# CS 255 Business Requirements Document Template

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## 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 purpose of this project is to create a system to educate people for their driving test.
* The client is DriverPass. Liam is the owner of Driver Pass. Ian is the IT Officer at DriverPass. There is also an unnamed secretary and driving instructors.
* For the written part of the driving test, Liam wants the system to allow students to take classes and practice tests online. They also want students to have the option of taking on-the-road driving practice with professional driving instructors.
* DriverPass wants to have a web-based system that allows for booking, rescheduling and cancellation of driving lessons. The system should provide access to learning materials that are available online and offline.

### 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 has noticed that there is a need for more effective driver training. The problem is that many people are failing to pass their driving tests.
* Liam, the owner of DriverPass, feels there is a void in the market for students who want to study for their driving test at the DMV. He wants to fix this by offering both online and on-the-road driving classes in the hope that this will enable more students to pass their driving tests.
* Administration is needed for controlling accounts which includes permissions as to who can access what.
* The ability to take appointments over the phone and catering to walk-in customers need to remain intact and be implemented into the new system.
* A system is needed that allows people to purchase and schedule driving lessons at their convenience.
* Driving instructors need the ability to write and store notes for their students.

### 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 require a database. Security is needed to allow only authorized people access to information in the database.
* The system will receive updates from the DMV whenever the learning materials need to change.
* One of the goals is to offer flexibility to the clients so they can register for courses either online or on-site.
* Students will have accounts which will hold personal data such as their name, address, phone number, email, etc. Other data requirements are online class progress and practice test results, online class instructor comments, on-the-road lesson information and instructor comments.
* Administrators will be able to track changes in the system and who made them.
* All requirements will be able to be tested in programming to show that they function correctly.

## 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?*

* This will be a web-based project that will need to work with all major internet browsers. In that way all features can be accessed via computer or phone.
* The website needs to run on any operating system especially Mac, Windows, and Linux and to be compatible with the most popular browsers at minimum.
* The system should provide response times of less than 30 seconds.
* The system should be updated as needed, including when notified about updates from the DMV.

#### 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 Windows operating system.
* The back end will require at least one database for holding course materials and user information, including profile information, course history and payment information.

#### 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?*

* Each user will have a unique identification number and log in name. In that way users will be easily distinguished by the system.
* Passwords will be case sensitive, but the username does not have to be.
* The system should inform the admin of any problems, glitches, or bugs with the website immediately so that it can be fixed and run normally as quickly as possible.

#### 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 system will allow employees to make modifications to users and allow employees to add or remove users without changing the code.
* All platform updates will be downloaded and installed without issue.
* The IT admin will have full access to the system. IT admin needs to be able to reset accounts if someone forgets their password. IT admin also needs to be able to remove access of former employees. The IT admin does not have access to the source code, the same as any other employee.

#### 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?*

* All users must log in through the website using their username and password.
* A secure connection can be established using SSL encryption. This starts a TLS handshake in which the two sides communicate by exchanging messages as a way of verifying and acknowledging each other.
* If “brute force” hacking is detected the user should be informed by email immediately and advised to change their password.
* There should be a ‘forgot password?’ link available on the log in screen for if a user forgets their password.
* If a user enters an incorrect password more than 7 times, then the account should be locked, and the user should be advised to check their email to reset their password.
* The system will run over the cloud for strong backup and security.

### 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 identify the user from the login credentials.
* The system shall determine the role of a user that has logged in.
* The system shall provide students with the following options: review packages, purchase package, schedule/cancel/modify in-person training, schedule/cancel/modify behind-the-wheel training, view progress/profile, and logout.
* The system shall provide special options based on the package that the student is subscribed to including access to online classes, take practice tests, view online content, and download content for studying offline.
* The system shall provide employees with the following options: add/modify student profile, add/modify admin profile, delete user, reset user password, schedule/cancel/modify in-person appointment, schedule/cancel/modify behind-the-wheel training, print activity report, and disable purchasable packages.
* The system shall email receipts to students immediately after they have made a purchase.
* The system shall show the driver the customer is paired with.
* The system shall notify instructors via email when they have a live session booked for training or behind-the-wheel instruction.
* The system shall validate users attempting to enter any restricted area of the site.
* The system shall show the tests and work the user has already completed.
* The system shall provide technical reports to administration as requested via their UI.
* The system shall run fast and efficiently.

### 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 users will interact with the interface using a browser, whether a mobile browser or computer (desktop/laptop) browser.
* To interact with the interface the user needs a display screen, a mouse or touchpad and a keyboard.
* The UI will consist of buttons or widgets that will link to specific pages. Each page will have the company logo at the top.
* The different users for this interface are students who want to learn how to drive and administrators consisting of DriverPass employees.
* The UI for students consists of these functions:
  + Enter Username
  + Enter Password
  + Change Password
  + View/Edit Profile
  + Select Package
  + Enter Payment Information
  + Schedule/Cancel/Modify Appointment
  + Access Online Training Materials
  + Download Content
  + Take Practice Tests
* The UI for administrators consists of these functions:
  + Add/Delete/Modify User
  + Change Password
  + Schedule/Cancel/Modify Appointment
  + Print Reports
  + Hide Packages
* Liam provided a picture of his idea of how one of the pages in the system would appear but after consideration it has been determined that the page holds too much information for a single page and will reduce the user experience. With this consideration the new ideas have been determined and are shown below.
* Pages under consideration are:

1. An enrollment form where the student enters personal information such as name, address, special needs etc.
2. A page which holds lesson plan information.
3. Lesson pages.
4. A page with lesson progress and online test progress including instructor comments.
5. A page with past and future on-the-road lesson times with instructor comments.

* The status of tests taken will be shown as either, not taken, in progress, passed or failed.

### 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?*

* All users have reliable internet access to be able to access course materials at the minimum.
* The servers can provide bandwidth to support any number of users at any given time.
* It is assumed that the building of the system is within the budget for DriverPass.
* It is assumed there will always be adequate power for the system to run.

### 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 learning materials require internet access.
* The system will not function without power.
* We have been given about 4 months to complete the project. A limitation may be on the number of developers we have to work on it or else the amount of time.

### 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.*

A screenshot of a computer

Description automatically generated