# CS 255 System Design Document

## UML Diagrams

### UML Use Case Diagram

*A diagram of a diagram

Description automatically generated*

### UML Activity Diagrams

*A diagram of a program

Description automatically generated with medium confidence*

### UML Sequence Diagram

*A diagram of a payment method

Description automatically generated*

### UML Class Diagram

*A diagram of a computer

Description automatically generated*

## Technical Requirements

* Hardware
  + Dedicate servers that will be capable of running the system. This will need to have adequate RAM, CPU, and storage capacities.
  + Redundant Storage will allow for backups of the database to be created, which is crucial for data security
  + Networking equipment that includes the necessary equipment for ensuring fast connectivity for communication between the client and server
* Software
  + Windows operating system for hosting the server of the web application
  + The MERN software development stack will be used to create the web application to ensure up-to-date practices and technology are used
  + Needs to be compatible with web browsers running on Windows, Mac, Linux, Android, and IOS.
  + AES encryption will be used to encrypt all communications between the client and server
* Tools
  + An integrated development environment will be needed to create the application
  + Git with GitHub will be used for version control of the application
  + SSL certificates will be generated to for HTTPS compatibility
* Infrastructure
  + Ample space to house the server and related equipment at the physical location