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| CS-255 System Analysis & Design |
| Business Requirements |
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| 11-29-2020 |

# 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 for this project is DriverPass.
* The DriverPass system will need to be able to provide the students with online practice exams and on the road training.
* Our team plans to have a check-in meeting, on March 11th, with the team at DriverPass to discuss progress on the initial design.
* Our team estimates that we will be able to deliver the DriverPass system by May 9th and close on the project by May 10th.

### 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?*

* Liam, the owner of DriverPass, is wanting to capitalize on the opportunity to provide better training to students who are practicing for their driver license test at the DMV.
* DriverPass will be a system intended to curve the fail rate of students who take their drivers’ test. The system will provide the student drivers with online practice tests and the ability to schedule on-the-road training if the students wish to do so.

### 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?*

* DriverPass needs to be capable of accessing their data outside of their office (i.e. on home computer and cellphone.)
  + Data reports must be downloadable
  + Accessibility needs to be able to be customizable. Different employees will have different rights and roles.
    - Liam to have full access; change passwords, add users, disable users access to the system, etc.
    - Ian, IT officer, to have access so he can maintain the system, modify it, etc.
    - Secretary who will use the system to make appointments so they should have access to the student database and scheduling module.
* Changes in the database need to be traced back to who the user was. Changes should be tracked and saved so that a downloadable activity report file can be printed.
* Users of the DriverPass system need to be able to create an account.
  + The students will use their accounts to schedule on-the-road training sessions. The students must have the capability to schedule a training lesson at their desired time and date. The driving lessons will last for two hours.
  + The students should also be able to modify their future lessons (i.e. cancel, change the time, etc.)
  + DriverPass needs to have the capability of resetting the user’s password in case they forget.
* The system needs to be able to keep track of what drivers are paired with what students.
  + There are 10 cars, and each car has a trainer assigned to it.
* DriverPass should have three packages for our customers to pick from. The system should allow for Liam to easily select a package and remove it from the selection options that the user has. The packages should initially consist of the following:
  + Package one – six hours in a car with a trainer
  + Package two – eight hours in a car with a trainer and an in-person lesson to review DMV rules and policies
  + Package three – twelve hours in a car with a trainer, an in-person lesson to review DMV rules and policies, and access to the online classes with all the content and material. The online class will also include practice exams.
* Users registration profiles need to have the following information fields:
  + First and last name
  + Address, city, and state
  + Phone number
  + Credit card number
    - Expiration date
    - Security code
  + Pickup and drop-off location
* Wants a connection to the DMV so they can update their system for any new laws and regulations for drivers of the road.
* Cloud based with automatic backup and security updates.
* Base the interface design off Liam’s drawing.
* Users should be able to monitor progress of their online exams that they have taken. Ex:
  + **Test name:** Driving Basics **Score:** 100% **Status:** Passed
* The driving instructor should have a template to keep track of the driving lesson. There should be four columns consisting of:
  + Lesson Time
  + Start Hour
  + End Hour
  + Driver Comments

## 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?*

* DriverPass will need to be web-based and the network will be hosted in the cloud.
* System should be saved and updated automatically when either users enter their information into their accounts or maintenance is being done on the backend
* DriverPass should be able to be used on both computers and cell phones.

#### 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?*

* DriverPass should be developed using Linux because of its configuration ability, security, and reliability.
* Yes, there will need to be a few databases:
  + Client data
  + Employee data
  + Analytical reports
* Databases managed via the cloud.
* Built-in security features from Linux help with the compatibility of other management systems such as MySQL.

#### 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 distinguished by their individual usernames that they used to create an account. The usernames should not be case sensitive, but their passwords will need to be. Email addresses that are being used to set up an account should be compared to the current list of email address so that no duplicate accounts are created.
* The admin for the system should be notified immediately whenever a system crash, security breach, etc. occurs.

#### 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?*

* Scalability within Linux based databases are no problem.
* Updates can be run in the background.
* Network access controls are configurable so that only the individuals who should be accessing that data can and others are not.
  + Liam needs full access to clients and employees accounts. Along with access to analytical reports about the business.
  + Ian will need access to maintain and modify the system.
  + Liam’s secretary will need basic level access to modify/add/delete client’s appointments and other secretarial duties.

#### 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?*

* Users, both clients and employees, will need their login username or email address and their password to log in. Tracking is available to monitor if an irregularity with the login attempt has occurred. This can flag and send a notification to both the user and admin. The alert can allow the user or the admin to lockout the account until further user verification has been provided.
* Encryption of the data that is stored and transferred within the cloud network is a must. Security protocols such as a secure shell, secure copy, and secure shell file transfer protocol should be used for all the file transfer and remote access actions.

### 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 have business rules such as restricted network access and security protocols for file management.
* DriverPass shall have the ability to communicate with the DMV so they can inform them of any rule changes or policies and provide DriverPass with the most current practice exams.
* The system should allow for clients to schedule/add/delete driving lessons. Liam and other authorized personal will have the authorization to perform this for the clients as well.
* The system shall pair up and show the clients who they will be driving with and who their driving instructor is.
* The system shall have all its reports for Liam in a central location. The reports should be easy to download and kept updated automatically.

### 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 interface will need to provide the clients access to their respected profiles or the ability to create one if they are a new client.
* The interface will be used by the employees as well. Their interface will have different options or data that they can access, dependent upon what role they serve within the company.
* The interface will be used for everything that DriverPass is able to do in person or over the phone. Such as, but not limited to, registering for courses, selecting, and purchasing the course package, sign-up for driving lessons, edit personal details are some of the ways the clients will be able to interact the interface.
* The employees will be using the interface mainly to management their clients and the databases. This can include modifying or uploading class material for the clients, viewing the schedule for driving lessons, configure users’ profiles, access reports, to name a few.

### 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?*

* The main assumption that I have is that DriverPass will either not be having the option for their clients to pay through their interface or Liam will be utilizing one of the popular credit card processing companies such as PayPal.

### 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?*

* Limitations will occur when Liam or Ian want to make major changes to the interface. Linux is not user friendly “under the hood” if they have not had any experience working with it before.
  + Such as when Liam would like to go in and change what course packages are being offered.
* The cost of the project has never been mentioned and to build a new interface from scratch can cost a lot of money.
* We have a small team, and this is a large project. Leaving us with a small margin for error to avoid from having the project running behind and not meeting the client’s timeline expectations.

### Gantt Chart

Chart, funnel chart

Description automatically generated