# CS 255 Business Requirements Document Template

## System Components and Design

### Purpose

* As a consulting company we want to build a web-based platform for DriverPass
* Through this web-based platform, DriverPass wants to provide their clients with practice tests and on the road driver’s lessons
* DriverPass’ intention is to better prepare their clients to pass the DMV written and road skills test

### System Background

* DriverPass wants their clients to have a website that provides their clients with two main services
  + The first service is an up-to-date practice test, based on the client’s state DMV laws and rules
  + The second service is to provide clients with instructors that can supply three different packages of road skills classes.
* The website must be accessible via a mobile version, such as a tablet or cell phone, or computer/laptop browser.
* There must be five different level of users:
  + the administrator who can manage the packages, user access, and view reports
  + The IT officer who can perform basic maintenance and manage sub user access
  + The secretary who can manage road skill appointments, such as create and change existing appointments
  + The driver who can manage their own appointments and communicate with their student
  + The student who can sign up for lessons, make payments, and take practice tests
* The client desires security but does not want to handle data and user security. They wish to focus on the product, not the inner workings of the site.

### Objectives and Goals

* The system shall supply reports on various data such as
  + Reports must be exportable in various formats, excel spreadsheets are a requirement
  + Appointment tracking such as when an appointment was made, changed, and who made the change
  + An appointment calendar such as who the driver is, the student, when the appointment is.
* The system must have three basic packages for driving lessons that the IT officer and administrator can manage, and students can sign up for
* The system shall supply various interfaces based on the user:
  + For students they need to see details about their driving lessons, instructor feedback, and practice test results and assessments
  + For the secretary they must be able to see reports for scheduling and a page to amend scheduling or add an appointment
  + For the IT Officer they must have access to detailed reports like action logs, perform database management, and change users
  + For the administrator they must have access to detailed reports, same as the IT officer, place to change or hide driver packages, modify users including reset passwords or lock out users, and provide administrator to any recent DMV changes
* The practice tests must synchronize with the various state’s DMV handbook

## Requirements

### Nonfunctional Requirements

#### Performance Requirements

* DriverPass shall be a web-based system.
  + Rational: Users need access from anywhere. Thus, a web-based system will allow users to access it from their computer or phones.
* The system shall have live updates for appointments and testing.
  + Rational: It is important to have the most up-to-date information about scheduling. So, when a change is made students and instructors see the same information at once. For tests, the site administrator needs to get instant notifications to make changes for the testing.

#### Platform Constraints

* DriverPass shall run on a cloud SAAS platform
  + Rational: DriverPass does not have the infrastructure to supply a server or desire to manage the hardware. Thus, a cloud platform is the most convenient way to manage, using something akin to AWS resources and tools.

#### Accuracy and Precision

* The system shall have five types of users: students, instructors, secretary, IT administrator, and site owner.
  + Rational: Not all users need the same access. A database can manage the permissions or access levels of each user, which will provide them with the necessary UI and menus needed to perform whatever tasks is appropriate for their permissions.
* The system shall have an error checking and reporting system
  + Rational: When users meet errors a log will be created that details the last few actions of the user and what the error reports. This will allow IT administrators and site owner a chance to correct the problem and provide the user with a more reliable experience.

#### Adaptability

* The website shall have a ticket request system where new users can request instructor privileges.
  + Rational: Instructors need to be vetted before given the rights to teach others. In the beginning this can be done via an interview and background check outside the system. The permission change can be managed via the secretary, IT administrators, or site owner.
* The system shall have an automated system for registering users, while IT administrators and the site owner can amend individual user accounts.
  + Rational: Due to the potential popularity of the website it is important that new users register easily. However, new users should not have immediate access to all permissions. For example, an instructor account should have access to change their schedules, but students should not without requesting. The secretary should have full access to create schedules but not administer the back end of the system.

#### Security

* User login shall require a username and password.
  + Rational: Each user will need to have a secure way to login, due to how the website supports credit card credentials and personal information like real name, emails, and address.
* The system shall encrypt person data.
  + Rational: Personal information is linked to each account. This data, like credit cards and addresses must be encrypted.
* The IT administrator and site owner shall have permission to reset user passwords.
  + Rational: Humans are prone to error and sometimes a password is forgotten. Thus, the two listed individuals need access to reset a password so that a user does not need to create a duplicate account.
* Security protocols shall extend to limit failed account attempts, three attempts are the max.
  + Rational: Hackers may try to access the site to get personal information and credit card data. Thus attempts, like brute force, are restricted and an account will be locked out if too many failed attempts are made. Only the IT administrator and site owner will have access to unlock the account.

### Functional Requirements

* The system shall confirm user credentials when logging in.
  + Rational: To support user security and DriverPass’ reputation for protecting user data there must be validation, comparing username with password.
* The system shall provide the IT administrator and site owner with control over on-road packages, such as pricing and the ability to hide a package.
  + Rational: To stay competitive Driver Pass needs to have the rights to change their pricing system and change a package as needed.
* The system shall provide the site owner with notifications that laws or ordinances have changed with various DMVs.
  + Rational: To provide students with correct testing information the site owner needs to know when things change in various states.
* The system shall provide the site owner with rights to change and administer tests.
  + Rational: The chief purpose behind the site is to prepare its users to take a written driving exam. The site owner needs to have full control and editing rights over the tests to provide them with correct information.
* The system shall supply a scheduling system to allow users to create and change their reservation as needed.
  + Rational: The second purpose of the site is to prepare students for the driving exam. To do so students and instructors need to have a way to schedule their time together.

### User Interface

* The color scheme of the user interface shall be consistent across all users.
  + Rational: A consistent user screen will allow IT administrators to supply better support by seeing what the user sees when guiding users. Also, a consistent color scheme will make browsing the site more user friendly.
* Various users will have access to different submenus based on their access level.
  + Rational: To supply the site owner and IT administrators easier access to certain features like changing passwords, they need submenus to make changes on the fly. and Other important features to support are minor backend support like changes to packages, driver scheduling, and minor UI adjustments.
* Before any UI adjustments are implemented, the system shall supply a commit feature, requiring the user making the change to confirm their adjustments.
  + Changes to the UI features can be code breaking, such a feature can also supply greater backup if the changes have unforeseen effects on the site. An important feature of this will also create a restore point if the adjustments were to affect other features.
* The mobile browser shall have less features than the desktop version.
  + Rational: Mobile phones and browsers are powerful, but the viewing screen is much smaller. To provide a more user-friendly experience on mobile it is important to not overwhelm the user with various menus and windows. Desktop version will have all aspects the site provides. The mobile version will allow a user to create a new account, schedule testing, get links to helpful resources, and process payment for services. Most mobile operating systems now supply an option to view the desktop version on the devices if the user chooses to do so, as an alternative.

### Assumptions

* All users will have internet access via a Windows, Mac, or Android device.
  + Rational: To access the site users will have to have internet access. Also, most individuals over the age of 16 either own or have access to a smartphone or device capable of browsing the web.

### Limitations

* The site owner will not have the ability to add new packages.
  + Due to the integrity of the site the first version will not allow Driver Pass to add more packages. Future updates are planned to change this and give them more control over their pricing model.

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