




DriverPass System Analysis

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[No speaker notes required for this slide.]



System Requirements

- Functional Requirements

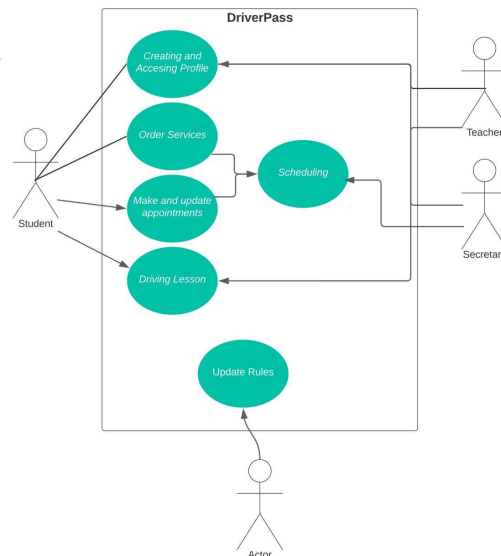
- The system shall validate user credentials when logging in, prompting for a valid username and password.
- The system shall allow users to book reservations.

- Non-Functional Requirements

- During sign-up, users should create their own unique username and password, which should be case-sensitive for heightened security
- The system should support a wide range of devices and operating systems to ensure accessibility for all users.

- System should support wide range of devices and operating systems for accessibility.
- Cloud infrastructure eliminates need for additional tools or databases.
- Cloud platform provides built-in security measures and database management.
- Simplifies system deployment and maintenance while ensuring efficiency and security.
- During sign-up, users create unique username and password (case-sensitive).
- Multifactor authentication system adds extra layer of verification.
- System should notify administrator of glitches, bugs, or performance issues.
- Immediate notifications enable swift resolution and minimize disruptions.
- Sign-up process allows custom usernames and passwords with case-sensitivity.
- System promptly alerts administrator of issues for seamless user experience.

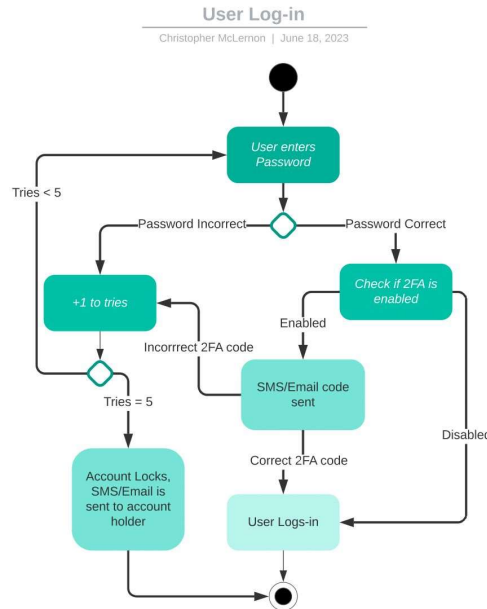
Use Case Diagram



- UML use case diagram for the DriverPass system:
 - Illustrates various actions and roles in the system.
- Actors in the system:
 - Student:
 - Create and access profile.
 - Order services.
 - Manage appointments.
 - Take driving lessons.
 - Teacher:
 - Conduct driving lessons.
 - Schedule lessons.
 - Access profile.
 - Secretary:
 - Schedule appointments.
 - Manage profiles.
 - DMV:
 - Update rules and regulations.

- Covers necessary use cases:
 - Profile management.
 - Service ordering.
 - Appointment management.
 - Lesson scheduling.
 - Rule updates.
- System design requirements:
 - Scalability:
 - Handle a large number of users.
 - Accommodate future growth.
 - Scale horizontally or vertically.
 - Security:
 - Robust security measures.
 - Protect user data.
 - Prevent unauthorized access.
 - Encryption, access control, secure authentication.
- Achieve seamless user experience.
- Ensure privacy and security of user data.

Activity Diagram



- This is a breakdown of the process of a user logging in
 - The user enters their login credentials
 - This then is verified by the server running the DriverPass system
 - if incorrect the user has 5 tries before being locked out
 - if correct the system checks if the user has 2 factor authentication
 - if the user has 2 Factor authentication
 - a code is sent to their SMS/Email
 - This helps to improve security by requiring the user to have access to their phones or emails depending on the authentication service
 - If the user enters an incorrect Code it bounces them back to the log-in screen
 - if they enter the correct code They are successfully logged in



Security

- Having 2 Factor authentication
- Unique username and passwords
- secure server handling
- external secure payment services

- Users provide information to the secretary and create a username and password for login.
- The system admin monitors activities during the account creation process.
- Cloud infrastructure securely exchanges data between the client and server, ensuring efficient communication.
- Users have the option to follow instructions for a password reset if they forget their password.
- The IT admin is responsible for detecting and addressing hacking attempts.
- The system admin receives notifications for system movements, enhancing security measures.
- In summary, login involves contacting the secretary, providing information, and creating a username and password.
- The cloud infrastructure guarantees secure data exchange.
- Password reset instructions are readily available for users.
- The IT and system admins actively maintain security and monitor system movements to enhance the user experience.



System Limitations

- System design limitations: time, budget, and human resources.
- Five-month time constraint may impact feature scope.
- Assumption of no budget availability may restrict necessary resource acquisition and scalability.
- Design acknowledges need for additional employees without specifying number or expertise.
- Agile approach recommended to address limitations.
- Agile methodologies prioritize adaptability, collaboration, and iterative development.
- Agile allows flexibility within time and resource constraints.

- Time limitation: The system design is constrained by a five-month timeframe for development.
- Impact on feature scope: The limited time available may restrict the number and complexity of features that can be developed within the given timeframe.
- Budget limitation: The assumption is that there is no budget available for the project.
- Resource acquisition restriction: The lack of budget availability may impede the acquisition of necessary resources, such as hardware, software, or external services, which could impact the system's scalability and functionality.
- Need for additional employees: The design recognizes the need for more employees to support the development process.
- Lack of specifics: However, the design does not provide details regarding the number or expertise required, leaving room for ambiguity and potential inefficiencies in development.
- Recommended agile approach: To overcome these limitations, an agile approach is recommended.
- Adaptability: Agile methodologies prioritize adaptability, allowing for adjustments to be made during the development process to accommodate changes and constraints.
- Collaboration: Agile emphasizes collaboration between team members, enabling effective communication and coordination to tackle challenges and make collective decisions.
- Iterative development: Agile promotes iterative development, where the system is built incrementally, allowing for continuous feedback, testing, and improvement.

- Flexibility within constraints: Agile provides flexibility within time and resource limitations, enabling the team to prioritize and deliver the most valuable features within the given constraints.