



## **DriverPass System Design Document**

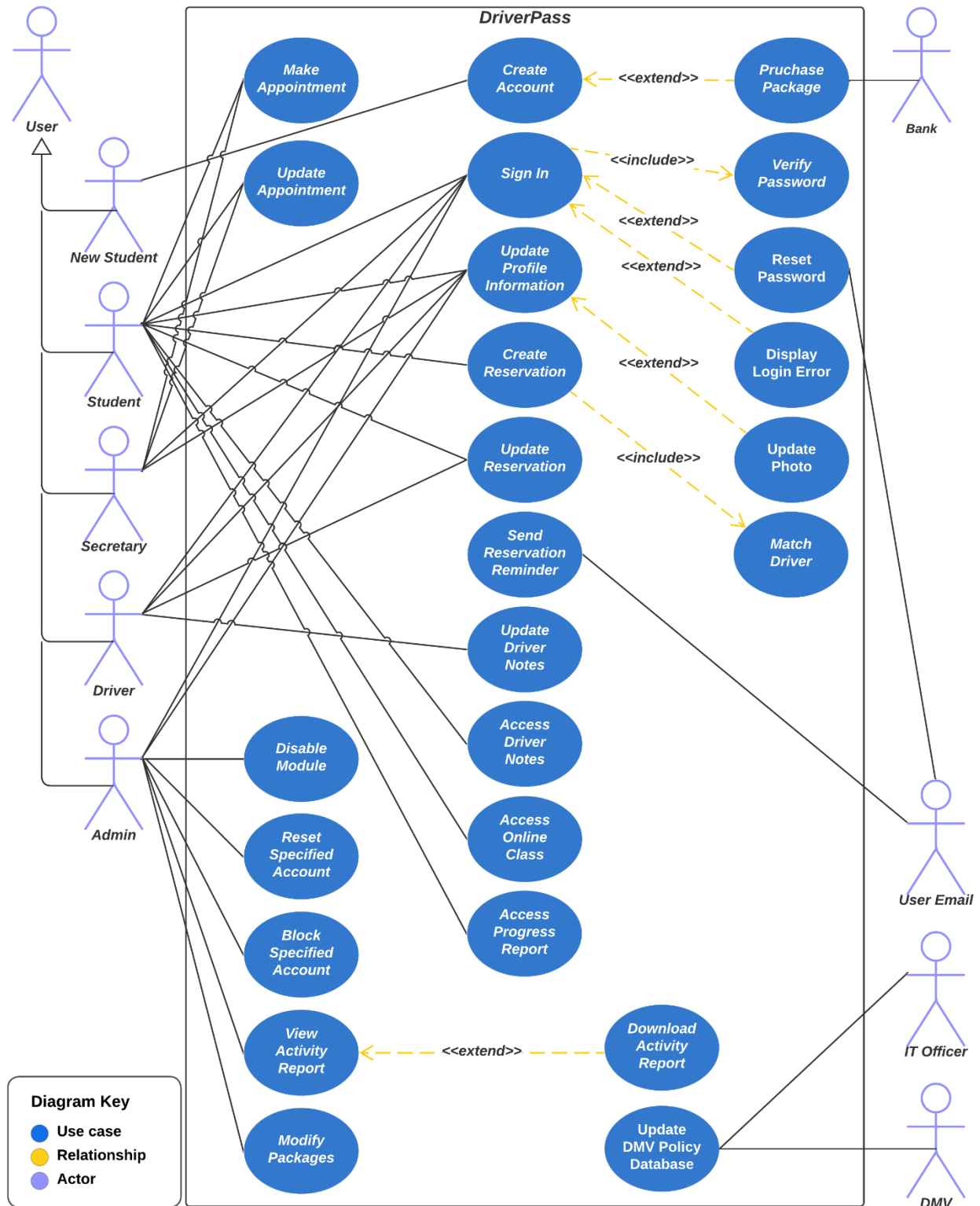
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CS-255: System Analysis and Design  
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February 19, 2023

## UML Diagrams

### UML Use Case Diagram

#### DriverPass Use Case Diagram

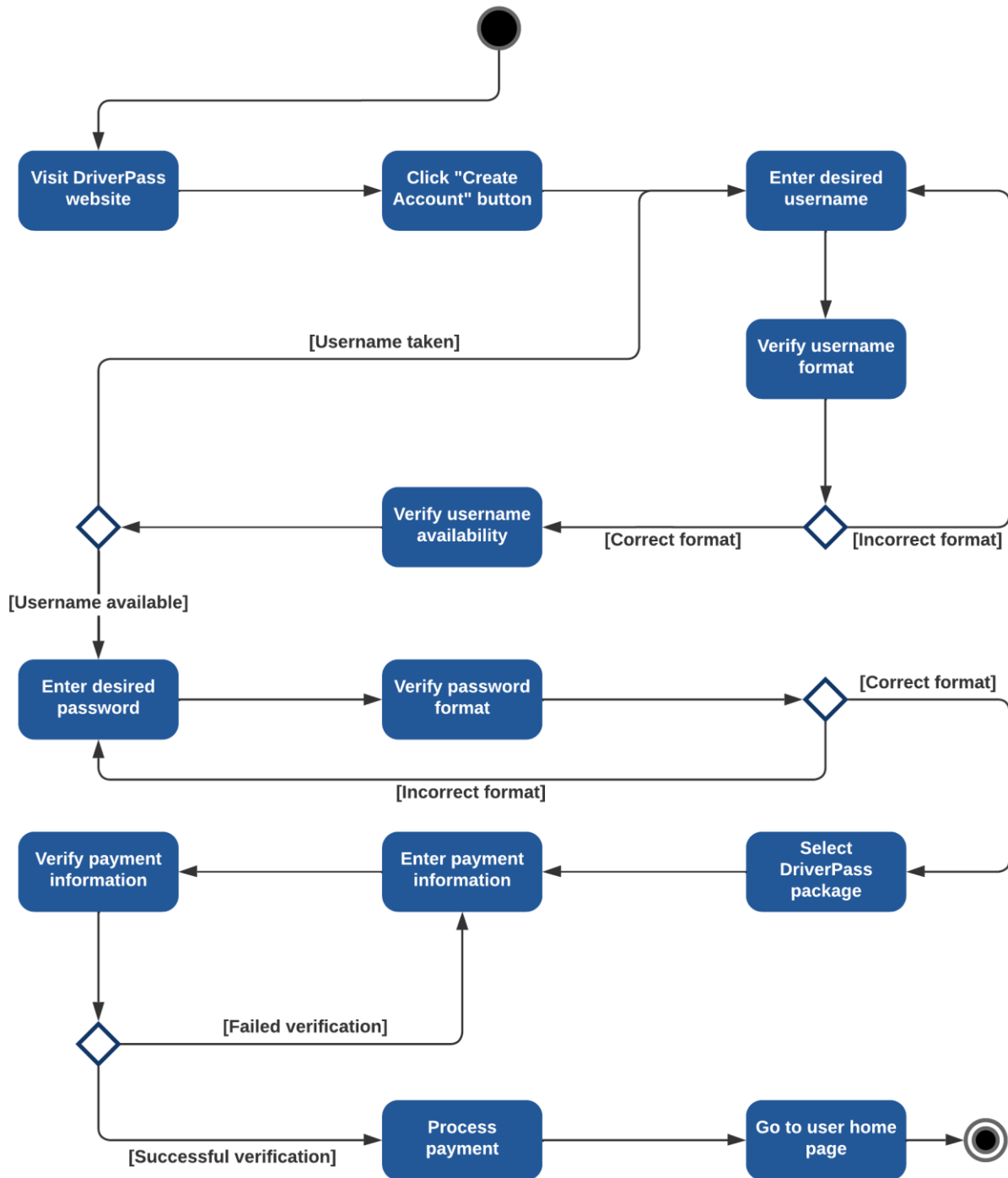
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## UML Activity Diagrams

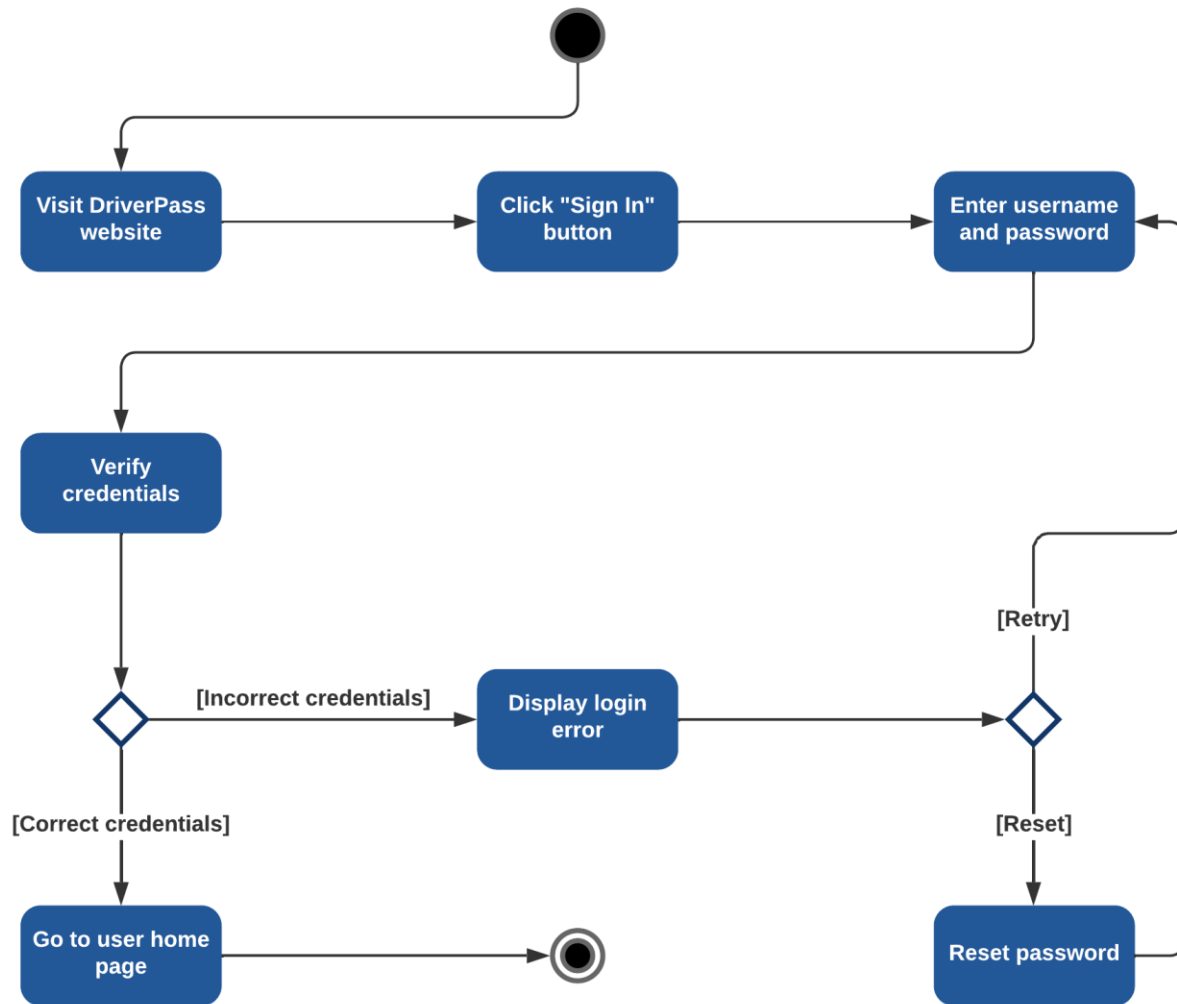
### Student Account Creation Activity Diagram

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## Sign In Activity Diagram

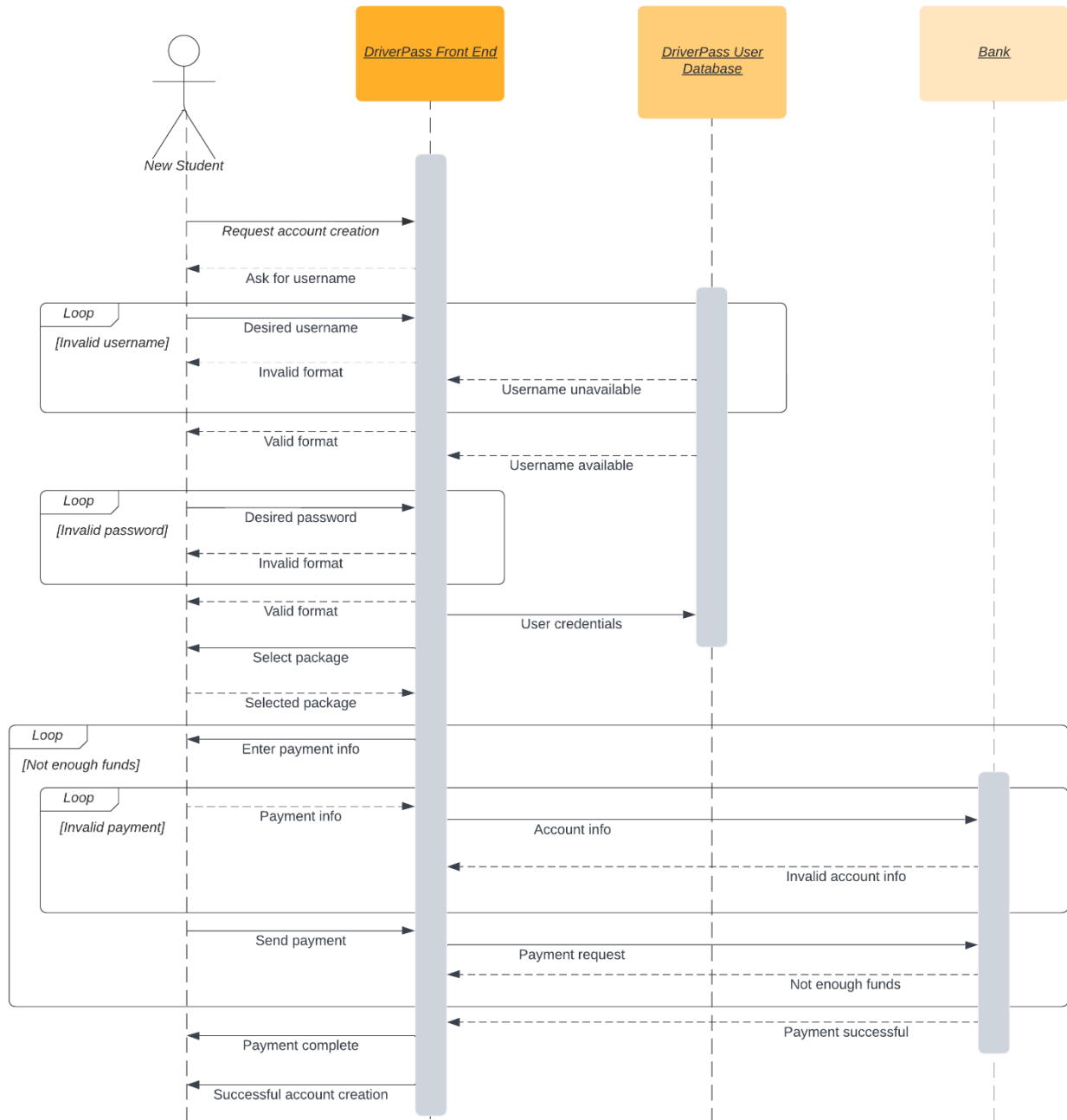
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## UML Sequence Diagram

### Student Account Creation Sequence Diagram

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## UML Class Diagram

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## Technical Requirements

### Hardware

The front end of the DriverPass system will need the following hardware:

- A modern PC, Mac, or smart device,
- A display with at least a 720p pixel resolution,
- A mouse and keyboard if using a device other than a smartphone,
- And a broadband internet connection with compatible modem and/or router.

The back end of the DriverPass system will require the following hardware:

- High-capacity, scalable storage servers,
- CPU and GPU that supports x64 architecture,
- 32GB of RAM,
- And gigabit ethernet connections.

### Software

The front end of DriverPass will require the following software:

- Windows 7 ESU or newer operating system,
- MacOS 10.13 or newer operating system,
- Android 4.4 or newer mobile operating system,
- iOS 14 or newer mobile operating system,
- And Microsoft Edge, Safari, Firefox, or Chrome internet browsers.

The back end of DriverPass will require the following software:

- Windows Server 2022 operating system,
- Microsoft Azure SQL DB,
- Microsoft .NET Framework 4.5 and newer,
- And IIS Express 8 and newer.

### Tools

DriverPass development will require the following tools:

- Modern development PC's with Visual Studio Code,
- Microsoft ASP .NET SDK,
- Microsoft ASP .NET Core,
- Azure DevOps Services,
- Azure App Services,
- And Azure authentication and encryption services.

### Infrastructure

DriverPass will require the following infrastructure:

- Microsoft Azure cloud provider to host the web app,
- Redundant backup for data,
- A payment service provider,

- Many vehicles for the driver reservations,
- Adequate garage capacity to store the unused vehicles,
- And insurance for the vehicles.