

FINAL REPORT

Team Name and Number: Movie Recommendation System (#32)

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Q1. PROJECT SUMMARY

Vision: To build a robust movie recommendation system that can recommend movies to its users by analysing their movie watch patterns and movie preferences.

Project Description: Movie Recommendation System is a web application that will recommend movies to its users by analysing their genre preferences and watch patterns. The application provides an interface through which the users can login into the system, update their basic profile, the application will ask them certain questions and build the user's profile. The application will also perform analysis on the user's movie watching patterns and the ratings they gave to them to recommend movies according to the his/her taste.

Q2. IMPLEMENTED FEATURES

The below features were implemented

User Requirements				
ID	Requirement	Topic Area	Actor	Priority
UR-01	As a customer, I should be able to sign up	Authentication	Customer	Critical
UR-02	As a customer, I should be able to log into the system	Authentication	Customer	Critical
UR-03	As an admin, I should be able to log into the system	Authentication	Admin	Critical
UR-04	As an admin, I should be able to add new movie details into the database	Movie	Admin	Critical
UR-05	As an admin, I should be able to update an existing movie details	Movie	Admin	High
UR-06	As an admin, I should be able to add new customers into the database	Profile Management	Admin	High
UR-07	As an admin, I should be able to modify the details of an existing customer	Profile Management	Admin	High
UR-09	As a customer, I should be able to view my profile	Profile Management	Customer	High

UR-10	As a customer, I should be able to delete my account	Profile Management	Customer	Critical
UR-11	As a customer, I should be able to add my movie preferences	Movie	Customer	Critical
UR-12	As a customer, I should be able to add movies to my list of watched movies	Movie	Customer	Medium
UR-13	As a customer, I should be able to delete movies from my list of watched movies	Movie	Customer	Low
UR-14	As a customer, I should be able to provide rating to the movies he has watched	Movie	Customer	Low
UR-15	As a customer, I should be able to view the list of movies	Movie	Customer	Medium
UR-16	As a customer, I should be able to sort the movie list according to different attributes like release year, votes, IMDB rating	Movie	Customer	High
UR-17	As a customer, I should be able to filter the movie list according to different attributes like language, genre	Movie	Customer	High
UR-19	As a customer, I should be able to view the movie recommendations	Movie	Customer	Critical
UR-20	As a customer, I should be able to change my subscription to a premium customer	Profile Management	Customer	Low
UR-21	As a customer, I want to download the list of recommended movies as a excel file	Movie	Customer	Medium
UR-22	As a customer, I want to choose my payment options to Credit Card	Payment	Customer	Low
UR-23	As a customer, I want to choose my payment options to PayPal	Payment	Customer	Low
UR-24	As a customer, I want to accept/reject the payment agreement	Payment	Customer	Low

Business Requirements				
ID	Requirements	Topic Area	Actor	Priority
BR-01	A username must be their email id they use to sign up with	Authentication	All	Critical

BR-02	A password must contain at least 6 characters	Authentication	All	Critical
BR-03	A password must contain at least one digit and special characters are not allowed	Authentication	All	Critical

Q3. NON-IMPLEMENTED FEATURES

The below features were not implemented.

BR-04	Monthly bills need to be added to customer payments profile	Payment	Premium Customer	Medium
BR-05	Notify customers when their payment plan is about to expire	Payment	Premium Customer	Low

Q4. CLASS DIAGRAMS

1. **Class Diagram from Part2 - Found at the end of this document (also included as a separate file on Github)**
2. **Final Class Diagram - Found at the end of this document (also included as a separate file on Github)**

What changed? Why? If it did not change much, then discuss how doing the design up front helped in the development.

There are a few things that we modified in the diagram to make the design more clearer and concise.

- Initial diagram didn't have any Design Patterns. So after learning about Design Patterns, we incorporated Factory and Template Design Pattern to have a better design of our system.
- Template Design Pattern was implemented for the Payment Flow and Factory for User interaction flow.
- To include this Template Design Pattern, we had to make two separate sub-classes for payment services, one for payment via credit card and the second one for payment via PayPal.
- To include the Factory design Pattern, we created CustomerControllerFactory, UserServiceFactory classes.

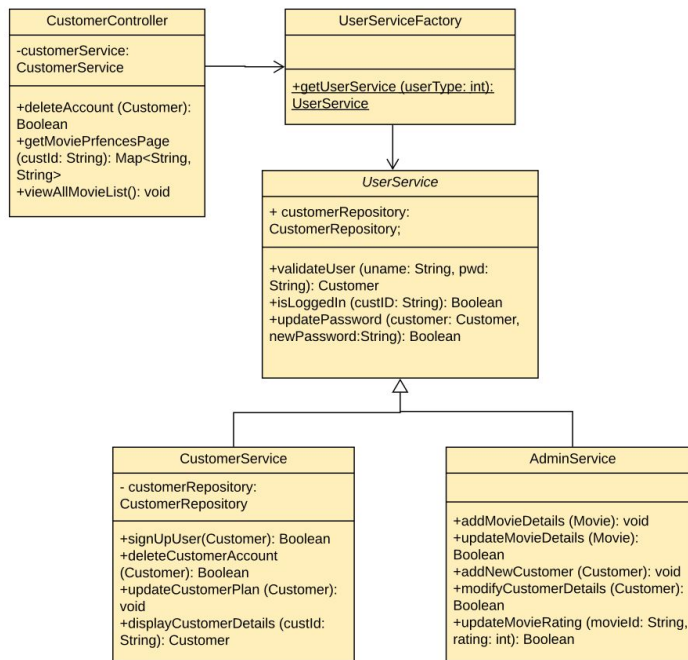
Q5. DESIGN PATTERNS

Show the classes from your class diagram that implement each design pattern (each design pattern as a separate image in the .PDF).

Classes that implement Factory Design Pattern:

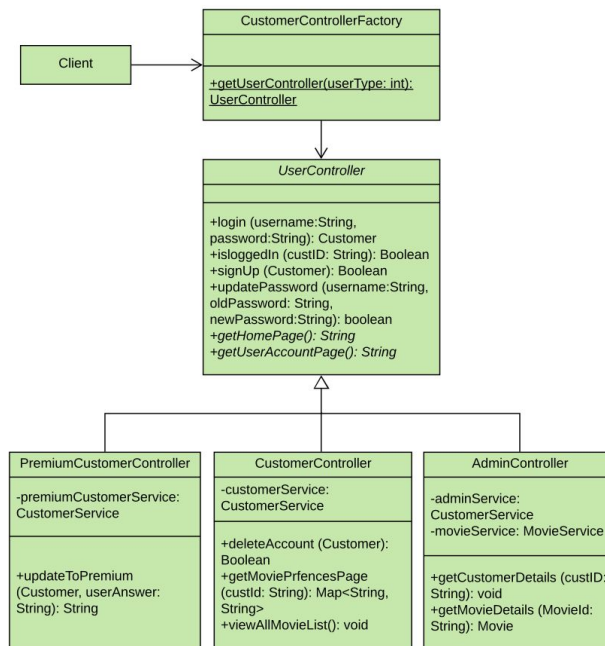
Factory Design Pattern to get User Service Object

- AdminService
- CustomerService
- UserService
- UserServiceFactory



Factory Design Pattern to get User Controller Object

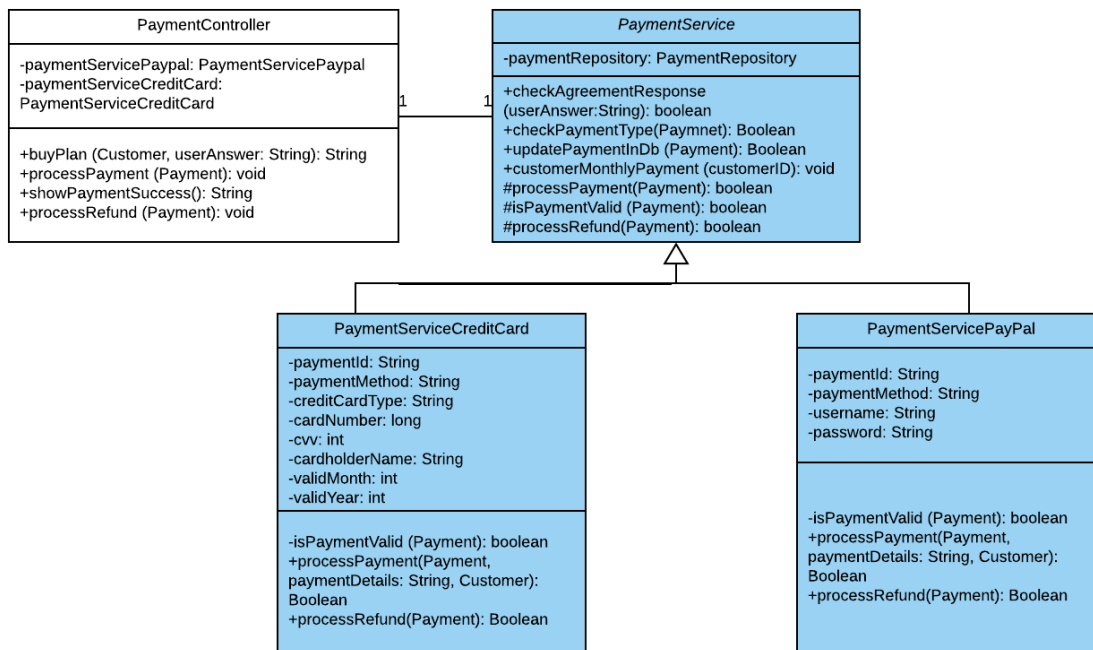
- CustomerControllerFactory
- UserController
- PremiumCustomerController
- AdminController
- CustomerController



Classes that implement Template Design Pattern:

- PaymentService
- PaymentServiceCreditCard
- PaymentServicePayPal

Template Design Pattern implementing two types of Payment Services - Payment via Credit Card and PayPal



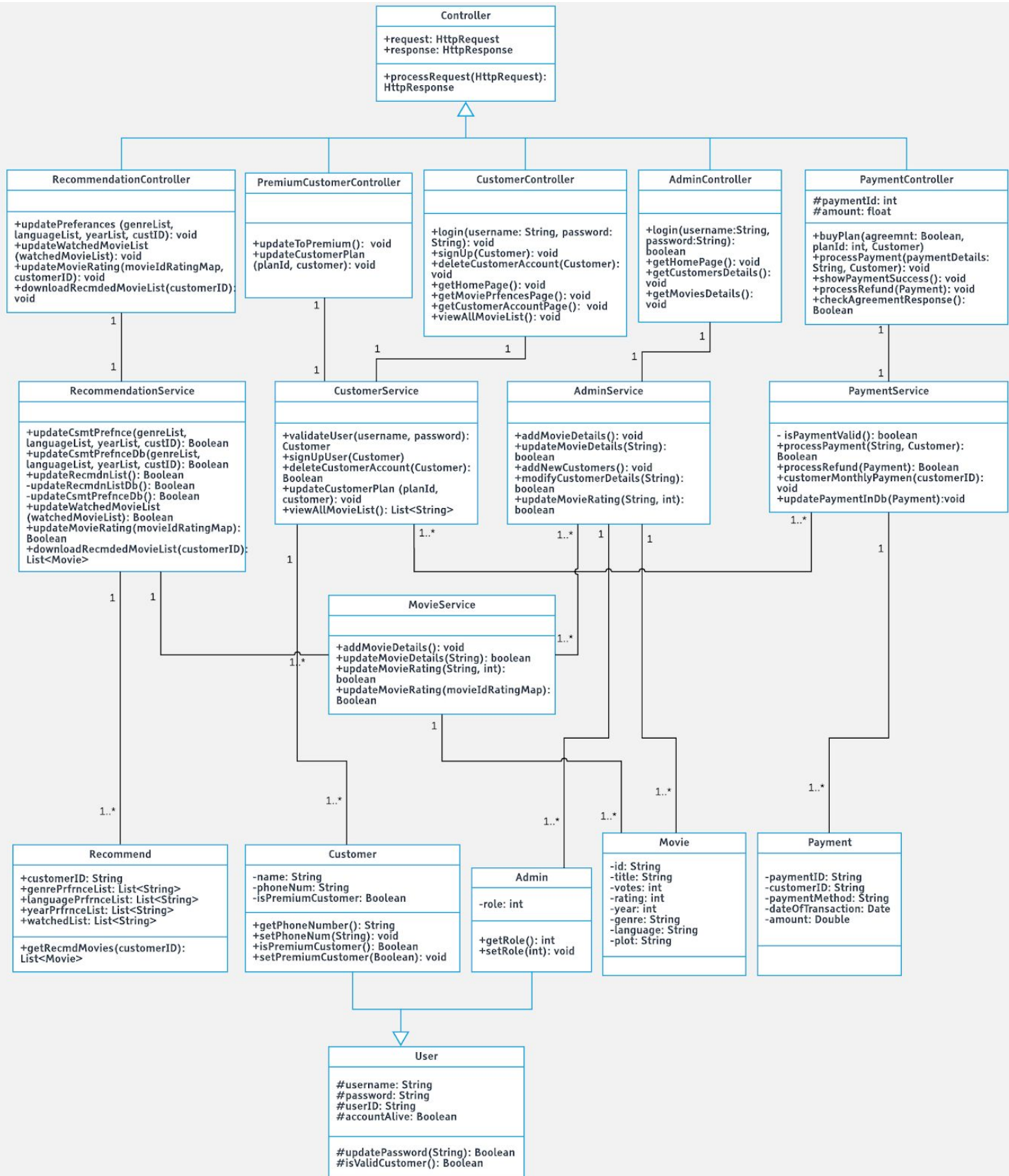
Q6. What have you learned about the process of analysis and design now that you have stepped through the process to create, design and implement a system?

The process of analysis and design helped us in learning the following:

- The process of analysis and design is very important in the process of Software Development.
- It helps us develop a better and clean system.
- A lot of redundant and smelly code can be prevented if we design properly and implement the right Design Pattern.
- It also helps in better coding and better code re-usage.
- It is a great way to ensure that the software meets the user and business requirements.
- Use case documents are actually helpful in understanding how much of the system is complete and ready to be published for external usage.
- Activity diagram helps in understanding the system flow and the stakeholder/actor who should perform that task (Swim Lanes)
- Sequence Diagram helps in understanding the interaction and relationship between the classes and objects,

Old Class Diagram (from Part2 submission):

(Can also be found in git as separate file)



Can also be found in git as separate file

Can also be found in git as separate file

