

**Learn2Drive - SUPPORT LEARNING OF DRIVER's LICENSE EXAMS**

**Software Requirement Specification**

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|  | |
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\*A - Added M - Modified D - Deleted

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**SIGNATURE PAGE**

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**REVIEWERS:** <Name> <Date>

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**APPROVAL:** <Name> <Date>

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# 1 Introduction

This Software Requirements Specification (SRS) document describes the requirements for a driver's license exam learning support website. The purpose of the website is to help learners prepare for and pass the driver's license exam. The website will provide learners with access to a variety of learning materials, including interactive practice tests, video tutorials, and study guides. The website will also offer features such as progress tracking and personalized feedback.

## 1.1 Purpose

Describe the requirements for a driver's license exam learning support website. The website will help learners to learn the material that they need to pass the driver's license exam and to develop the skills that they need to be safe and responsible drivers.

## 1.2 Scope

Describe the requirements for a driver's license exam learning support website. The website will help learners to learn the material that they need to pass the driver's license exam and to develop the skills that they need to be safe and responsible drivers.

## 1.3 Definitions, Acronyms, and Abbreviations

Definitions

* Driver's license exam learning support website: A software website that helps learners prepare for and pass the driver's license exam.
* Learner: A person who is using the driver's license exam learning support website.
* Learning materials: The various resources that are available to learners in the driver's license exam learning support website, such as practice tests, video tutorials, and study guides.
* Progress tracking: A feature of the driver's license exam learning support website that allows learners to track their progress towards their goal of passing the driver's license exam.
* Personalized feedback: A feature of the driver's license exam learning support website that provides learners with feedback on their performance, tailored to their individual needs.

|  |  |  |
| --- | --- | --- |
| **Acronym** | **Definition** | **Vietnamese** |
| Guest | A person using the application without signing in. | Khách mời |
| User | A person who signed in as a User, the purpose is to do a test or rental car. | Người dùng |
| Teacher | A person who signed in as a Teacher, the purpose is to coach user | Giáo viên |
| Staff | A person who work for an organization | Nhân viên |
| Administrator | A person who signed in as a distributor, the purpose is to manage quiz tests, rental car requests and organize systems. | Quản trị viên |

Abbreviations

1. e.g.: exempli gratia (for example)
2. i.e.: id est (that is)
3. etc.: et cetera (and so on)
4. N/A: Not Available

# 2. General

## 2.1 References

* [IEEE 830-1998]: IEEE Standard for Software Requirements Specifications, Institute of Electrical and Electronics Engineers, 1998.

The IEEE 830-1998 standard can be obtained from the IEEE website at https://standards.ieee.org/standard/830-1998.html.

Any additional documents that are referenced in this SRS document will be listed in this section as they are added.

## 2.2 Overview

The driver's license exam learning support website is a web-based application that will help learners prepare for and pass the driver's license exam. The website will provide learners with access to a variety of learning materials, including interactive practice tests, video tutorials, and study guides. The website will also offer features such as progress tracking and personalized feedback.

# 3. Overall Description

The support learning driving license exam website is a software product that aims to help the driving license applicants to prepare for and pass the driving license exam. The website provides various features and services, such as:

* Product perspective: The website is a standalone product that interacts with the official driving license exam system. The website does not replace or modify the existing exam system, but rather complements and enhances it. The website also uses artificial intelligence to provide personalized and adaptive learning and testing experiences for the users.
* Product functions: The website allows the users to:

+ Register and create an account with their personal and contact information

+ Choose their preferred language and location for the exam

+ Access a comprehensive question bank that covers all the topics and road signs related to the exam

+ Take multiple choice trial tests that simulate the actual exam conditions and provide instant feedback and scores

+ Review their progress and performance over time and identify their strengths and weaknesses

+ Get tips and suggestions for improvement and revision

+ Schedule and pay for the exam online

+ Receive notifications and reminders about the exam date, time, and venue

+ Contact the User support team for any queries or issues

- User characteristics: The website targets the driving license applicants who want to get a valid driving license after passing the exam. The users are expected to have basic computer and internet skills. The users may have different levels of knowledge and skills in driving, as well as different learning styles and preferences. The users may also have different motivations and goals for getting a driving license, such as personal, professional, or recreational.

- Constraints: The website must comply with the legal and ethical standards and regulations related to the driving license exam system. The website must also ensure the security and privacy of the user data and transactions. The website must be compatible with different browsers, devices, and platforms. The website must also be reliable, scalable, and maintainable.

- Assumptions and dependencies: The website assumes that the users have access to a stable internet connection and a suitable device to use the website. The website also assumes that the users have a valid identity proof and a payment method to register and pay for the exam. The website depends on the availability and functionality of the official driving license exam system, as well as the third-party services and tools that it uses, such as artificial intelligence, payment gateway, etc.

- Requirements subsets: The requirements for the website can be divided into functional requirements, non-functional requirements, and user interface requirements. Functional requirements specify what the website should do, such as providing trial tests, scheduling exams, etc. Non-functional requirements specify how the website should do it, such as performance, usability, security, etc. User interface requirements specify how the website should look like, such as layout, color scheme, navigation, etc.

# 4. Functional Requirements

## 4.1 <Use Cases Diagram>

## 

Link Backup:

https://drive.google.com/file/d/1gJlQwn9k8TV6Y-aU8FAUaXP9oXlIJ3jp/view?usp=sharing

## 4.2 <Use Cases List>

|  |  |  |  |
| --- | --- | --- | --- |
| ID | UseCase | Primary Actor | Secondary Actor |
| UC-01 | Login | Guest |  |
| UC-02 | Register | Guest |  |
| UC-03 | View Contact | Guest |  |
| UC-04 | Read News | Guest |  |
| UC-05 | View Profile | User |  |
| UC-06 | Edit Profile | User |  |
| UC-07 | Exam Register | User |  |
| UC-08 | Attempt Practice Quiz | User |  |
| UC-09 | View Document | User |  |
| UC-10 | View Vehicle List | User |  |
| UC-11 | View Vehicle Detail | User |  |
| UC-12 | Rent car | User |  |
| UC-13 | View Rent List | User |  |
| UC-14 | Cancel Rent | User |  |
| UC-15 | Refund | User |  |
| UC-16 | View schedule | User |  |
| UC-17 | Add Schedule | Teacher |  |
| UC-18 | Update Schedule | Teacher |  |
| UC-19 | Delete Schedule | Teacher |  |
| UC-20 | View Hire Request | Teacher |  |
| UC-21 | Disable User | Staff |  |
| UC-22 | Generate Quiz | Staff |  |
| UC-23 | Modify Quiz | Staff |  |
| UC-24 | Add Vehicle | Staff |  |
| UC-25 | Edit Vehicle Detail | Staff |  |
| UC-26 | Change Rent Status | Staff |  |
| UC-27 | Delete Account | Staff |  |
| UC-28 | Disable Account | Admin |  |
| UC-29 | Change Role | Admin |  |
| UC-30 | System configuration | Admin |  |

## 4.3 <Use Cases Specification>

## 4.3.1 Login

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **USE CASE LOGIN SPECIFICATION** | | | | |
| **Use-case No.** | UC-01 | **Use-case Version** | | <1.0> |
| **Use-case Name** | Login | | | |
| **Author** | PhucLNH | | | |
| **Date** | 23/10/2023 | **Priority** | High | |
| **Actor:**  *Guest*  **Summary:**  This feature allows actor to login the system  **Goal:**  Sign in the system  **Triggers**  The actor wants to sign in to the Learn2Drive website.  **Preconditions:**  Actor has a Google Account or a Account that has registered before  **Post Conditions:**  Success: Redirect to home page  Fail: The system shows error message corresponding to error code  **Main Success Scenario:**     |  |  | | --- | --- | | *Actor actions* | *System response* | | In sign in page, Actor inputs email and passwords | *N/A* | | Actor clicks “sign in” | System redirects to the home page |   **Alternative Scenario:**     |  |  | | --- | --- | | *Actor actions* | *System response* | |  |  |   **Exceptions:**  *-*The email or password is not correct format  -The email or password is not correct  **Relationships:**  N/A  **Business Rules:**   * Password is not empty and at least 8 characters * If an actor provides incorrect username & password 5 times, they will have to wait at least 5 mins until their next try. | | | | |

## 4.3.2 Register

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **USE CASE REGISTER SPECIFICATION** | | | | |
| **Use-case No.** | UC-02 | **Use-case Version** | | <1.0> |
| **Use-case Name** | Register | | | |
| **Author** | PhucLNH | | | |
| **Date** | 23/10/2023 | **Priority** | High | |
| **Actor:**  Guest  **Summary:**  This feature allows actor to create new account to become customer in the system  **Goal:**  Register new Account in Learn2Drive web  **Triggers**  The actor wants to register an account in Learn2Drive web  **Preconditions:**  Actor has an email that has been authorized before.  **Post Conditions:**  Success: Redirect to Login page with success notification  Fail: The system shows error message corresponding to error code  **Main Success Scenario:**     |  |  | | --- | --- | | Actor actions | System response | | In the sign in page, actor clicks “Sign Up” | System shows a form with these fields:  - Email: a text input, a string input must follow the email regex (XXX@YYY.ZZ).  - Password/Confirm password: two strings must be identical, not empty and at least 8 characters  - First name/Last name: two string are not empty  - Phone number: a string of numbers has 9-11 characters.. | | Actor inputs phone number, email,password, confirm password, fullname | N/A | | The actor clicks “Sign Up” | The system Send redirect to Login page and notification “Login Successful” |   **Alternative Scenario:**     |  |  | | --- | --- | | Actor Action | System response | |  |  |   **Exceptions:**   * Username already exist * Email is not existed * Password and repassword is not match * At least one input field doesn’t match the constraint   **Relationships:**  N/A  **Business Rules:**   * Activation code consists of 6 positive numbers and is valid in 10 minutes. * If actors input wrong activation code 5 times, their email/phone-number will be locked in 10 minutes | | | | |

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## 4.3.3 View Contact

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| --- | --- | --- | --- | --- |
| **USE CASE VIEW CONTACT SPECIFICATION** | | | | |
| **Use-case No.** | UC-03 | **Use-case Version** | | <1.0> |
| **Use-case Name** | View Contact | | | |
| **Author** | PhucLNH | | | |
| **Date** | 23/10/2023 | **Priority** | Normal | |
| **Actor:**  Guest  **Summary:**  This feature allows actors to view contact.  **Goal:**  Contact to Learn2Drive web  **Triggers**  The actor wants to view the list of contacts.  **Preconditions:**  N/A  **Post Conditions:**  Success: The system shows how to contact us.  **Main Success Scenario:**     |  |  | | --- | --- | | Actor actions | System response | | In home page, actor clicks on “Contact” button. | System shows a form with these fields: |   **Alternative Scenario:**     |  |  | | --- | --- | | Actor Action | System response | | N/A | N/A |   **Exceptions:**   * N/A   **Relationships:**  N/A  **Business Rules:**   * All information in the list must be clear and up-to-date.   **Assumptions:**   * Actor’s internet connection is available | | | | |

## 4.3.4 Read News

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **USE CASE READ NEWS SPECIFICATION** | | | | |
| **Use-case No.** | UC-04 | **Use-case Version** | | <1.0> |
| **Use-case Name** | Read News | | | |
| **Author** | PhucLNH | | | |
| **Date** | 23/10/2023 | **Priority** | Normal | |
| **Actor:**  Guest  **Summary:**  This feature allows actor to view news sorted by latest  **Goal:**  Register new Account in Learn2Drive web  **Triggers**  The actor wants to register an account in Learn2Drive web  **Preconditions:**  N/A  **Post Conditions:**  Success: The system shows lists news by latest date.  Fail: System informs “No data” .  **Main Success Scenario:**     |  |  | | --- | --- | | Actor actions | System response | | In home page, actor clicks on “News” button. | System shows the list of news. |   **Alternative Scenario:**     |  |  | | --- | --- | | Actor Action | System response | | N/A | N/A |   **Exceptions:**   * Result is empty.   **Relationships:**  N/A  **Business Rules:**   * The news must have a record in the storage and still be available. * All information in the list must be clear and up-to-date. * News that have been expired will be hidden. | | | | |

## 4.3.5 View Profile

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **USE CASE VIEW PROFILE SPECIFICATION** | | | | |
| **Use-case No.** | UC-05 | **Use-case Version** | | <1.0> |
| **Use-case Name** | Read new | | | |
| **Author** | PhucLNH | | | |
| **Date** | 23/10/2023 | **Priority** | High | |
| **Actor:**  User  **Summary:**  This feature allows the actor to view a detailed profile and some support services such as name, view payment card, view history button,...  **Goal:**  Register new Account in Learn2Drive web  **Triggers**  The actor wants to view their profile.  **Preconditions:**  The actor must login to their account as “User” role  **Post Conditions:**  Success: System shows the profile page  **Main Success Scenario:**     |  |  | | --- | --- | | Actor actions | System response | | In home page, actor clicks profile section | System redirects to the profile page showing:   * Name * Phone Number * View Rent card * Contact * Address |   **Alternative Scenario:**     |  |  | | --- | --- | | Actor Action | System response | | N/A | N/A |   **Exceptions:**   * N/A   **Relationships:**  N/A  **Business Rules:**   * N/A | | | | |

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## 4.3.6 Edit Profile

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **USE CASE EDIT PROFILE SPECIFICATION** | | | | |
| **Use-case No.** | UC-06 | **Use-case Version** | | <1.1> |
| **Use-case Name** | Edit profile | | | |
| **Author** | TungTS | | | |
| **Date** | 23/10/2023 | **Priority** | Medium | |
| **Actor:**  User  **Summary:**  This feature allows user edit them profile  **Goal:**  User edit profile successfully  **Triggers**  The user needs to sign in to the Learn2Drive website.  **Preconditions:**  The user has signed in to the Learn2Drive website.  **Post Conditions:**  Success: User edited success profile  Fail: The user not sign in     |  |  | | --- | --- | | Actor actions | System response | | In home page, user click in their username | N/A | | User change the information | System message “profile updated” |   **Alternative Scenario:**     |  |  | | --- | --- | | Actor actions | System response | |  |  |   **Exceptions:**   * The information entered is not valid   **Relationships:**  N/A  **Business Rules:**   * The information entered is not valid | | | | |

## 4.3.7 Exam Register

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **USE CASE EXAM REGISTER SPECIFICATION** | | | | |
| **Use-case No.** | UC-07 | **Use-case Version** | | <1.1> |
| **Use-case Name** | Exam Register | | | |
| **Author** | TungTS | | | |
| **Date** | 23/10/2023 | **Priority** | High | |
| **Actor:**  User  **Summary:**  This feature allows user register exam  **Goal:**  The users want to register exam  **Triggers**  The user needs to sign in to the Learn2Drive website  **Preconditions:**  The user has signed in to the Learn2Drive website  **Post Conditions:**  Success: User register exam  Fail: The test not found     |  |  | | --- | --- | | Actor actions | System response | | In home page, user click in the exam button | Redirect to exam page | | Click in the practice quiz | N/As | | Choose the type of license to do quiz | N/A |   **Alternative Scenario:**     |  |  | | --- | --- | | Actor actions | System response | |  |  |   **Exceptions:**  -The information entered is not valid  **Relationships:**  N/A  **Business Rules:**   * The information entered is not valid | | | | |

## 4.3.8 Attempt Practice Quiz

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **USE CASE ATTEMPT PRACTICE QUIZ SPECIFICATION** | | | | |
| **Use-case No.** | UC-08 | **Use-case Version** | | <1.1> |
| **Use-case Name** | Attempt Practice Quiz | | | |
| **Author** | TungTS | | | |
| **Date** | 23/10/2023 | **Priority** | High | |
| **Actor:**  User  **Summary:**  This feature allows user Attempt Practice Quiz  **Goal:**  User Practice Quiz successfully  **Triggers**  The user needs to sign in to the Learn2Drive website or they need to enter basic information  **Preconditions:**  The user has signed in to the Learn2Drive website or they needs to enter basic information  **Post Conditions:**  Success: User register exam  Fail: The test not found     |  |  | | --- | --- | | Actor actions | System response | | In home page, user click in the exam button | Redirect to register exam page | | Enter the type of license and other information | System message “register exam success” |   **Alternative Scenario:**     |  |  | | --- | --- | | Actor actions | System response | |  |  |   **Exceptions:**  -The information entered is not valid  **Relationships:**  N/A  **Business Rules:**   * The information entered is not valid | | | | |

## 4.3.9 View Document

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **USE CASE VIEW DOCUMENT SPECIFICATION** | | | | |
| **Use-case No.** | UC-09 | **Use-case Version** | | <1.1> |
| **Use-case Name** | View Document | | | |
| **Author** | TungTS | | | |
| **Date** | 23/10/2023 | **Priority** | High | |
| **Actor:**  User  **Summary:**  This feature allows user View Document  **Goal:**  User View Document successfully  **Triggers**  N/A  **Preconditions:**  N/A  **Post Conditions:**  Success: User View Document about information of the website  Fail: The page not found     |  |  | | --- | --- | | Actor actions | System response | | In home page, user click in the about us button | Redirect to information page |   **Alternative Scenario:**     |  |  | | --- | --- | | Actor actions | System response | |  |  |   **Exceptions:**  -The page not found  **Relationships:**  N/A  **Business Rules:**   * The page not found | | | | |

## 4.3.10 View Vehicle List

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **USE CASE VIEW VEHICLE LIST SPECIFICATION** | | | | |
| **Use-case No.** | UC-10 | **Use-case Version** | | <1.1> |
| **Use-case Name** | View Vehicle List | | | |
| **Author** | TungTS | | | |
| **Date** | 23/10/2023 | **Priority** | High | |
| **Actor:**  User  **Summary:**  This feature allows actors to view vehicles sorted by latest.  **Goal:**  User View Vehicle successfully  **Triggers**   * The actor wants to view the list of vehicles.   **Preconditions:**  N/A  **Post Conditions:**  Success: User View Document about information of the website  Fail: The page not found     |  |  | | --- | --- | | Actor actions | System response | | In home page, Actor click in “Rent” in nav-bar | System shows the list of vehicles. |   **Alternative Scenario:**     |  |  | | --- | --- | | Actor actions | System response | | N/A | N/A |   **Exceptions:**  -Result is empty.  **Relationships:**  N/A  **Business Rules:**   * The vehicles must have a record in the storage and still be available. * All information in the list must be clear and up-to-date. * Vehicles that have been expired will be hidden. | | | | |

## 4.3.11 View Vehicle Detail

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **USE CASE VIEW VEHICLE DETAIL SPECIFICATION** | | | | |
| **Use-case No.** | UC-11 | **Use-case Version** | | <1.1> |
| **Use-case Name** | View Vehicle Detail | | | |
| **Author** | MinhTT | | | |
| **Date** | 23/10/2023 | **Priority** | Medium | |
| **Actor:**  User  **Summary:**  This feature allows user hire lecture  **Goal:**  User hire lecture successfully  **Triggers**  The actor wants to view the vehicle in detail after choosing that vehicle.  **Preconditions:**  N/A  **Post Conditions:**  Success: The System shows the details of food such as name, price, manufacturer, …     |  |  | | --- | --- | | Actor actions | System response | | After the actor clicks on the picture of vehicle or name button. | Redirect to the vehicle detail information page. The website shows vehicle detail information such as:   * Name * Price * Address * Description * Available * Type * …   And below page shows “Rent now” button |   **Alternative Scenario:**     |  |  | | --- | --- | | Actor actions | System response | |  |  |   **Exceptions:**  N/A  **Relationships:**  N/A  **Business Rules:**   * All vehicles in the list must be available and up-to-date. | | | | |

## 4.3.12 Rent Car

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **USE CASE RENT CAR SPECIFICATION** | | | | |
| **Use-case No.** | UC-12 | **Use-case Version** | | <1.1> |
| **Use-case Name** | Exam Register | | | |
| **Author** | MinhTT | | | |
| **Date** | 23/10/2023 | **Priority** | High | |
| **Actor:**  User  **Summary:**  This feature allows user register exam  **Goal:**  User register exam successfully  **Triggers**  The actor wants to rent a vehicle.  **Preconditions:**  Actors must sign in as “User”.  Actors should be viewing details of a vehicle.  **Post Conditions:**  Success: System saves the vehicle to the Rental history and returns to the home page.  Fail: System shows message “The Car is not available”.     |  |  | | --- | --- | | Actor actions | System response | | In home page, actor clicks on a Rent button | System redirects to the vehicle detail page | | In the food detail page, actor choose start date and end date | System check the available and price of vehicle then show this price to the monitor | | In the vehicle Detail page actor click on “Rent now” | System saves this vehicle to the Rental History. |   **Alternative Scenario:**     |  |  | | --- | --- | | Actor actions | System response | |  |  |   **Exceptions:**   * The start date is greater than end date   **Relationships:**  N/A  **Business Rules:**   * The vehicle must be available. | | | | |

## 4.3.13 View Rent List

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **USE CASE VIEW RENT LIST SPECIFICATION** | | | | |
| **Use-case No.** | UC-13 | **Use-case Version** | | <1.1> |
| **Use-case Name** | View Rent List | | | |
| **Author** | MinhTT | | | |
| **Date** | 23/10/2023 | **Priority** | High | |
| **Actor:**  User  **Summary:**  This feature allows user Attempt Practice Quiz  **Goal:**  This feature allows actors to view what vehicle they have chosen to buy by their name, price, time,...  **Triggers**  The actor must login to their account as “User” role  **Preconditions:**  The user has signed in to the Learn2Drive website or they needs to enter basic information  **Post Conditions:**  Success: System shows the list with some vehicles cards  Fail: The system shows the message “You haven’t picked anything!”     |  |  | | --- | --- | | Actor actions | System response | | In home page, Actor clicks “User” section | Redirect to the User’s page | | click the Rental car | System redirects to the rent section and shows some vehicle that has been picked. |   **Alternative Scenario:**     |  |  | | --- | --- | | Actor actions | System response | |  |  |   **Exceptions:**  -There is no vehicle that has been picked  **Relationships:**  N/A  **Business Rules:**   * System must show status of the Rent | | | | |

## 4.3.14 Cancel Rent

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **USE CASE CANCEL RENT SPECIFICATION** | | | | |
| **Use-case No.** | UC-14 | **Use-case Version** | | <1.1> |
| **Use-case Name** | Cancel Rent | | | |
| **Author** | MinhTT | | | |
| **Date** | 23/10/2023 | **Priority** | High | |
| **Actor:**  The actor wants to remove Rent from Rental history  **Summary:**  This feature allows actor to remove the Rent that they have chosen to pay from Rental history  **Goal:**  User Remove rent successful  **Triggers**  The actor wants to remove Rent from Rental history  **Preconditions:**  Actor has signed in as “User” and has picked some rent  **Post Conditions:**  Success: The Rent is removed from the cart.     |  |  | | --- | --- | | Actor actions | System response | | In home page, Actor clicks “User” section | Redirect to User page | | Actor clicks “Rental car” | System redirects to the rent section and shows some vehicle that has been picked. | | Actor clicks the “X” button of rent | The rent card is removed from the Rental History. |   **Alternative Scenario:**     |  |  | | --- | --- | | Actor actions | System response | | In home page, Actor clicks “Rental History” section | System redirects to the rental history section and shows some vehicle cards that have been picked and a “check out” button. | | Actor clicks the trash icon button | System shows the message “Are you sure to remove all rent in the cart? Y/N” | | Actor clicks “Yes” | System removes all rent cards in the cart. |   **Exceptions:**  N/A  **Relationships:**  N/A  **Business Rules:**  N/A | | | | |

## 

## 

## 4.3.15 Refund

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **USE CASE REFUND SPECIFICATION** | | | | |
| **Use-case No.** | UC-15 | **Use-case Version** | | <1.1> |
| **Use-case Name** | Edit profile | | | |
| **Author** | MinhTT | | | |
| **Date** | 23/10/2023 | **Priority** | Medium | |
| **Actor:**  User  **Summary:**  To request a refund for a rental car reservation due to unforeseen circumstances or unsatisfactory service.  **Goal:**  User edit profile successfully  **Triggers**  The actor wants to refund a paid rent  **Preconditions:**  The actor login to Learn2Drive as User   * The actor has checked out, paid for rent and done the service. * The rent has “paid” status.   **Post Conditions:**  Success: The system displays shows message “Your rent has been refund successfully”  Fail: System shows message “The message has not been canceled”     |  |  | | --- | --- | | Actor actions | System response | | In home page, actor clicks on profile section | System redirects to profile page containing view history action. | | Actor clicks “View Order” button | System redirects history page showing a list of created order sorted by date from nearest | | Actor clicks on “Refund” button of an order card | System shows a message: “Would you like a refund for this order ? Y/N” | | Actor clicks “Yes” | The systems shows the tab Reason for Refund | | Actor choose or enter the reason | waiting for System accept |   **Alternative Scenario:**     |  |  | | --- | --- | | Actor actions | System response | | In home page, actor clicks on profile section | System redirects to the rental section and shows some vehicle card that has been picked and a “check out” button. | | Actor clicks the trash icon button | System shows the message “Are you sure to remove all rent in the cart? Y/N” | | Actor clicks “Yes” | System removes all rent cards in the rental history. |   **Exceptions:**  -The information entered is not valid  **Relationships:**  N/A  **Business Rules:**   * The order has been paid within 24 hours. * The service must be intact. | | | | |

## 4.3.16 View Schedule

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **USE CASE VIEW SCHEDULE SPECIFICATION** | | | | |
| **Use-case No.** | UC-15 | **Use-case Version** | | <1.1> |
| **Use-case Name** | Edit profile | | | |
| **Author** | MinhTT | | | |
| **Date** | 23/10/2023 | **Priority** | Medium | |
| **Actor:**  User  **Summary:**  To request a refund for a rental car reservation due to unforeseen circumstances or unsatisfactory service.  **Goal:**  User edit profile successfully  **Triggers**  The actor wants to refund a paid rent  **Preconditions:**  The actor login to Learn2Drive as User   * The actor has checked out, paid for rent and done the service. * The rent has “paid” status.   **Post Conditions:**  Success: The system displays shows message “Your rent has been refund successfully”  Fail: System shows message “The message has not been canceled”     |  |  | | --- | --- | | Actor actions | System response | | In home page, actor clicks on profile section | System redirects to profile page containing view history action. | | Actor clicks “View Order” button | System redirects history page showing a list of created order sorted by date from nearest | | Actor clicks on “Refund” button of an order card | System shows a message: “Would you like a refund for this order ? Y/N” | | Actor clicks “Yes” | The systems shows the tab Reason for Refund | | Actor choose or enter the reason | waiting for System accept |   **Alternative Scenario:**     |  |  | | --- | --- | | Actor actions | System response | | In home page, actor clicks on profile section | System redirects to the rental section and shows some vehicle card that has been picked and a “check out” button. | | Actor clicks the trash icon button | System shows the message “Are you sure to remove all rent in the cart? Y/N” | | Actor clicks “Yes” | System removes all rent cards in the rental history. |   **Exceptions:**  -The information entered is not valid  **Relationships:**  N/A  **Business Rules:**   * The order has been paid within 24 hours. * The service must be intact. | | | | |

## 4.3.17 Add Schedule

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **USE CASE ADD SCHEDULE SPECIFICATION** | | | | |
| **Use-case No.** | UC-017 | **Use-case Version** | | <1.1> |
| **Use-case Name** | Add Schedule | | | |
| **Author** | MinhTT | | | |
| **Date** | 23/10/2023 | **Priority** | High | |
| **Actor:**  Teacher  **Summary:**  This feature allows teacher add new schedule  **Goal:**  Teacher add new schedule successfully  **Triggers**  The teacher want to add new schedule  **Preconditions:**  The teacher has signed in to the Learn2Drive website  **Post Conditions:**  Success: add new schedule successfully  Fail: Add new schedule fail     |  |  | | --- | --- | | Actor actions | System response | | In home page, teacher click in view schedule | Redirect to teacher schedule | | Click in the add new schedule | Information needs to add | | After input day, time | Add successfully |   **Alternative Scenario:**     |  |  | | --- | --- | | Actor actions | System response | |  |  |   **Exceptions:**  -The information entered is not valid  **Relationships:**  N/A  **Business Rules:**   * The information entered is not valid | | | | |

## 4.3.18 Update Schedule

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **USE CASE UPDATE SCHEDULE SPECIFICATION** | | | | |
| **Use-case No.** | UC-018 | **Use-case Version** | | <1.1> |
| **Use-case Name** | Update schedule | | | |
| **Author** | TungTS | | | |
| **Date** | 23/10/2023 | **Priority** | High | |
| **Actor:**  Teacher  **Summary:**  This feature allows teacher to update schedule  **Goal:**  The teacher want to update schedule  **Triggers**  The teacher want to update schedule  **Preconditions:**  The teacher has signed in to the Learn2Drive website  **Post Conditions:**  Success: update schedule successfully  Fail:update schedule fail     |  |  | | --- | --- | | Actor actions | System response | | In home page, teacher click in view schedule | Redirect to teacher schedule | | Click in the schedule | Information | | Enter the new information | Updated |   **Alternative Scenario:**     |  |  | | --- | --- | | Actor actions | System response | |  |  |   **Exceptions:**  -The information entered is not valid  **Relationships:**  N/A  **Business Rules:**   * The information entered is not valid | | | | |

## 4.3.19 Delete Schedule

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **USE CASE DELETE SCHEDULE SPECIFICATION** | | | | |
| **Use-case No.** | UC-19 | **Use-case Version** | | <1.1> |
| **Use-case Name** | Delete Schedule | | | |
| **Author** | TungTS | | | |
| **Date** | 23/10/2023 | **Priority** | High | |
| **Actor:**  Teacher  **Summary:**  This feature allows teacher delete schedule  **Goal:**  Teacher delete schedule successfully  **Triggers**  The teacher want to delete schedule  **Preconditions:**  Teacher needs to login in the website  **Post Conditions:**  Success: delete schedule successfully  Fail: delete schedule fail     |  |  | | --- | --- | | Actor actions | System response | | In home page, teacher click in view schedule | Redirect to teacher schedule | | Click in the schedule | Information | | Click in the delete schedule button | Deleted |   **Alternative Scenario:**     |  |  | | --- | --- | | Actor actions | System response | |  |  |   **Exceptions:**  -The page not found  **Relationships:**  N/A  **Business Rules:**   * The page not found | | | | |

## 4.3.20 View Hire Request

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **USE CASE VIEW HIRE REQUEST SPECIFICATION** | | | | |
| **Use-case No.** | UC-20 | **Use-case Version** | | <1.1> |
| **Use-case Name** | View Hire Request | | | |
| **Author** | TungTS | | | |
| **Date** | 23/10/2023 | **Priority** | High | |
| **Actor:**  Teacher  **Summary:**  This feature allows teacher view hire request  **Goal:**  Teacher view hire request successfully  **Triggers**  The teacher want to view hire request  **Preconditions:**  Teacher needs to login in the website  **Post Conditions:**  Success:view hire request successfully  Fail: the view request page error     |  |  | | --- | --- | | Actor actions | System response | | In home page, teacher click in view their profile | Redirect to profile page | | Click in view hire request | Redirect to view hire request page | | In view hire page, teacher can accept or decline the hire request | N/A |   **Alternative Scenario:**     |  |  | | --- | --- | | Actor actions | System response | |  |  |   **Exceptions:**  -The page not found  **Relationships:**  N/A  **Business Rules:**   * The page not found | | | | |

## 4.3.21 Disable User

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **USE CASE DISABLE USER SPECIFICATION** | | | | |
| **Use-case No.** | UC-22 | **Use-case Version** | | <1.1> |
| **Use-case Name** | Disable User | | | |
| **Author** | ThanhNC | | | |
| **Date** | 23/10/2023 | **Priority** | Medium | |
| **Actor:**  Staff  **Summary:**  This feature allows user edit them profile  **Goal:**  To disable a user account within a L2D web.  **Triggers**  The actor wants to Restrict user access  **Preconditions:**   * The actor login as Staff role * The system has user account active   **Post Conditions:**  The user account is disabled, preventing the user from accessing the system or application.  The disabled user's data and account information are retained, but access is restricted.     |  |  | | --- | --- | | Actor actions | System response | | In home page, Actor click in Manage User | Redirect to Manage User Page | | Actor choose an user need to disable | N/A | | Actor click disable in User card | System shows notify ”Are you sure to disable this user? Y/N” | | Actor click Yes | User is disabled successful |   **Alternative Scenario:**     |  |  | | --- | --- | | Actor actions | System response | | In home page, Actor click in Manage User | Redirect to Manage User Page | | Actor choose list user need to disable | N/A | | Actor click disable in menu card | System shows notify ”Are you sure to disable these users? Y/N” | | Actor click Yes | Users is disabled successful |   **Exceptions:**   * The system or application encounters errors during the disable process   **Relationships:**  N/A  **Business Rules:**   * N/A | | | | |

## 4.3.22 Generate Quiz

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **USE CASE GENERATE QUIZ SPECIFICATION** | | | | |
| **Use-case No.** | UC-07 | **Use-case Version** | | <1.1> |
| **Use-case Name** | Generate Quiz | | | |
| **Author** | ThanhNC | | | |
| **Date** | 23/10/2023 | **Priority** | High | |
| **Actor:**  Staff  **Summary:**  This feature allows Actor to Create new license Quiz  **Goal:**  The Actor wants to create a new license quiz in the learning management system or quiz platform.  **Triggers**  The actor wants to generate new quiz to quiz management platform.  **Preconditions:**  Actors must sign in as “Staff” role.  The system has a predefined set of quiz templates or allows the admin to create custom quizzes.  **Post Conditions:**  Success: System saves the Quiz to the Quiz list and returns to the Dashboard.  Fail: System shows message “Generate Quiz fail.”     |  |  | | --- | --- | | Actor actions | System response | | In Dashboard, actor click in the Quiz management button | Redirect to Quiz management platform | | Click in the “create new quiz” | Show configuration tab include:   * Question no * random or select * license * ….. | | Configure the quiz detail then click generate | Redirect to Dashboard with message “create quiz successful” |   **Alternative Scenario:**     |  |  | | --- | --- | | Actor actions | System response | |  |  |   **Exceptions:**  -N/A  **Relationships:**  N/A  **Business Rules:**   * The information entered is not valid | | | | |

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## 4.3.23 Modify Quiz

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **USE CASE MODIFY QUIZ SPECIFICATION** | | | | |
| **Use-case No.** | UC-10 | **Use-case Version** | | <1.1> |
| **Use-case Name** | Modify Quiz | | | |
| **Author** | ThanhNC | | | |
| **Date** | 23/10/2023 | **Priority** | High | |
| **Actor:**  Staff  **Summary:**  This feature allows staff to modify exist quiz  **Goal:**  Modify existing quiz within a learning management system or quiz platform  **Triggers**  The actor wants to make modifications to an existing quiz within the learning management system or quiz platform.  **Preconditions:**  Actors must sign in as “Staff” role.  The system has a predefined set of quiz templates or allows the actor to edit quizzes.  **Post Conditions:**  The modified quiz is updated in the system and reflects the changes made by the actor.  Users assigned to the modified quiz will see the updated version when accessing it.     |  |  | | --- | --- | | Actor actions | System response | | In Dashboard, actor click in the quiz management | Redirect to quiz management platform | | Actor Select Quiz for Modification | System show the quiz that actor choose | | Actor choose “Edit quiz detail” button | The system provides options to edit various aspects of the quiz, including the quiz title, description, and instructions for quiz takers. | | Actor click in “Save” button | Redirect to Dashboard with message “modify quiz successful” |   **Alternative Scenario:**     |  |  | | --- | --- | | Actor actions | System response | |  |  |   **Exceptions:**  -Save error  **Relationships:**  N/A  **Business Rules:**  N/A | | | | |

## 4.3.24 Add Vehicle

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **USE CASE ADD VEHICLE SPECIFICATION** | | | | |
| **Use-case No.** | UC-24 | **Use-case Version** | | <1.1> |
| **Use-case Name** | Add Vehicle | | | |
| **Author** | ThanhNC | | | |
| **Date** | 23/10/2023 | **Priority** | Medium | |
| **Actor:**  Staff  **Summary:**  Add new Vehicle in Rent page  **Goal:**  The goal of this use case is to allow users to add a new vehicle to the system's database.  **Triggers**  The Actor want to add new Vehicle for Rental  **Preconditions:**  The user must be login with “Staff” role  The system is operational and the database is accessible.  **Post Conditions:**  Success: A new vehicle record is added to the system's database.  The user receives a confirmation of the successful addition of the vehicle.  Fail: The System show “Add vehicle fail”     |  |  | | --- | --- | | Actor actions | System response | | In Dashboard Actor click in “Manage Vehicle” button | System shows Vehicle list | | Actor click in “Add new Vehicle” button | System show input of vehicle:   * Name * Year * price * status * description * ….. | | Actor provide information and click “Add” | The system generates a success message, confirming the addition of the new vehicle. |   **Alternative Scenario:**     |  |  | | --- | --- | | Actor actions | System response | | If the provided information is not valid or incomplete | the system displays error messages and prompts the user to correct the data |   **Exceptions:**  -The information entered is not valid  **Relationships:**  N/A  **Business Rules:**   * Only authenticated and authorized users can add new vehicles. * Vehicle information should adhere to a predefined format and data validation rules. | | | | |

## 4.3.25 Edit Vehicle Detail

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **USE CASE EDIT VEHICLE DETAIL SPECIFICATION** | | | | |
| **Use-case No.** | UC-07 | **Use-case Version** | | <1.1> |
| **Use-case Name** | Exam Register | | | |
| **Author** | ThanhNC | | | |
| **Date** | 23/10/2023 | **Priority** | High | |
| **Actor:**  Staff  **Summary:**  The goal of this use case is to allow Staff to modify the details of an existing vehicle in the system.  **Goal:**  Modify Vehicle Detail exist in system  **Triggers**  The Actor want to modify Vehicle Detail  **Preconditions:**  The Actor must be login with “Staff” role  The system is operational, and the vehicle whose details need to be edited must exist in the database.  **Post Conditions:**  Success: The user must be authenticated and have the necessary permissions to edit vehicle details.The system is operational, and the vehicle whose details need to be edited must exist in the database.  Fail: System show ”Invalid input”     |  |  | | --- | --- | | Actor actions | System response | | In Dashboard Actor click in “Manage Vehicle” button | System shows Vehicle list | | Actor click in “Edit Vehicle” button | System show input of vehicle:   * Name * Year * price * status * description * ….. | | Actor provide information and click “Save” | The system generates a success message, confirming the Updating of the vehicle. |   **Alternative Scenario:**     |  |  | | --- | --- | | Actor actions | System response | | If the provided information is not valid or incomplete | the system displays error messages and prompts the user to correct the data |   **Exceptions:**  -The information entered is not valid  **Relationships:**  N/A  **Business Rules:**   * Only authenticated and authorized users can add new vehicles. * Vehicle information should adhere to a predefined format and data validation rules. | | | | |

## 4.3.26 Change Rent Status

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **USE CASE CHANGE RENT STATUS SPECIFICATION** | | | | |
| **Use-case No.** | UC-08 | **Use-case Version** | | <1.1> |
| **Use-case Name** | Attempt Practice Quiz | | | |
| **Author** | HoangPH | | | |
| **Date** | 23/10/2023 | **Priority** | High | |
| **Actor:**  Staff  **Summary:**  This feature allow Actor to change the rent status of a vehicle in the rental management system  **Goal:**  Change the rent status  **Triggers**  The Actor want to change Rent status  **Preconditions:**  The Actor must be login with “Staff” role   * The vehicle whose rent status is to be changed must exist in the system's database.   **Post Conditions:**  Success: The rent status of the vehicle is updated in the system's database (e.g., marked as available or unavailable).   * The user receives a confirmation of the successful status change.   Fail: The system show “Change status fail”     |  |  | | --- | --- | | Actor actions | System response | | In the Dashboard, the Actor navigates to the "Manage Rent" section. | Rent List is display | | Actor choose a Rent need to change status | N/A | | Actor change status of Rent | N/A | | The Actor click in “Save” | The system generates a success message, confirming the Updating of the vehicle. |   **Alternative Scenario:**     |  |  | | --- | --- | | Actor actions | System response | |  |  |   **Exceptions:**  -N/A  **Relationships:**  N/A  **Business Rules:**   * The system should maintain a log of rent status changes, recording who made the change and when for auditing and reporting purposes. | | | | |

## 4.3.27 Delete Account

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **USE CASE DELETE ACCOUNT SPECIFICATION** | | | | |
| **Use-case No.** | UC-27 | **Use-case Version** | | <1.1> |
| **Use-case Name** | Delete Account | | | |
| **Author** | HoangPH | | | |
| **Date** | 23/10/2023 | **Priority** | Medium | |
| **Actor:**  Admin  **Summary:**  This feature allows an administrator to delete a user account in the system.  **Goal:**   * Remove a user account of every role   **Triggers**  The actor want to remove an account in systems  **Preconditions:**  Actor login into an App with an account has an Admin role.  **Post Conditions:**  Success: System displays a message “Delete successfully !”.     |  |  | | --- | --- | | Actor actions | System response | | In Dashboard, actor click in “Users” | System show User List | | Actor choose an user | The Delete button will appear | | Actor click in Delete button | System shows a message is “Are you sure remove this user? Y/N” | | Actor Enter Yes | System shows a message is “Remove User success!” and remove this User in the system. |   **Alternative Scenario:**     |  |  | | --- | --- | | Actor actions | System response | | In User list page, actor inputs keyword to search textbox | System shows a list of sale tasks containing the keyword | | In sale tasks list, actor clicks the button in the Action column at the row that the actor wants to delete | System shows options :  - Delete | | Actor clicks “Delete” | System shows a message is “Are you sure remove this user? Y/N” | | Actor Enter Yes | System shows a message is “Remove User success!” and remove this User in the system. |   **Exceptions:**  -N/A  **Relationships:**  N/A  **Business Rules:**   * Account deletion should be a carefully considered action, and administrators should be prompted to confirm their intention to prevent accidental deletions. | | | | |

## 4.3.28 Disable Account

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **USE CASE DISABLE ACCOUNT SPECIFICATION** | | | | |
| **Use-case No.** | UC-28 | **Use-case Version** | | <1.1> |
| **Use-case Name** | Disable Account | | | |
| **Author** | HoangPH | | | |
| **Date** | 23/10/2023 | **Priority** | High | |
| **Actor:**  Admin  **Summary:**  allow Actor to disable a user account in the system  **Goal:**  Disable User of all role in the system  **Triggers**  The Actor want to Disable an account in the system  **Preconditions:**  The Actor must login with “Admin” role  The user account to be disabled must exist in the system.  **Post Conditions:**  Success: The user account is temporarily or permanently disabled, depending on the chosen option.   * The disabled user account should not be able to access the system.   Fail: The system show ”Disable account fail”     |  |  | | --- | --- | | Actor actions | System response | | In Dashboard, actor click in “Users” | System show User List | | Actor choose an user | The Disable button will appear | | Actor click in “Disable” button | System shows a message is “Are you sure Disable this user? Y/N” | | Actor Enter Yes | System shows a message is “Disable User success!” |   **Alternative Scenario:**     |  |  | | --- | --- | | Actor actions | System response | |  |  |   **Exceptions:**  -N/A  **Relationships:**  N/A  **Business Rules:**   * Account disabling should be reversible, especially in the case of temporary disabling, allowing the user to regain access later. | | | | |

## 4.3.29 Change Role

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **USE CASE CHANGE ROLE SPECIFICATION** | | | | |
| **Use-case No.** | UC-29 | **Use-case Version** | | <1.1> |
| **Use-case Name** | Change Role | | | |
| **Author** | HoangPH | | | |
| **Date** | 23/10/2023 | **Priority** | High | |
| **Actor:**  Admin  **Summary:**  This feature allows Actor change role of account  **Goal:**  Change role of every account  **Triggers**  The actor want to change role of account  **Preconditions:**  Actor must login with “Admin” role  The user account that needs to change role must exist in the system.  **Post Conditions:**  Success: The user's role is updated to the new role specified by the administrator.  The user's permissions and access levels are adjusted according to the new role.  Fail: System shows “Change role fail”     |  |  | | --- | --- | | Actor actions | System response | | In Dashboard actor navigate to “User manage” | System show the User list | | Actor choose an account | Change role option will appear | | The actor selects the new role for the account. | The system updates the user's role and adjusts their permissions and access levels accordingly. |   **Alternative Scenario:**     |  |  | | --- | --- | | Actor actions | System response | |  |  |   **Exceptions:**  -N/A  **Relationships:**  N/A  **Business Rules:**   * Role changes may impact the user's permissions, access, and functionality within the system, and the user should be made aware of these changes. | | | | |

## 4.3.30 System Configuration

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **USE CASE SYSTEM CONFIGURATION SPECIFICATION** | | | | |
| **Use-case No.** | UC-08 | **Use-case Version** | | <1.1> |
| **Use-case Name** | Attempt Practice Quiz | | | |
| **Author** | HoangPH | | | |
| **Date** | 23/10/2023 | **Priority** | High | |
| **Actor:**  Admin  **Summary:**  This feature enables Actor to configure system settings to tailor the system's behavior to specific needs.  **Goal:**  Configure system  **Triggers**  The actor want to configure system settings to tailor the system’s behavior specific needs  **Preconditions:**  The actor must login with “Admin” role  The system must be operational and accessible.  **Post Conditions:**  Success: The system settings and configurations are updated based on the changes made by the authorized user.  Fail: The configuration fail     |  |  | | --- | --- | | Actor actions | System response | | In Dashboard actor navigate to “System configuration” section | The system displays the current configuration values and options available for modification. | | The actor selects the specific configuration category or settings they want to modify (e.g., security settings, email notifications, database connections) | .The system validates the changes and ensures they are within predefined bounds and rules.the system updates the configuration settings accordingly. |   **Alternative Scenario:**     |  |  | | --- | --- | | Actor actions | System response | |  |  |   **Exceptions:**  -The information entered is not valid  **Relationships:**  N/A  **Business Rules:**   * The information entered is not valid | | | | |

# 5. NON-FUNCTIONAL Requirements

## 5.1 Usability

* The website should be easy to use and navigate, even for users with limited technical experience.
* The website should have a clear and intuitive user interface.
* The website should be well-organized and easy to find what you are looking for.
* The website should be responsive and provide feedback to user actions.
* The website should be accessible to all users, including those with disabilities.
* The user should be able to log in to the website within 5 seconds.
* The user should be able to find a practice test within 10 seconds.
* The user should be able to complete a practice test within 30 minutes.

## 5.2 Reliability

Availability: The website should be available 99.9% of the time. This means that the website should be running when multiple users access at the same time.

MTBF: The website should have a Mean Time Between Failures (MTBF) of at least 1000 hours. This means that the website should not fail more than once every 1000 hours of operation.

MTTR: The website should have a Mean Time To Repair (MTTR) of no more than 4 hours. This means that the website should be repaired and back in operation within 4 hours of a failure.

Accuracy: The website should accurately calculate user scores and generate feedback. The website should also accurately track user progress and generate study plans.

Maximum Bugs or Defect Rate: The website should have a maximum bug or defect rate of 0.1 bugs per thousand lines of code (KLOC). This means that the website should have no more than 0.1 bugs per 1000 lines of code.

Bugs or Defect Rate Categorization: The website should have no critical bugs. A critical bug is defined as a bug that prevents the website from functioning or that causes the website to lose data.

## 5.3 Performance

* Average Transaction Response Time: The system should strive to maintain an average transaction response time of 2 seconds or less for the majority of use cases. Specific use cases to consider include: User Registration, view driving license information, The User take license test, Payments in bulk,...
* Maximum Transaction Response Time: The system should ensure that the maximum transaction response time does not exceed 5 seconds for all use cases. This includes scenarios with peak load.
* Throughput: The system should be capable of handling a minimum of 100 transactions per second under normal operating conditions. This includes various transactions like new license applications, renewals, and queries.

- Capacity:

* License Test: The system should be capable of handling at least 10,000 concurrent users taking the license test. It should accommodate storing the test results and progress of a minimum of 100,000 users.
* Car Rental: The system should be designed to handle a minimum of 1,000 car rental reservations simultaneously. The database should store reservation records for at least 10,000 users.
* Degradation modes: Prioritize in-progress license tests and reservations over new requests.Provide a user-friendly maintenance page during scheduled maintenance or emergencies.
* Resource utilization:
* Memory: The system should optimize memory usage, striving to keep memory consumption below 4GB under normal conditions.
* Disk: The database should manage disk space efficiently, with data compression and archiving mechanisms to maintain optimal disk utilization, ensuring it does not exceed 80% capacity.
* Communications: Monitor and manage network traffic efficiently, aiming for a maximum utilization of 70% of available bandwidth.

## 5.4 Supportability

Coding standards: Use a consistent coding style and naming conventions to make the code easier to read and maintain.

Class libraries: Use pre-built class libraries whenever possible to reduce the amount of code that needs to be written and maintained.

Maintenance access: Provide easy access for maintenance personnel to troubleshoot and fix problems with the website.

Maintenance utilities: Provide utilities to help maintenance personnel with common tasks, such as backing up and restoring data, and migrating to new versions of the website.

## 5.5 Design Constraints

Software languages: The website may need to be developed using specific programming languages, such as Java, C#, or PHP.

Software process requirements: The website may need to be developed using a specific software development process, such as Agile or Waterfall.

Developmental tools: The website may need to be developed using specific development tools, such as a particular IDE or web server.

Architectural and design constraints: The website may need to be designed using a specific architecture or design pattern.

Purchased components: The website may need to use purchased components, such as a commercial class library or content management system.

Existing systems: The website may need to integrate with existing systems, such as a driver's license database or a learning management system.

Target audience: The website must be designed to be accessible to the target audience, which may include people with disabilities.

Budget and schedule: The website must be developed within the allocated budget and schedule.

## 5.6 On-line User Documentation and Help System Requirements

* User-Friendly On-line User Documentation: The system must provide a user-friendly, on-line user documentation system for users, offering guidance and information on all aspects of the application.
* Help systems: Systems should be available to provide assistance to users based on their current actions or locations within the application. For example, when a user is taking a license test or making a car rental reservation, relevant help should be easily accessible.
* Help about notices: The application must include "Help About" notices that provide information about the application version, copyright details, and contact information for technical support.
* Multiple Languages: If the application caters to a diverse user base, provide the on-line user documentation in multiple languages to ensure accessibility to a global audience.
* Responsive Design: The on-line user documentation must have a responsive design, making it compatible with various devices and screen sizes, including desktop computers, tablets, and mobile phones.

## 5.7 Purchased Components

* To improve its operation, the Driving License Web System may combine different paid components or third-party services. These elements may include:
* Licensing Testing Software: A third-party software package or service that is used to administer licensing tests, score them, and provide results.
* Car rental Reservation Service: Integration of third-party automobile rental booking and management services into the system.
* Licensing and Usage Restrictions: All purchased components and third-party services must adhere to applicable licensing agreements and usage restrictions.
* Compatibility and Interoperability: The Driving License Web System must ensure compatibility and interoperability with essential purchased components:
* License Testing Software Compatibility: The system must align with the specific version and API prerequisites of the license testing software. This involves seamless data exchange for test results and progress monitoring.
* Car Rental Reservation Service Compatibility: Compatibility is imperative to facilitate efficient data interchange between the web application and the car rental reservation service, facilitating car rental bookings and management.

## 5.8 Interfaces

### User Interfaces

The Driving License Web System may require some interfaces to interact with various systems and devices. These interfaces facilitate data exchange and connectivity with different components of the system. Here are the interfaces to be considered:

User Interfaces:

* User Dashboard Interface:
  + Specificity: The Dashboard shall include features like profile management, license test progress tracking, car rental reservation management, and easy navigation to other system sections.
* License Test Interface:
  + Specificity: The interface should incorporate a question display area, answer submission functionality, and results display upon completion.
* Car Rental Reservation Interface:
  + Specificity: The interface should enable car browsing, filtering, date selection, and a reservation confirmation process.
* Help and Documentation Interface:
  + Specificity: The interface should feature a searchable knowledge base, context-sensitive help, and a clear navigation structure.

### Hardware Interfaces

Hardware Interfaces:

* Any web browsers available now: Chrome, Firefox, Coc Coc, Ie.
* Internet
* Device that can connect website

### Software Interfaces

Software Interfaces:

|  |  |
| --- | --- |
| **Software Used** | **Description** |
| OS | Any OS available now |
| Javascript, HTML, CSS | Build front-end |
| ASP.NET, web API | Build backend |

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### Communications Interfaces

Communications Interfaces:

* Local Area Network (LAN):
* Description: The system shall support communication within a local area network to interact with internal components, such as application servers, database servers, and other networked devices.
* Specifics: Detail the LAN architecture, including IP address ranges, subnet masks, and network topology if applicable. Mention any specific LAN protocols, such as TCP/IP or Ethernet.
* Internet Connectivity:
* Description: The system should establish a secure communication interface with the internet to serve web-based content to users, enable license testing, and manage car rental reservations.
* Specifics: Specify the internet connection type (e.g., broadband, Wi-Fi), any firewall rules or NAT configurations, and the use of standard internet protocols like HTTP, HTTPS, or FTP.
* Database Connectivity:
* Description: To interact with the database servers, the system must support communication through specific database connectivity protocols, such as JDBC (Java Database Connectivity) or ODBC (Open Database Connectivity).
* Specifics: Specify the database server addresses, port numbers, authentication methods, and database communication protocols (e.g., JDBC for Java-based systems or ODBC for Windows-based systems).
* API Integration:
* Description: The Driving License Web System may integrate with external services, such as license testing software and car rental reservation services, through well-defined APIs (Application Programming Interfaces).
* Specifics: Define the API endpoints, authentication methods, and data exchange formats (e.g., JSON or XML) required for seamless integration with external services.

## 5.9 Licensing Requirements

The Driving License Web System must adhere to specific licensing and usage restriction requirements to ensure legal compliance and proper software usage. These requirements include:

User Licensing:

* Users accessing the Driving License Web System shall comply with any user licensing terms and conditions. These terms may specify the number of users allowed, the scope of usage, and any restrictions or fees associated with licensing for end-users.

Legal Compliance:

* The software must comply with all relevant legal requirements and regulations regarding licensing, data privacy, and software distribution in the jurisdictions where it is used.

Security and License Protection:

* The system shall implement security measures to protect against unauthorized usage, unauthorized license activation, or piracy. These measures help ensure that only valid licenses and authorized users can access and use the software.

By defining these licensing requirements, the Driving License Web System can effectively manage licenses, monitor usage, maintain legal compliance, and provide a clear framework for user access and software operation while respecting third-party licensing agreements.

## 5.10 Legal, Copyright, and Other Notices

The Driving License Web System must include essential legal disclaimers, copyright notices, and trademark compliance information to address legal, intellectual property, and branding considerations. These notices and disclaimers include:

* Terms of Use and Legal Disclaimers:
* Define the terms of use and legal disclaimers that users must agree to before using the Driving License Web System.
* Include disclaimers covering liability, warranty, and user responsibilities, specifying the extent of the system's obligations.
* Copyright Notices:
* Display copyright notices prominently to indicate ownership and protection of intellectual property.
* Include copyright information for the software, its components, user documentation, and any proprietary content within the system.
* Patent Notices:
* If applicable, specify any patented technologies, features, or algorithms used in the system.
* Include patent notices where required to inform users and third parties about the protected intellectual property.
* Trademark and Logo Compliance:
* Ensure that the usage of trademarks, service marks, wordmarks, or logos complies with relevant trademark laws.

By addressing these legal, copyright, and notice-related aspects in the SRS, the Driving License Web System can establish a clear legal framework, protect intellectual property, and provide transparent information to users regarding software usage and compliance requirements.

## 5.11 Applicable Standards

The Driving License Web System adheres to a set of applicable standards to ensure legal compliance, quality assurance, and operational compatibility. These standards include:

* Web Content Accessibility Guidelines (WCAG) 2.1:
  + Compliance with WCAG 2.1 Level AA standards to ensure the system's accessibility to individuals with disabilities.
* General Data Protection Regulation (GDPR):
  + Adherence to GDPR standards for data protection and user privacy, with a specific focus on user data handling, consent mechanisms, and data access and erasure rights.
* Health Insurance Portability and Accountability Act (HIPAA):
  + Compliance with HIPAA standards for the protection of sensitive health information, where applicable, ensuring secure handling of medical data in the system.
* HTML5 and CSS3 Standards:
  + Conformance to web development standards including HTML5 and CSS3, ensuring compatibility with modern web browsers and providing an enhanced user experience.
* Licensing and Copyright Regulations:
  + Compliance with legal standards related to licensing, copyright, and intellectual property rights, with a focus on adhering to copyright laws and licensing standards to protect intellectual property.
* Operating System Compliance:
  + Compliance with the requirements of various operating systems (e.g., Windows, macOS, Linux), ensuring the system's proper operation on different platforms.
* Unicode Internationalization Standards:
  + Adherence to Unicode internationalization standards for multilingual support and global accessibility, enabling the system to cater to diverse linguistic and cultural needs.

By conforming to these applicable standards, the Driving License Web System aims to guarantee legal and regulatory compliance, provide a quality user experience, ensure interoperability with external services, and operate effectively across diverse platforms and in a global context.

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