# CS 255 Business Requirements

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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?*

DriverPass is our new client and we had a meeting with them, Liam who is the owner of the company, and Ian who works as the IT officer at the company. The client’s request is that they want us to create an application system that provides virtual driving school experience in which users can take lessons, exams with an option to perform in person driving lesson.

### 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 believs that that so many people have failed the exams due to a lack of practice, therefore they would like to create an environment where students can get plenty of time for study and preparation for the driving test. The Client requested us that they’d like us to implement multiples features that students can receive entirely online such as courses, practice exams, and on the road training. They specifically made a request to avoid duplicate data issues, so we would have to implement a feature to disable you to modify or update the date if you are off-line.

### 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?*

Our Client wants to have multiple different privileges that can be given to employees depending on their role. Ian specifically needs a full administrator right with which he can block laid-off employees to access their data and/or accounts.

They also want tracking features so that they can get to monitor records about who and when someone made a reservation, who made a cancellation or made changes in the reservations and such. Due to the high volume of students, they’d also like us to implement a system that can create and display information like the day and time of the reservation, who are the instructor and the student etc.

## 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?*

* The system should run on the cloud-based environment such as Azure, AWS.
* The system needs to be fast enough so that the users can use the website hassle-free without any interruption.
* The system update should be able to perform anytime the Client wants.

#### 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?*

* Linux should be the platform to run on.
* Database and and all sorts of security systems would be absolutely necessary. Every necessary features can be managed by AWS or Azure.

#### 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 needs to create his/her own account. Each username, email address, password and unique ID would be minimum info to create his own account. Alternatively, we could implement third-party authentication such as Google sign in, Facebook sign in. These are pretty easy to implement and super popular nowadays.
* There should be a report issue feature that directly sends the bug/issue info to the admin. I believe there should be two ways, one is automatically generated bug report, other is the manual bug reports that are generated by the users, manually.

#### 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 should be able to let you create changes in users account without changing the code.
* Most cloud-based infrastructure services nowadays lets you perform update while the website is perfectly running fine. However, some major website construction update may require some parts of the website to go down, you should perform this kind of major update while the access is relatively low such as during the night time.
* The IT members should be given with the “minimum” rights and privileges to make changes to the website. You can just create each IAM Roles and assign the Roles as they need, but Full Access to the website and companies’ confidential info should be strictly forbidden.

#### 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 should be required to enter username and password. Stay-login features would be also highly encouraged.
* You would need multiple layers of security measures for protecting the date. The website needs SSL certificate, run on the HTTPS, separating the internal and external zones and handling and saving the data behind the security wall inside the internal, encryption upon the exchanging data are some examples.
* You can just set up the “forgot password?” button that lets her enable password re-set up.

### 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 lets users perform payment
* The system shall lets users see their transaction history
* The system shall lets users see his scores
* The system shall lets users make appointments
* The system shall have some sort of discount features
* The system shall offer multiple different learning packages

### 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 UI needs to be clear, concise and easy to use and lets users make options for his needs such as take practice tests etc.
* Each user will have to create her own account and materials she can get will depend on the package she purchases
* The way user will interacts with the interface will depends on his device. Therefore the website will need to have fully responsive design.

### 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?*

* There was no conversation over what platform was to be used. I chose cloud because that’s pretty much the norm nowadays and also extremely low cost. So there was no talk about budget aspect either.

### 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?*

* We’d have about 5 months to construct this project.
* I believe if we have 5 months, building, testing, and running this kind of website would be feasible. I believe we should use some of templates to facilitate the whole process.
* Agile should be used in order to achieve the development as fast as possible.

### 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.*

