

## 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 client, Driverpass, is a small business that would like to offer training for DMV driver's tests in the form of online classes and in-person one-on-one driving lessons in order to help more people pass these tests and obtain driver's licenses.

#### 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?*

- A considerable number of people fail DMV driver's tests, and DriverPass would like their program to solve that problem through accessible training.
- The business will consist of Students, Drivers, and a secretary as well as an IT admin for maintenance and the owner. They will communicate with the DMV.
- They will need to access a system with an interface appropriate for each one to interact with student accounts, driving lesson schedules, DMV updates, and types of lesson packages available.

#### 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 owner can access and modify user accounts and permissions, and a log of activity tracking which user has performed what operation on any system data and when.
- The IT admin needs to be able to modify and maintain the system data.
- The secretary must be able to modify, add and delete appointments for lessons.
- Appointments should show data for the time, user, package type, driver, pickup and drop-off locations.
- Users must be able to choose from available packages to pay and allow access to making appointments, exams, and classes to their account based on package status.
- Users must be able to make, modify or delete their own appointments for lessons in available time slots to them.
- The owner should be able to disable packages that are no longer available.
- The secretary should be able to register a new user with the following information: first name, last name, address, phone number, state, credit card number, expiration date, and security code, and special needs notes. They should also be able to update and modify existing users' data.
- Each user should be able to access and edit their information on a profile/progress page which shows the user's progress for online tests, active package or program, notes the driver gave for

their lessons, their account information, a photo of themselves and their driver, and a link to contact DriverPass.

- Drivers and staff should be able to find a student's contact information if needed.
- DMVs should be able to send alerts and news through the system, which admins can see and make updates to the system if needed, and drivers and students can be aware of.

## 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?*

- Must be able to handle multiple students, drivers and admin logging on at the same time to access and update data and must not slow down as additional users log on.
- The system should not require extra maintenance work; consider using a cloud host.
- User information and credentials must be secure and only visible by necessary interested parties.
- Payment information must be processed in a secure manner and not stored anywhere in a readable format.

### 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 Web-based application should be accessible online from any computer OS – Linux, Windows, or Mac.
- Owner (admin) should be able to log in also from mobile devices (Android and IOS) to download data in the form of excel reports and PDF as well as manage permissions for users.
- Databases will hold user information and schedules.

### 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?*

- All USERS will have a level setting: Owner, Admin, Student, Driver, Secretary.
- Secretary, Driver, and Student will all have the ability to notify the Owner or trusted admin of a problem such as a bug or suspected data tampering through email or phone information somewhere visible to them.
- Drivers and Students will be able to contact the secretary by phone or email to resolve problems with account information or related to the courses or customer experience.
- Usernames must be unique and case sensitive, as are passwords.

- Scheduling appointments with the same date, time, and driver should not be allowed; new entry attempts should be validated.

### **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 Secretary should be able to add, remove or modify user data for students, themselves, and drivers, as well as schedule them for classes and driving lessons. They should also be able to modify that schedule and contact both drivers and students.
- The IT admin needs to be able to add and remove types of course packages as well as modify, delete, add, or remove users of all types but Owner.
- Updates needed would be handled by the cloud server's operators, or in some cases the IT officer.

### **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?*

- A Username and password will be required for all users to log in.
- All accounts are required to have an email on file, where passwords are sent if the password is forgotten.
- Passwords must be case-sensitive, contain at least 6 characters with at least one letter, numeral, and safe special character, and may not be more than 12 characters (to prevent server overloading DDOS attacks). Username length must be between 6 and 12 alphanumeric characters and underscores or hyphens.
- If a wrong password is entered three times within an hour, the user will need to contact an administrator to unlock their account or wait one hour before attempting to log in again.
- Data sent over the HTTP protocol that is sensitive (name and password, email, address) will be encrypted and then decrypted only by the system to store the data.

### **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 or creating an account according to security measures outlined above.
- The system shall add new accounts to a database with username and password, and access type, and blank fields for other information if not provided.
- The system shall store all sensitive information (such as password and address) encrypted in the databases.
- The system shall verify user access level and display the appropriate interface to the user.
- The system shall allow addition, deletion or modification of entries in the schedule database.

- The system shall allow viewing of class materials and practice exams online.
- The system shall allow the DMV to send important messages to it and store those messages.
- The system shall store types of course packages that can be purchased to set different allowances for scheduled lessons and time frames to view class material to the students.

### **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 system shall show an interface to Students allowing them to update information, purchase a course, view class materials and access practice tests they have purchases, and schedule lessons with drivers that they have purchased, as well as see contact information for reporting problems and contacting the secretary and their driver.
- The system shall display an interface to Drivers that allows them to update their information, see and modify their schedule, contact students, secretary, and report problems to admin/owner.
- The system shall display an interface the Secretary that allows them to update, remove, and add Driver, IT Admin, and Student users and information, as well as modify, add or remove schedule entries for driving lessons.
- The system shall display an interface for the IT Admin that allows modification, deletion, or addition of users and information of all types but Owner.
- The system shall display an interface for the Owner on all operating platforms that allows downloading excel and PDF documents of user information, financial activity, and records of system activity, as well as deletion, modification, and creation of other user accounts.
- The system shall display DMV news and alerts to all users in a conspicuous place.

### **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?*

- Users must be able to access the internet with a stable connection.
- Users must be able to read, understand and type in English (or use appropriate 3<sup>rd</sup> party accessibility software such as screen readers.)
- Users must have access to a computer with a mouse and keyboard.
- Users must have debit/credit card information with which they can pay online.

### **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 must be completely ready by the specified deadline to fit into the budget that the client specified.
- We will have to stick within a budget/client's budget when it comes to purchasing the database and server storage.

### **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.*

