Southern New Hampshire University

CS 255 Business Requirements Document Rudolph Travers

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 purpose of the project is to design a system for the client that equips students with current resources to ensure that they pass their driving test. DriverPass wants to enter the driver's education market with this system, and it should allow students to register for a unique account, take practice exams, and schedule driving lessons with an instructor.

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?

- The intent of the DriverPass system is to provide end-users with an all-inclusive platform to help them study and prepare for their driver's exam. The system will allow for students to schedule one-on-one in person driving instruction. To achieve this here are the components required:

    - **Scheduling component** - way to schedule driving lessons.
    - **Evaluation component** – way for instructors to give students performance evaluation.
    - **Data storage component** – way to store the end-user's information for profile and payment.
    - **Tracking component** – way for students to see where they are with practice exams and course materials.

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?

- When the system is done it should be able to perform these key functions.

System Functions

- Connect to the local DMV.
- Allow students to select a training package based on needs.
- Book a date and time for training with a driving instructor.
- Make it possible for instructors to leave an evaluation of a student's performance so that the student can see it.
- Allow owners to access data from anywhere.
- Show students how they are doing with the test they have taken.

Measurable Task

- Students should have the ability to edit personal & payment info.
- The system must accurately show the students test status.

- Appointments must be able to be created without double-booking the instructor.

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 will run in a web-based environment on the cloud. In order to provide real-time updates on appointment availability and avoid double booking the system needs to run fast. Upon finishing the online practice test, students need to be able to see their scores immediately. The system must be updated often to keep in compliance with DMV changes.

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 system will run on windows and use Amazon Web Services for cloud hosting. There will be a database to store student information, test scores, and notes from the instructor.

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?

- User profiles will be distinguished by assigning each profile a different role: student, driving instructor, staff, or administrator. The input is case sensitive and if there are any system issues the admin should be alerted.

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 will make it possible to change user roles without changing the code. Staff and admin can edit student roles. Only admins can delete users or edit staff and driver roles. The system will be able to keep information from the database after system updates. The IT admin will have full access to the system.

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?

- To login users will have to enter a case-sensitive username and password backed up by two-factor authentication. Data will be secured through encryption, HTTPS, and constant security monitoring. After users enter their password five times the account will be locked for 30 minutes, and the user and admin will be notified. If the user's password is forgotten, then they can access their account by entering the correct username and the email address associated with the account.

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 let students take a practice driving knowledge test.
- The system shall let students book an appointment for a driving lesson.
- The system shall let staff book appointments for students.
- The system shall allow administrators to delete users.
- The system shall show which tests students have completed.
- The system shall allow driving instructors to give feedback to 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 interface needs to accommodate many different users and show specific information. It needs to have a dedicated space for online tests, driver feedback, special requirements, and personal information.

User roles and Actions

- Students – access tests, book appointments, view driver feedback, and update personal information.
- Driver – leave feedback
- Staff – make appointments for students and edit their profile
- Admin – can do everything of all the other roles and generate reports.

Interaction – users will interact with the interface through a web browser.

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?

- I assume that the users have a device with internet access. I assume that they have the knowledge to find and navigate through the website.

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?

- When analyzing the plan for the system design a limitation I see is that the UX design is not explicitly defined so that may cause some back and forth between the clients and developers to hone in on the right design that satisfies the clients needs. On top of that overall design is limited by the knowledge of developers and team members.

Gantt Chart