Introduction to Software Engineering ECCE 336

Online Software System for Movies

Design Document

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I. Introduction

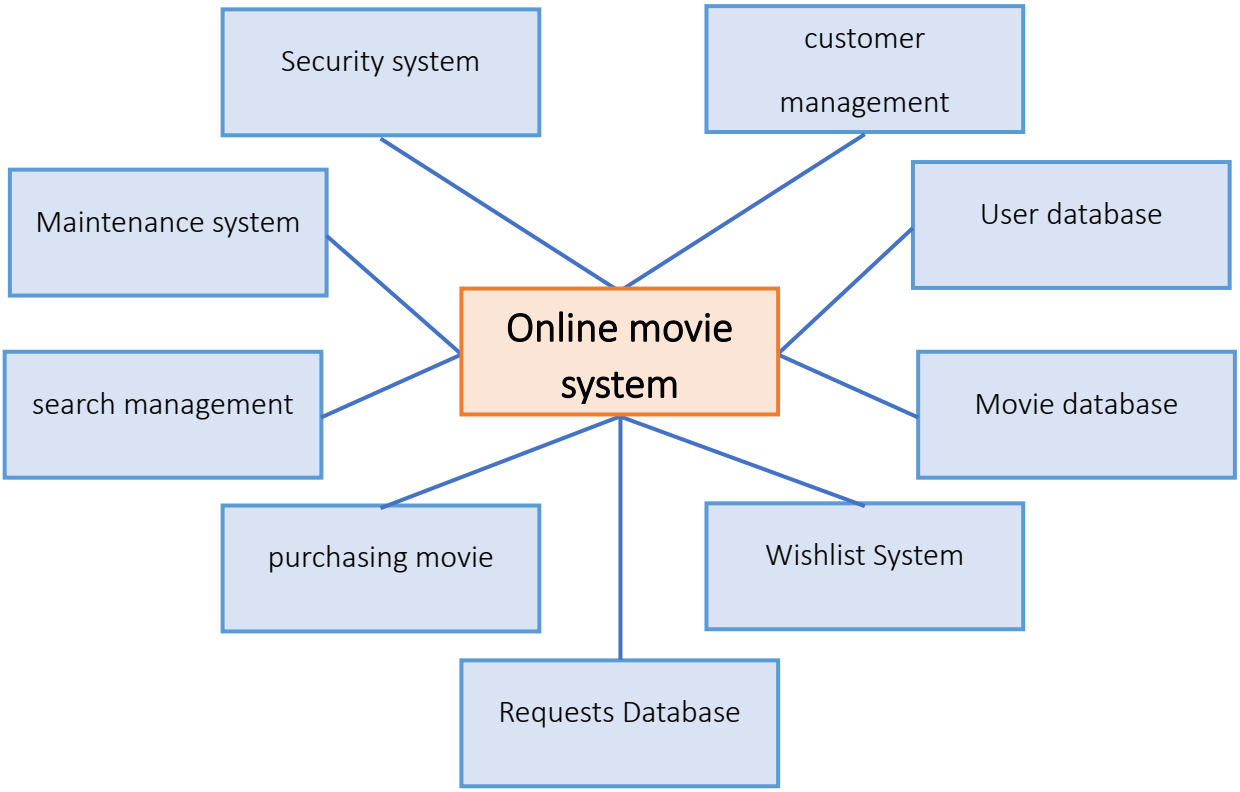
The online movie system is a comprehensive platform that aims to provide users with a seamless movie experience through the internet. This design document outlines the process of modeling and designing the solution for the online movie system, utilizing various notations such as Data Flow Diagrams (DFD), Class diagrams, and sequence diagrams. By employing these visual representations, we can effectively analyze the requirements of the system and design an efficient and user-friendly solution.

In this document, we will explore the application of these notations in capturing the system's functionalities, data flow, and interactions between different components. The DFD will illustrate how data moves within the online movie system, highlighting the processes involved and the entities that manipulate the data. The Class diagrams will present the system's object-oriented structure, identifying the classes, their attributes, and the relationships between them. Additionally, the sequence diagrams will showcase the dynamic behavior of the system, showcasing the sequence of events and the interactions between objects.

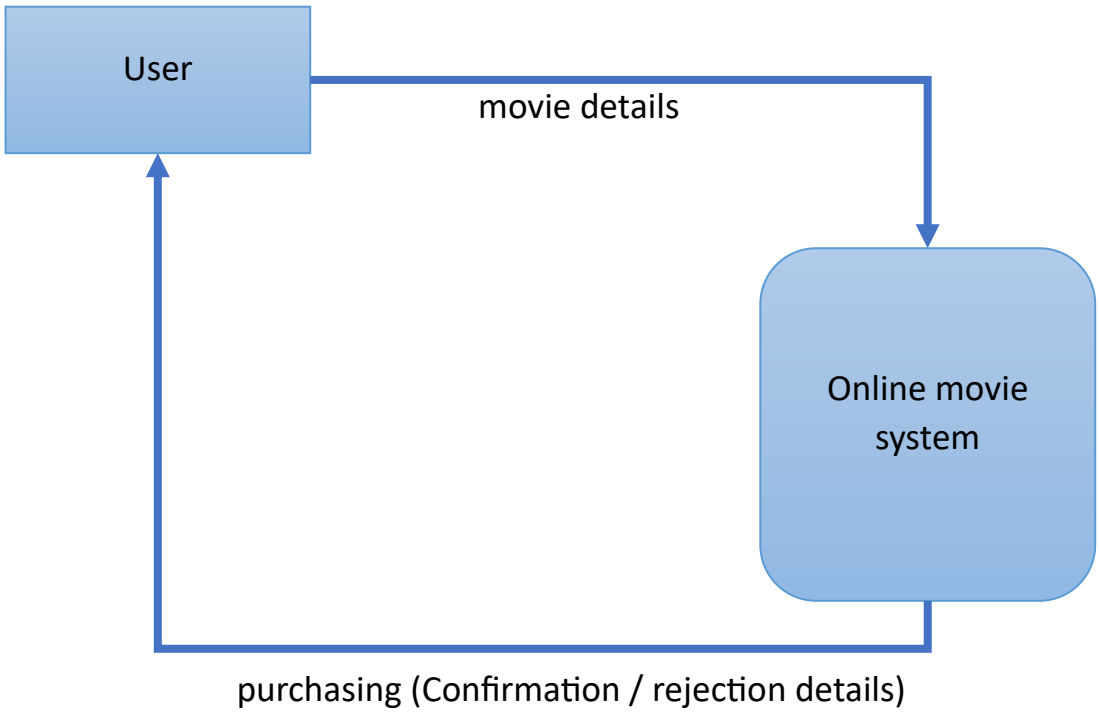
Through the meticulous application of these notations, we aim to achieve a comprehensive and well-designed solution for the online movie system, ensuring its functionality, scalability, and ease of use. By combining the power of modeling and design, we can create a robust platform that fulfills the requirements of modern movie enthusiasts and enhances their online movie-watching experience.

II. External Perspective Models

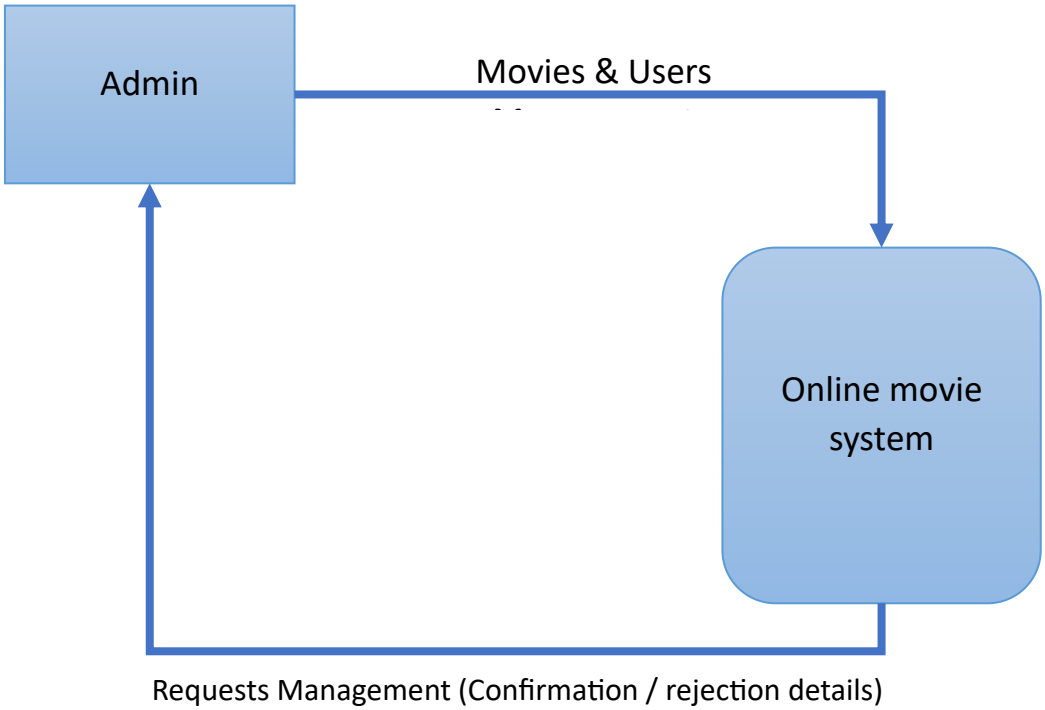
a. Context Model



b. Context Diagram (User)

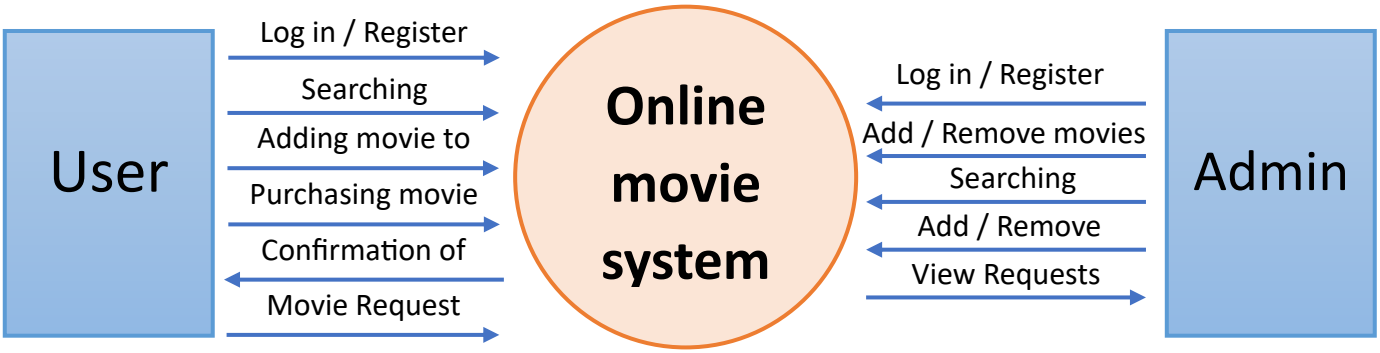


c. Context Diagram (Admin)

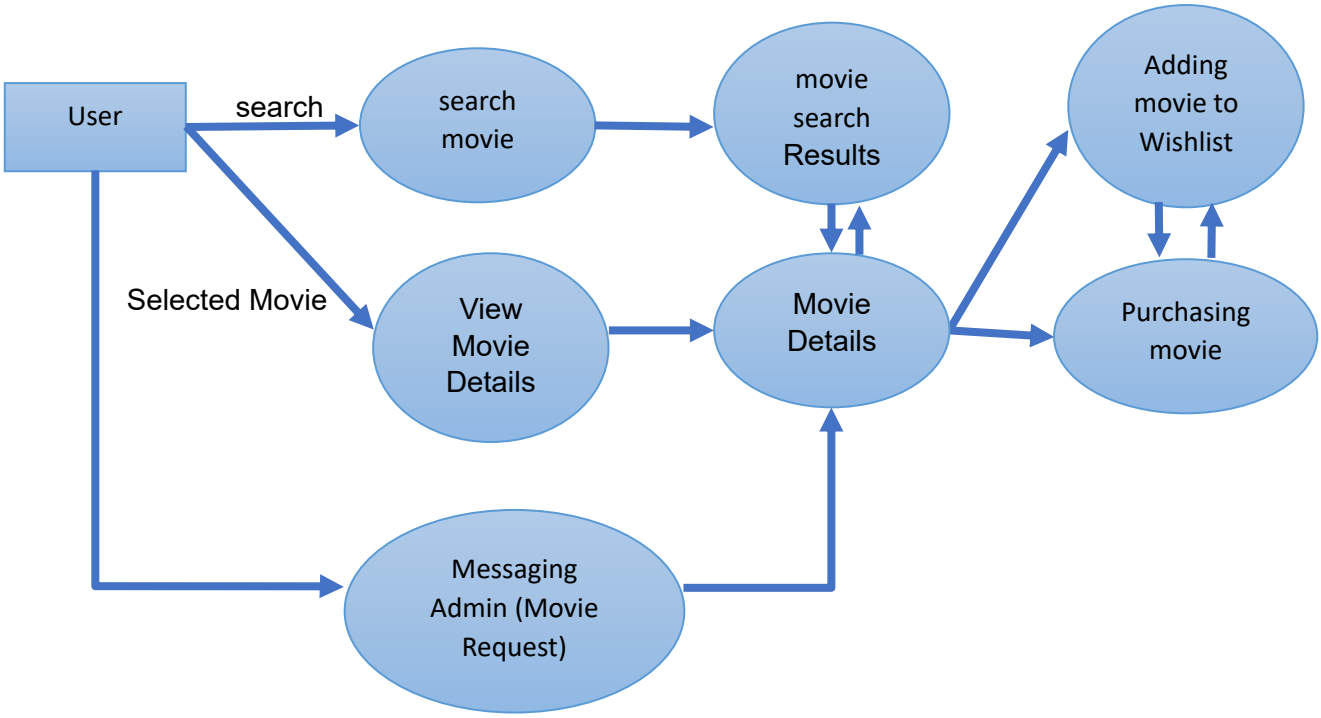


III. Behavioural Perspective Models

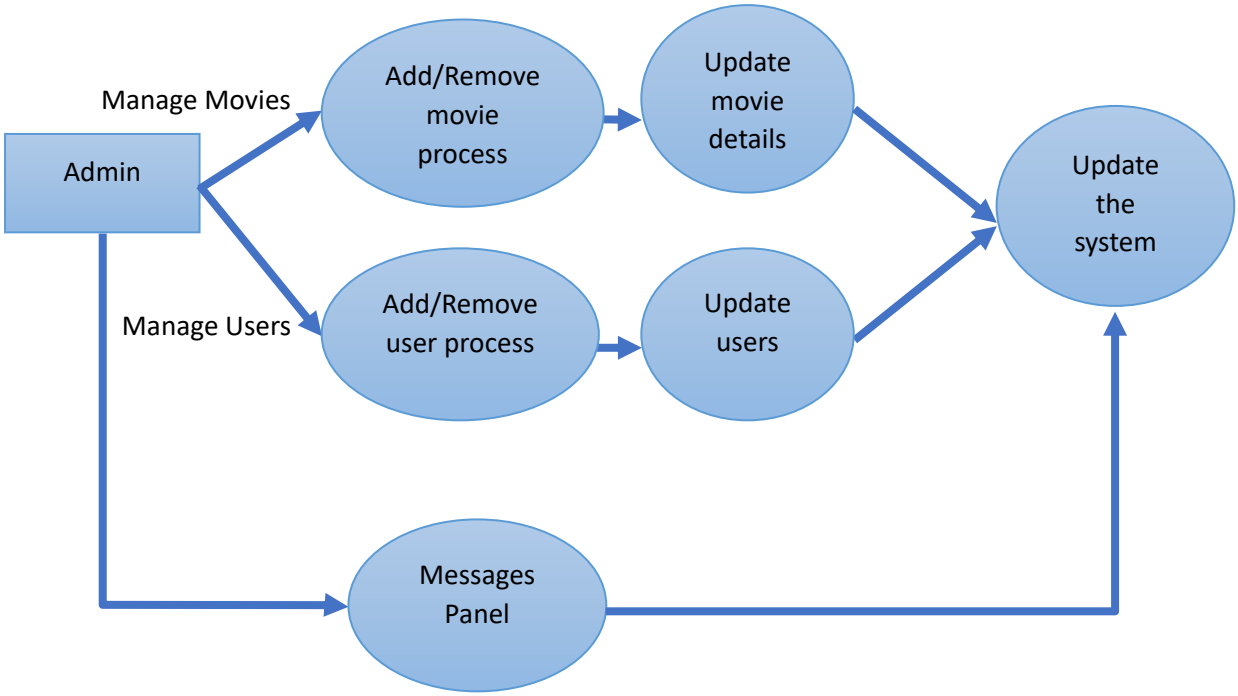
a. DFD Level-0 (User & Admin)



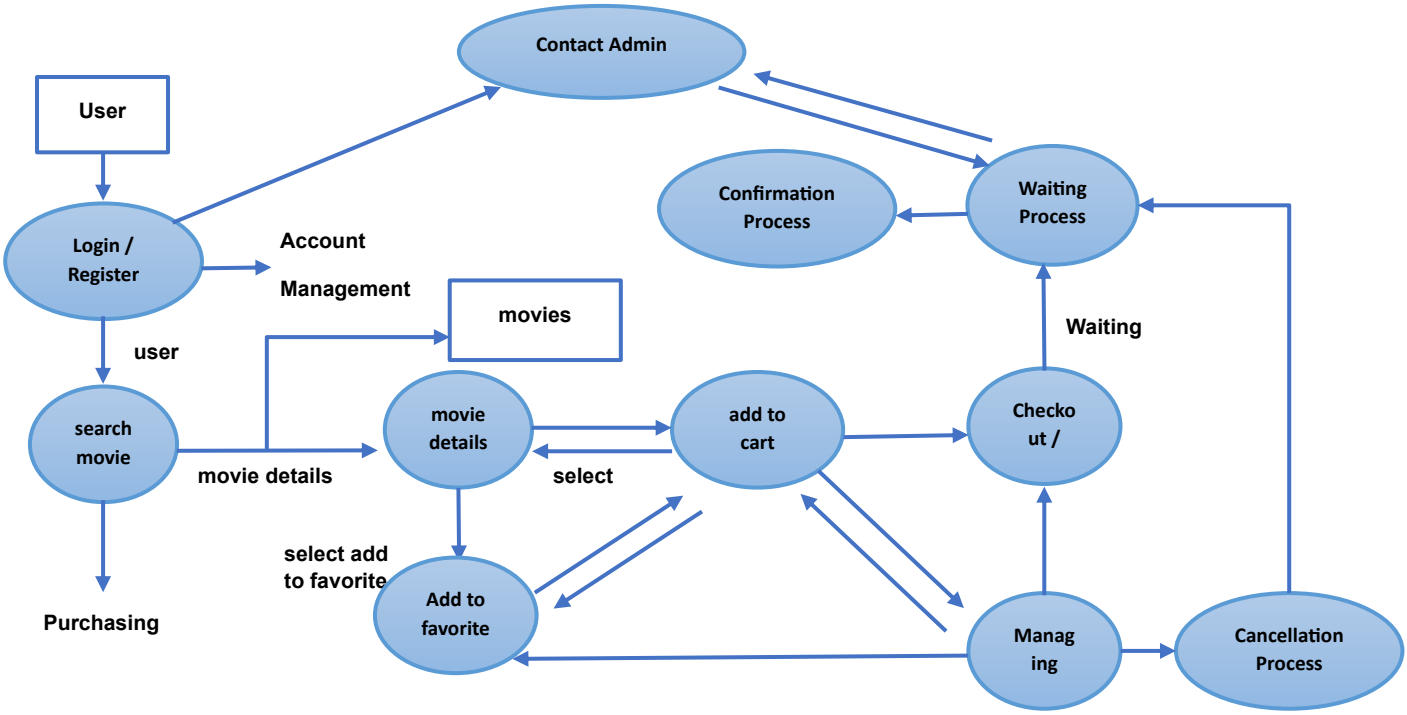
b. DFD Level-1 (User)



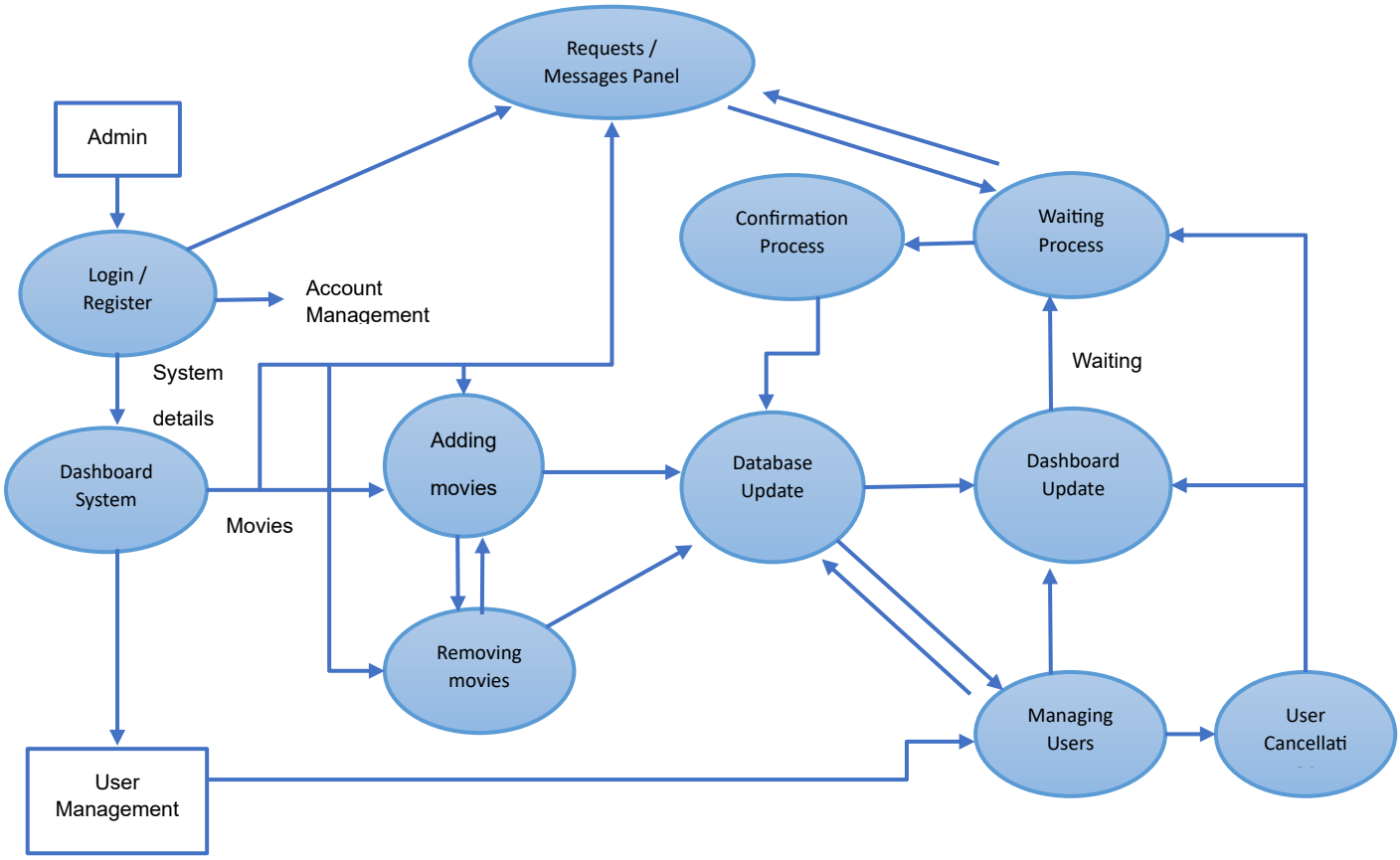
c. DFD Level-1 (Admin)



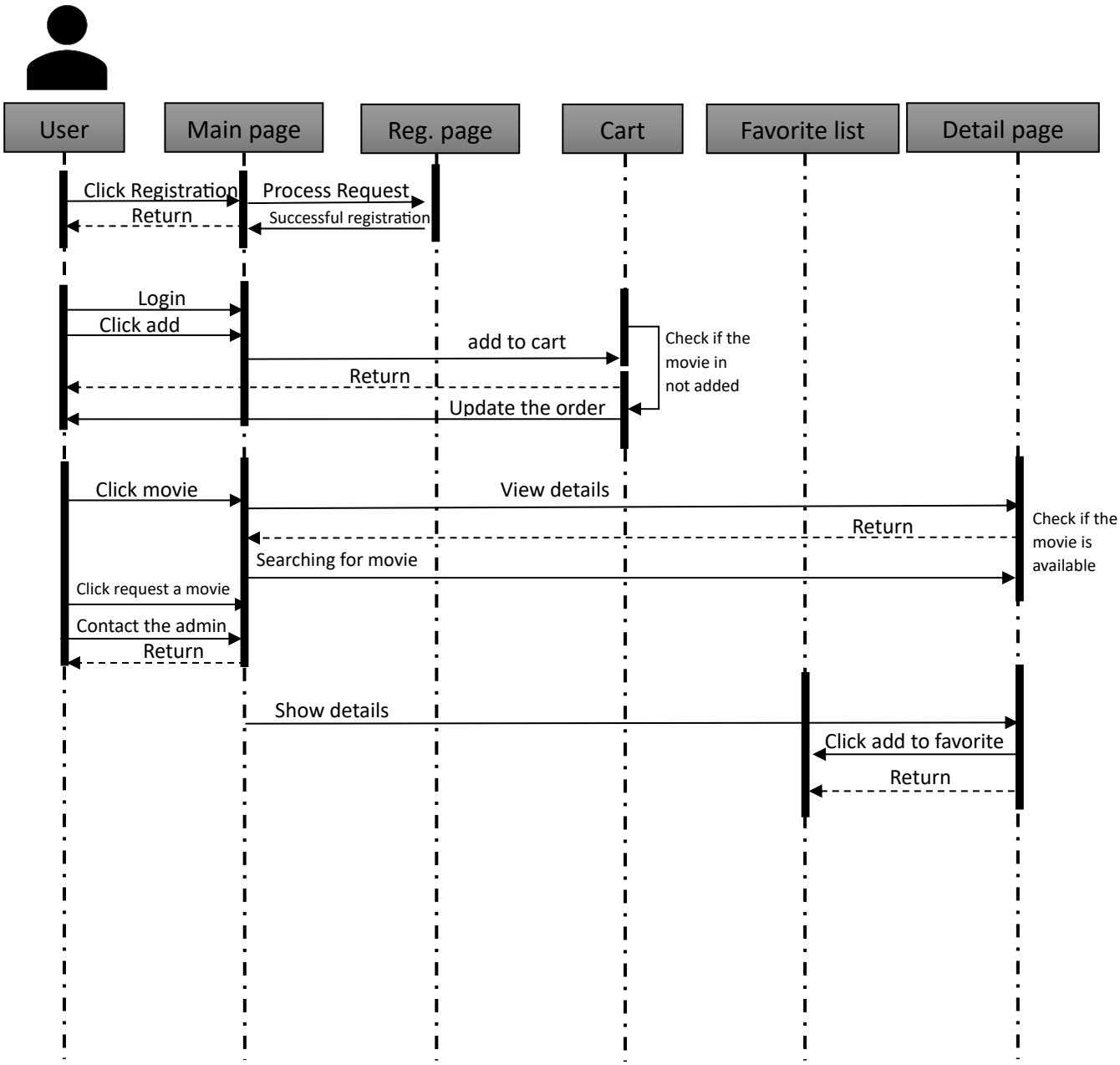
d. DFD Level-2 (User)



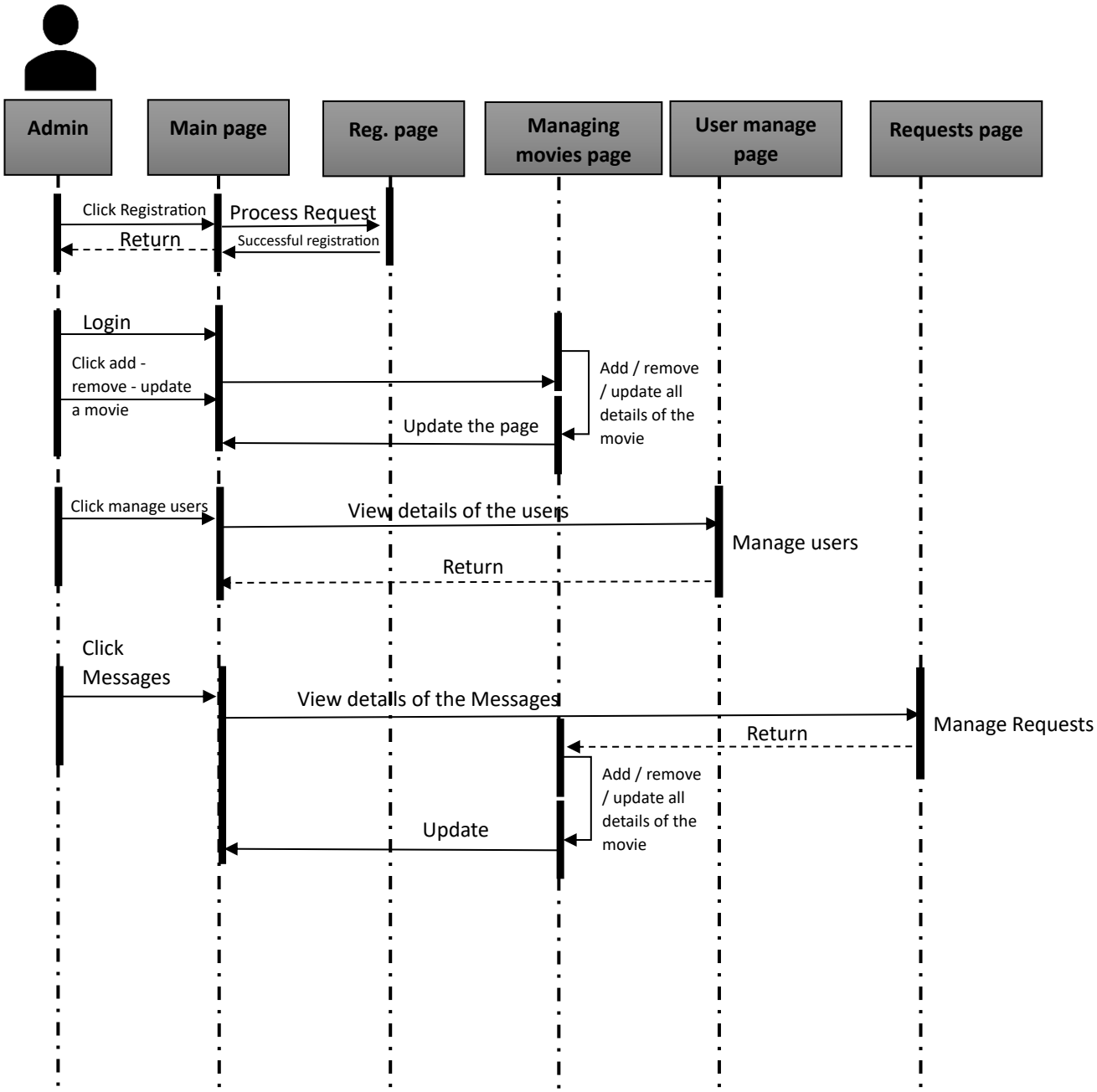
e. DFD Level-2 (Admin)



f. Object behaviour modelling (User)



g. Object behaviour modelling (Admin)



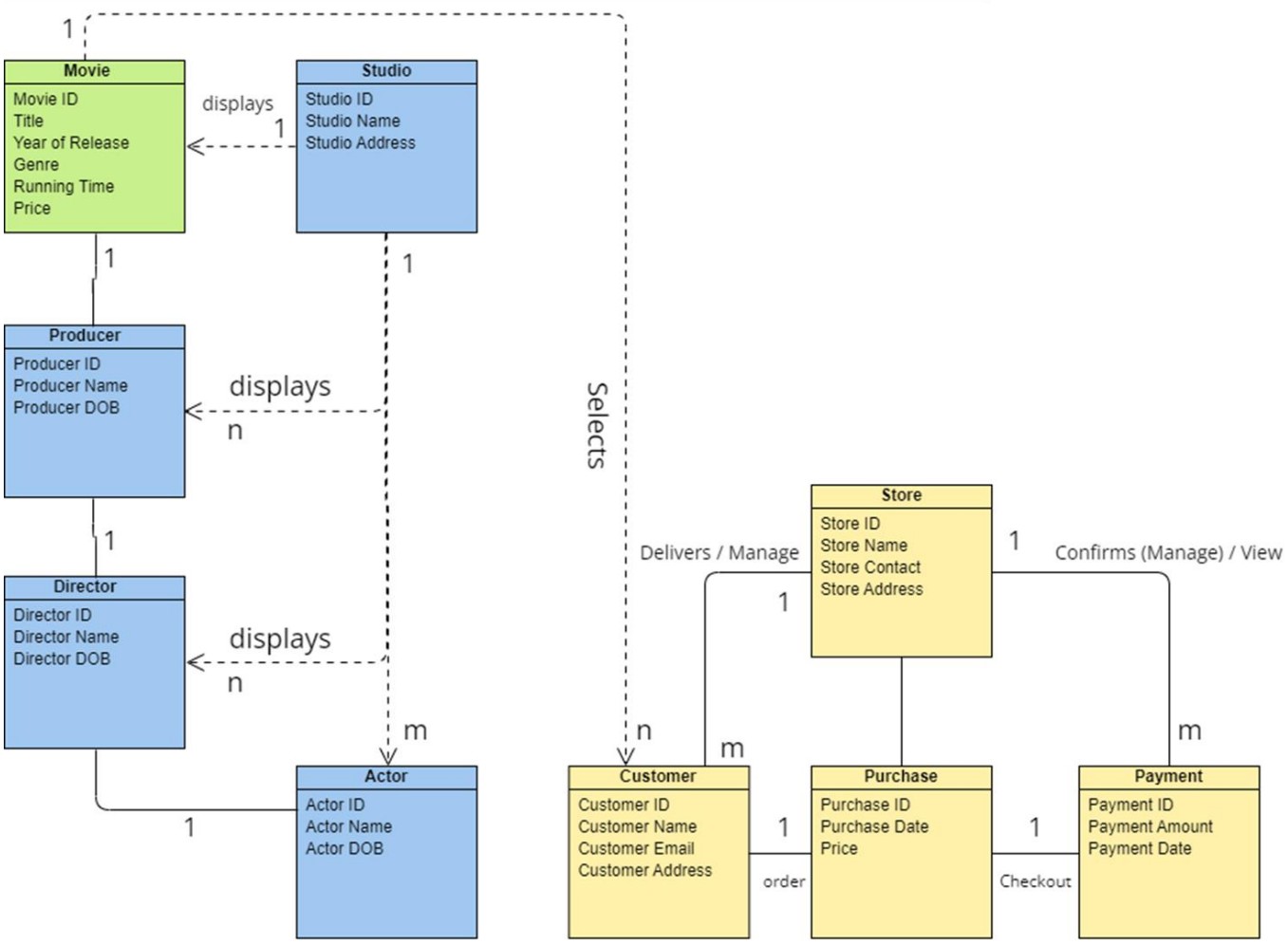
IV. Structural Perspective Models

a. Data Dictionaries

Name	Description	Type
Movie	Represents a movie available for sale in the online store.	Entity
MovieID	A unique identifier assigned to each movie in the online store.	Attribute
Title	The official title of the movie.	Attribute
YearOfRelease	The year when the movie was originally released.	Attribute
Genre	The category or genre that best describes the movie (e.g., drama, comedy, action, sci-fi, etc.).	Attribute
RunningTime	The total duration of the movie in minutes.	Attribute
Director	The name of the director who helmed the movie.	Attribute
Studio	Represents a movie production studio involved in the creation and distribution of movies.	Entity
StudioID	A unique identifier assigned to each movie studio.	Attribute
StudioName	The official name of the movie studio.	Attribute
StudioAddress	The physical address or location of the movie studio.	Attribute
Producer	Represents a producer responsible for overseeing the production of movies.	Entity
ProducerID	A unique identifier assigned to each producer.	Attribute
ProducerName	The full name of the producer involved in movie production.	Attribute
ProducerDOB	The date of birth of the producer.	Attribute
Director	Represents a director who is responsible for the artistic and creative aspects of a movie's production.	Entity
DirectorID	A unique identifier assigned to each director.	Attribute
DirectorName	The full name of the director.	Attribute
DirectorDOB	The date of birth of the director.	Attribute
Actor	Represents an actor or actress involved in movies.	Entity
ActorID	A unique identifier assigned to each actor or actress.	Attribute
ActorName	The full name of the actor or actress.	Attribute
ActorDOB	The date of birth of the actor or actress.	Attribute
Role	The character or role assigned to the actor or actress in a particular movie.	Attribute
LeadActor	Indicates whether the actor or actress played a lead role in a movie.	Attribute
Customer	Represents a customer who uses the online movie store to purchase or rent movies.	Entity
CustomerID	A unique identifier assigned to each customer.	Attribute
CustomerName	The full name of the customer.	Attribute
CustomerEmail	The email address associated with the customer's account.	Attribute

CustomerAddress	The residential or mailing address of the customer.	Attribute
Purchase	Represents a purchase transaction in which a customer buys a movie from the online store.	Entity
PurchaseID	A unique identifier assigned to each purchase transaction.	Attribute
PurchaseDate	The date when the customer made the purchase.	Attribute
Price	The price of the movie during the purchase transaction.	Attribute
Customer (Relation)	Establishes a relationship between a purchase transaction and the customer who made the purchase.	Relationship
Movie (Relation)	Establishes a relationship between a purchase transaction and the movie that was purchased.	Relationship
Payment	Represents a payment transaction made by a customer for a movie purchase or rental.	Entity
PaymentID	A unique identifier assigned to each payment transaction.	Attribute
PaymentDate	The date when the payment transaction occurred.	Attribute
PaymentAmount	The amount paid by the customer for the movie purchase or rental.	Attribute
Customer (Relation)	Establishes a relationship between a rental transaction and the customer who rented the movie.	Relationship
Movie (Relation)	Establishes a relationship between a rental transaction and the movie that was rented.	Relationship
Store	Represents the online movie store where customers can browse and purchase or rent movies.	Entity
StoreID	A unique identifier assigned to the online movie store.	Attribute
StoreName	The name or title of the online movie store.	Attribute
StoreLocation	The location or website where the online movie store operates.	Attribute
StoreContact	The contact information for the online movie store (e.g., email, phone number).	Attribute
Store (Relation)	Establishes a relationship between a movie and the online store where it is available for sale.	Relationship

b. Semantic Data Model



V. Conclusion

In conclusion, the design document for the online movie system showcases the effective utilization of notations such as Data Flow Diagrams, Class diagrams, and sequence diagrams. Through the application of these visual representations, we have successfully captured the system's requirements and designed a user-friendly solution. By considering the data flow, object-oriented structure, and dynamic behavior of the system, we can ensure the functionality and scalability of the online movie platform. This design document serves as a foundation for implementing a robust and efficient online movie system that enhances the movie-watching experience for users.