready for deployment.

## 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?*

* Driver Pass needs to run in at least web-based and application environments because of how it is supposed to be used. Mobile use is easier to most young people and most convenient because of phones.
* The system should be smooth and run efficiently providing a pleasant user experience. Transition from menu to menu should be as seamless as possible and reservations should be able to be completed quickly.
* The system should be updated when necessary or when new features should be implemented. The system should also track active and inactive users and maintain disabled or suspicious accounts.

#### 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 should run on a number of platforms in order to maximize the target audience.
* A database containing user profiles is needed to maintain the user base.

#### 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?*

* Users will be able to create a unique profile and profiles will have different types with different functionality. For example, the functionality for a student and a teacher will differ in some areas.
* The system should monitor interaction and inform the admin of problems. There should probably be a dedicated help line that can be contacted should a problem arise, and all contact info for both parties should be available to DriverPass.

#### 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?*

* You should be able to easily add users without changing code. This will make it easier to add new users, but for making different kinds of users or adding functionality the code will need to be modified.
* There should be testing of the platform update before the system is integrated and problems should be solved quickly.
* IT admins may need the ability to modify, add, or disable user account. They may need special functionality for select cases, for which they should communicate to the dev team to find the right tool.

#### 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 requires a password and a username in order to log in.
* Connection security can be done through multiple encryptions methods. Depending on the type of information requested by driver pass they may need a nationally recognized secure encryption transfer process because handling specific personal data incorrectly is illegal.
* If an account exhibits suspicious behavior like a brtue-force hack attempt, the system should flag the account and prevent future logins until the identity/purpose of the user attempting to login can be verified.
* If the user for gets their password, they should be able to easily and securely change it.

### 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 save user's work and progress and make it available for viewing when completeing assignments.
* The system shall provide the correct level of support for the purchased package.
* The system shall track suspicious account activity and flag respective accounts.
* The system shall log the user out when they close the app or page.
* The system shall be able to provide batch reports on large numbers of users.
* The system shall track users during appointments to ensure safety of student and teacher

### 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 should be pleasing and easy to use. When interacting with the user interface it should have a controlled flow and obvious path for the user.
* Users for this interface include Teachers, Students and admins.
* Different users will need different capabilities, students can request an appointment with teachers but teachers shouldn’t be able to advertise their services to specific students. Admins will need the ability to modify and add or disable user accounts.
* The users will interact with the UI via an app on their phone or a web browser connected to the internet.

### 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?*

* They will be able to host or find a web-hosting provider that fits their needs.
* While there are many services that can be used for secure hosting like AWS, they can be costly, and are managed by a 3rd party service, so trouble shooting problems can be more difficult.
* The team is knowledgeable about basic system management and setup
* The team works well together and the employees show good team work.

### 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 cost for a professional high quality, secure, and smooth web site can be substantial. Sites can cost tens of thousands of dollars when looking at 3rd party service offers and the cost of other popular company sites.
* The chosen web software does not allow them to create an accurate display of what the website should look like. The chosen software must meet or exceed designer expectations.
* There will be major setbacks if the chosen software for web development does not achieve the project owners vision and is incapable of doing so. This will come with some serious drawbacks such as reduced user control and non universal usability.

### 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.*

