Eduardo Rodrigues [CS-255-R3271 System Analysis and Design 24EW3](https://learn.snhu.edu/d2l/home/1460372)

# CS 255 Business Requirements Document

## 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 wants to develop an enterprise system to overlook their companies online and offline training business.
* They want to help their user base become the best drivers they can be and pass their department of motor vehicle tests.
  + They will accomplish this by providing their clients with the most up to date, effective, efficient, and accessible content and services to choose from.

### 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 wants lightweight directory access protocol type functionality that connects to appointment, learning, and account management system that receives financial information, telemetry data, and content from the department of motor vehicles. The system will include user activity logging, authentication, authorization, and system specific reporting and data management implementations. The system will ultimately connect their in-person and online training platforms.
  + - Microsoft 365 for Business may work well here unless cost is a concern. There are also many SaaS options available for appointments and ERM/CRM necessities. This all needs to be interoperable with not only the LMS but with a client facing interface to boot in a latter iteration.
    - We will eventually connect their enterprise system to an Enterprise Resource Management System / Customer Resource Management System combination to a learning management system of their choosing in later iterations and various system specific reporters.
* Many options exist and can all culminate on the cloud. One can possibly develop a multiuser progressive web application depending on the user base and interface, an LMS like Sakai and a payment API like PayPal or stripe. We can even decouple user and employee facing interfaces to preserve operational security.

### 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?*

* Users should be able to log onto a website and sign up for the different packages.
  + Users will be able to book and pay for appointments online.
  + Users will be able to access online components offered in the future.
  + Users will be able to access technical support and contact the business using the interface.
* Employees should be able to log into their respective interface
  + The boss will be able to act as an administrator
    - Accounts can be created, updated and deleted
    - Activity logs will be kept on all users
      * Customers will have telemetry data that notes their interactions with the business both in-person and online.
    - Scheduling activities will be accessible and mutable by privileged users
    - Access to various components is mutable by privileged users
* Data used will be interoperable with Excell.
  + Data should be accessible and mutable regarding business logic pertinent to daily operations. Admins get to see all and modify all. Drivers can see what’s on the menu for that day and who’s ready to roll. (Should drivers be acknowledging their customer pickups?)
* There will also be a portal to the DMV which will probably be CRM of sorts for admins to be able to use the LMS and tools like Tsugi to build learning tools to update both staff and students of updates. This could also be more of a general news feed depending on what sort of api or data stream we can tap into at the DMV.

## Requirements

### Nonfunctional Requirements

#### 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?*

* Scalable for historic web traffic
  + Wix has various have
    - https://www.wix.com/performance
* The Enterprise facilities are accessible from the internet
  + <https://www.microsoft.com/en-us/microsoft-365/business>

#### 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?*

* Microsoft 365 is Multiplatform
  + 365 for Business is a SaaS. We access this from the Internet so everyone can use it.
  + Microsoft Intune can provision an enterprise ready system using a user's existing Windows version. It can also handle connections from all other platforms for the most part.
    - <https://www.microsoft.com/en-us/security/business/endpoint-management/microsoft-intune>
    - https://learn.microsoft.com/en-us/mem/intune/fundamentals/intune-planning-guide
* Wix is Multiplatform
  + The Administrative and User portal is all accessible from a home or mobile internet connection.
  + The online store can have access to vendor specific point of sale hardware.

## Requirements

### Nonfunctional Requirements Continued

#### 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?*

* The client wants to be able to be notified of problems using professionally curated reports pertinent to the systems in play.
  + Admin privileges can be given to the client to access telemetry and reports.
    - A company like Wix has continuous monitoring built into the website package. <https://www.wix.com/website-security>
    - Business 365 can be provisioned to a user’s personal device. The client can have administrative access and manage the enterprise from that level of priveledge.
      * Access control for enterprise computers and provisioned personal devices can handle user authentication and access control.
      * https://www.microsoft.com/en-us/security/business/endpoint-management/microsoft-intune

#### 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?*

* Automated System Maintenance and Customer support is needed.
  + will be available on Microsoft 365, Enterprise, and Wix
  + Most changes can be made as an administrator for both systems via administrative portals or prompts.
    - <https://www.microsoft.com/en-us/microsoft-365/business/office-365-administration>
    - <https://support.wix.com/en/article/about-your-wix-dashboard>
  + These systems are self-sustaining and opinionated. (Many non-coding or low-code solutions now exist for code related problems.
    - Excel itself and the whole SaaS infrastructure is a good example of this on 365.

#### 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?*

* Each platform will have its own authentication and access control measures in place.
  + Various Factor authentication mechanisms are available.
    - <https://support.wix.com/en/article/using-2-step-verification-for-your-wix-account>
    - https://learn.microsoft.com/en-us/entra/identity/authentication/concept-authentication-methods

## Requirements

### Functional Requirements

### 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.)?*

* There are three distinct systems in play here. An Enterprise system, an Ecommerce platform, and a learning management system. Entry to the systems is handled using authentication and access control.

### 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?*

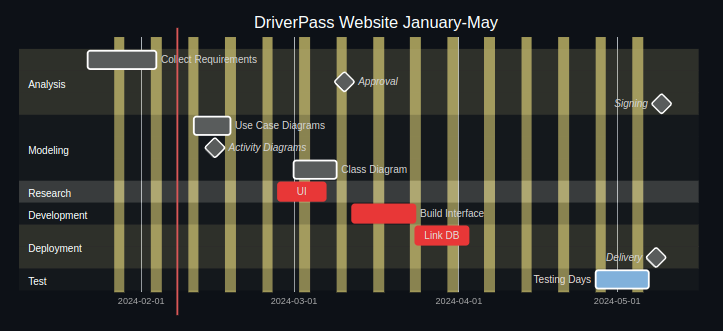
* We presume that the User does not want to launch the website and learning system from Microsoft Azure.
* We assume that the User wants to less work to do with respect to the Host environment using a vendor like Wix as opposed to launching a website using a virtual machine or container or BareMetal.
* We presume the Users will confortable using Microsoft products.

### 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?*

* Project constraints depend on the culmination of vendors that the client selects or lack thereof.
* Cost will go up with custom implementations
* Using prefabricated solutions will go a long way in saving time and money.

### Gantt Chart



See code bellow.

::: mermaid

gantt

dateFormat YYYY-MM-DD

tickInterval 37day

title DriverPass Website January-May

excludes weekends

%% (`excludes` accepts specific dates in YYYY-MM-DD format, days of the week ("sunday") or "weekends", but not the word "weekdays".)

section Analysis

Collect Requirements: , 2024-01-22, 2024-02-04

Approval: milestone, 2024-03-10, 2024-03-11

Signing: milestone, 2024-05-09, 2024-05-10

section Modeling

Use Case Diagrams: , 2024-02-11, 2024-02-18

Activity Diagrams: milestone, 2024-02-15, 2024-03-9

Class Diagram: , 2024-03-01, 2024-03-09

section Research

UI: crit, 2024-02-27, 2024-03-07

section Development

Build Interface: crit, 2024-03-12, 2024-03-24

section Deployment

Link DB: crit, 2024-03-24, 2024-04-03

Delivery: milestone, 2024-05-08, 2024-05-09

section Test

Testing Days: active, 2024-04-27, 2024-05-07

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**References**

[**https://www.microsoft.com/en-us/microsoft-365/business**](https://www.microsoft.com/en-us/microsoft-365/business)

[**https://www.wix.com/ecommerce/online-store**](https://www.wix.com/ecommerce/online-store)