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# CS 255 System Design Document

**June 25, 2021**

## UML Diagrams

### UML Use Case Diagram

Diagram

Description automatically generated

### UML Activity Diagrams

Sign-up for Package Process

Diagram

Description automatically generated

Schedule Appointment Process

Diagram

Description automatically generated

### UML Sequence Diagram

Diagram, engineering drawing

Description automatically generated

### UML Class Diagram

So we might have three major parent level classes, the Login class, the Lessons class, and the Tests class. The Login class would be made up of subclasses, but also contain its own variables and functions. Private variables would include studentUsername, studentPassword, attemptCount. If the studentUsername and studentPassword conbination entered does not have a match in the database, the attemptCount gets increased by one. This function could be a class method. If the attemptCount = 5, then another function of the class is called in order to initiate a password reset. We would list these function names in the diagram: CountAttempts() and InitiatePasswordReset().

Diagram

Description automatically generated

## Technical Requirements

* Web-based environment: The system will require internet access on both the client side and the server side
* Capable of handling multiple customer accounts at once
* Administrative access to system from web-based environments as well as the ability to access the system directly, without internet
* Administrators should have the ability to access and update system data from anywhere, both online and offline
* System must be updated when rule changes occur as notified by the DMV
* System application should be able to run on both Windows and MacOS
* Back end tools such as databases will be needed, and will be cloud-based, making use of Platform as a Service (PaaS) and Software as a Service (SaaS)
* PaaS and SaaS will maintain storage needs, as well as security and backup