CS 157A
Project Proposal

Topic: Movie rental

Group Members:
1. Michael Fox (Student ID: 015118181)
2. Ellie Tu (Student ID: 016091842)
3. Eden Kidane (Student ID: 017234854)

1. **Introduction**
   a. **Brief overview:**
      i. We aim to create a movie rental system that allows for easy tracking of movie rental and returning, allow users to search for movies, make payment, return movies and rate the movies.
   b. **Purpose:**
      i. This system will help simplify tracking the comings and goings of the movies in stock for rent, as well as help keep track of where every movie is when rented.

2. **Objectives**
   a. **Primary Goals:**
      i. Build a database to store information about movie rentals, movies in stock, total copies of movies, and customer information.
   b. **Functionality Overview:**
      i. Allow users to check out movies but limit the duplicate movie rentals, calculate total price of all the movies rented, and record how many movies are left in stock after each user rents out a movie.

3. **Proposed Database Schema:**
   Tables
   Movies(movieID, title, totalCopies, copies rented, price)
   Movie_Ratings(movieID, SumofRating, total rentals)
   Rentals(movieID, CustomerID, pricePaid)
   Customers(CustomerID, First Name, Last Name, address, email)

   Relationship : one customer can rent many movies 'Rentals' is a one-to-many relationship
   Customer 1:M Rentals

Movie M:M Rentals

4. **Functional Requirements:**
User Interactions:
> Customers will be able to view the movies in the db
> Customers will be able to rent movies if available
> Customers will be able to search movies in db, system will indicate if in db
> Customers will be able to return movies
> Customers will be able to submit rating for movie upon return, which will update the db

Key Functions:
> Rent
> Display
> Return
> Rate
> Search

5. **Non-Functional Requirements (optional): N/A**

6. **Tools and Technologies:**
Presentation Layer: for web applications: JavaScript, Java Servlets.
Application Layer: JDBC-powered DAO classes, services to manage business logic.
Data Layer: MySQL database.
Environment: Virtual Studio Code

7. **Conclusion:**
   a. **Expected outcome:**
      i. We hope to have a fully functional movie rental system that hits all of our target goals we set above
   b. **Next steps:**
      i. Week 1 (due April 18)
         1. Project proposal
      ii. Week 2
         1. Create SQL Queries for each function
         2. Create SQL db
         3. Create Github
      iii. Week 3
         1. Develop front end web page using javascript
         2. Integrate JDBC

iv. Week 4 (due May 9th)
    1. Testing
    2. Presentation slides
    3. Project report