Project Report on

NETFLIX CLONE

at

U. V. Patel College of Engineering

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U.V. PATEL COLLEGE OF ENGINEERING

13/05/2023

C E R T I F I C A T E

TO WHOM SO EVER IT MAY CONCERN

This is to certify that Mr. **Ankit Choudhary** student of **B.Tech. Semester VIII (Computer Engineering)** has completed his full semester on site project work titled "**NETFLIX CLONE**" satisfactorily in partial fulfillment of the requirement of Bachelor of Technology degree of Computer Engineering of Ganpat University, Kherva, Mehsana in the year 2023-24.

College Project Guide
Prof. Rajul K. Suthar

Head, Computer Engineering
Dr. Paresh M. Solanki

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ACKNOWLEDGEMENT

This satisfaction that successful completion of any task would be incomplete without the mention of people whose ceaseless cooperation it made it possible, whose constant guidance and encouragement crown all efforts with success. We are grateful to our guide Prof. Rachana V. Modi for the guidance, inspiration, and constructive suggestions that helpful using the preparation of this project. We also thank our colleagues who have helped in successful completion of the project.

Govinda Jeswani| 19012011143
Ankit Choudhary| 19012011141

ABSTRACT

The Netflix clone project is an online streaming platform that imitates the functionality and features of the popular video streaming service, Netflix. The project involves building a scalable web application that allows users to browse and watch a wide range of TV shows, movies, and other video content. It includes features such as user registration and login, content recommendation based on user preferences, a user-friendly interface, and a smooth streaming experience. Additionally, the project involves the use of modern web technologies such as React, Node.js, Nextjs and PostgreSql with Hasura to ensure the platform's scalability and performance. Overall, the Netflix clone project is designed to replicate the popular streaming service's features and create a seamless experience for users to access an array of quality video content.

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1. INTRODUCTION

The project comprises a fantastic user interface, with exciting features that help streamline the process of searching and streaming of TV shows and movies. The project is designed to deliver a seamless and enjoyable streaming experience to users. It entails developing a powerful search engine, personalized recommendations, a user-friendly dashboard, and a robust payment system that can handle different payment modes. Netflix Clone project aims to provide users with an experience that is as close to Netflix as possible. It also offers a range of TV shows and movies that users can filter as per their preferences. The project also features an integrated watchlist where users can save movies and TV shows for later viewing.

Overall, the primary objective of the Netflix Clone project is to replicate the fantastic Netflix experience while catering to the needs of users who are looking for alternatives to Netflix. The project aims to provide a comprehensive streaming experience to offer a more convenient way to watch movies and TV shows anytime and anywhere.

1.1 PURPOSE

The purpose of creating the Netflix project was to revolutionize the entertainment industry and offer a more convenient way of accessing high-quality content. By doing so, Netflix has become one of the world's top media streaming services offering a vast variety of TV shows and movies from different genres, according to the interests and preferences of its users. Overall, the purpose of the Netflix project was to provide a convenient, personalized, and entertaining streaming experience to its users.

1.2 PROBLEM STATEMENT

How to retain and grow its subscriber base amid increasing competition in the video streaming industry. With the entry of new players like Disney+, Apple TV+, Amazon Prime, and HBO Max, Netflix faces significant pressure to continually innovate, produce high-quality content, and diversify its offerings to remain relevant in the market.

1.3 OVERVIEW

This document provides complete overview of this project to the reader.
This part of the project is meant to give an overview as simple as possible to the reader about the project or even who so ever it is concerned to.

1.4 OBJECTIVE

The objective of this project is to provide a streaming service for movies and TV shows that is convenient, affordable, and personalized to the viewer’s preferences.

1.5 TOOLS & TECHNOLOGIES

The Tools and Technologies are as follows:

Table 1.5-1: Tools & Technologies

Front-End Development	Next, React, Html and CSS
Back-end Development	Node.js
Database	PostgreSql with Hasura
IDE	Visual Studio Code
System Design Diagram	Creately and Star UML
Database Software	Hasura
Testing and Validation	21th April 2023 – 28th April 2023

2. FEASIBILITY STUDY

2.1 OPERATIONAL FEASIBILITY

The developed system must be simple to use so that there should not be any confusion while operating it.

Operational feasibility refers to the ability of a company to implement a proposed project or system with the available resources, technology, and capabilities. In the case of Netflix, the company's primary operation is the streaming of digital content over the internet, such as TV shows, movies, and original content.

The training is not required to operate the system in user's environment. One can easily work with the new system. In this way, the system is operationally feasible.

2.2 ECONOMICAL FEASIBILITY

This is very important for considering the cost overheads while implementing the system. The cost overheads include Software cost, Hardware cost, operating cost etc.

Netflix is a subscription-based streaming service that offers a wide range of TV shows, movies, and original content. It generates revenue primarily from subscription fees, which are relatively affordable compared to traditional cable TV services. Netflix has been able to grow its subscriber base rapidly in recent years, with over 200 million subscribers worldwide as of 2021.

Considering all the benefits, the value of the proposed system outweighs the cost of development of the system. Hence it is economical.

2.3 TECHNICAL FEASIBILITY

Technical feasibility is usually raised during the feasibility stage of investigation. Project will provide user friendly approach & so any person with basic computer knowledge will be able to handle the system easily. The system is technical feasible, as software and hardware are both easily available by performing proper installation. User friendly features added to improve the performance of the system.

3. HARDWARE AND SOFTWARE

Table 3-1: Hardware & Software

	Developer-Side Requirements	Client-Side Requirements
Software	Operating system is Windows 8 Front End: HTML, CSS, React and Next.js Back End: Node.js, Hasura Database: PostgreSql IDE: Visual Studio Code Web Browser Terminal or Command Prompt	Any Operating System Any Mobile Device Web Browser
Hardware	Intel(R) Core (TM) i3 2.40 GHz 6GB RAM or More 256GB SSD Storage + 512 GB HDD Storage	Laptop with Wi-Fi Android Or IOS Mobile Phone Having Wi-Fi Minimum 4 GB RAM in mobile and Laptop Good Internet Connection
Minimum hardware	Intel Core i3 2GB RAM 256 GB HDD Storage	Laptop with Wi-Fi Android Or IOS Mobile Phone Having Wi-Fi Minimum 2 GB RAM in mobile and Laptop Good Internet Connectivity

4. PROCESS MODEL

4.1 AGILE MODEL

Agile is a process for managing a project that involves constant collaboration and working in iterations. Agile project management works off the basis that a project can be continuously improved upon throughout its life cycle, with changes being made quickly and responsively.

Agile is one of the most popular approaches to project management due to its flexibility, adaptability to change, and high level of customer input.

Figure 4.1-1: Agile Model

5. PROJECT PLANNING

Table 5-1: Project Planning

Sr No.	Task To Complete	Estimated Time
1.	Project and Objective Identification	1st Feb 2023 - 10th Feb 2022
2.	Documentation	11st Feb 2023 - 16th Feb 2023
3.	Requirement Gathering	17th Feb 2023 - 20th Feb 2022
4.	Analysis Phase	21st Feb 2023 - 28th Feb 2023
5.	Design Analysis	28th Feb 2023 – 10th March 2023
6.	Coding and Development	5th March 2023 – 10th April 2023
7.	Testing and Validation	11th April 2023 – 18th April 2023
8.	Future Work	18th April 2023 Onwards

Note: Talking About Future Work if we observe while doing any task, we see new things evolving over a period and new feature coming all the way day by day so keep updating our project we need to update our deployed application by adding something new to it and everything cannot be done in just couple of months so that's why updating things is necessary.

6. SYSTEM REQUIREMENT STUDY

6.1 FUNCTIONAL REQUIREMENTS

- Login Page, User authentication and registration.
- Content Management.
- Search functionality.
- Recommendation system.

6.2 NON-FUNCTIONAL REQUIREMENTS

- Performance: ensuring that the platform can handle high traffic and load during peak hours without slowing down or crashing.
- Scalability: planning for future growth and expansion of the platform, ensuring that it can handle increased usage and demand over time.

7. SYSTEM DESIGN

7.1 USE-CASE DESIGN

- User should be User logs in to their Netflix account if they have not already.
- User browses through the content categories available on Netflix.
- User selects a content category to view.

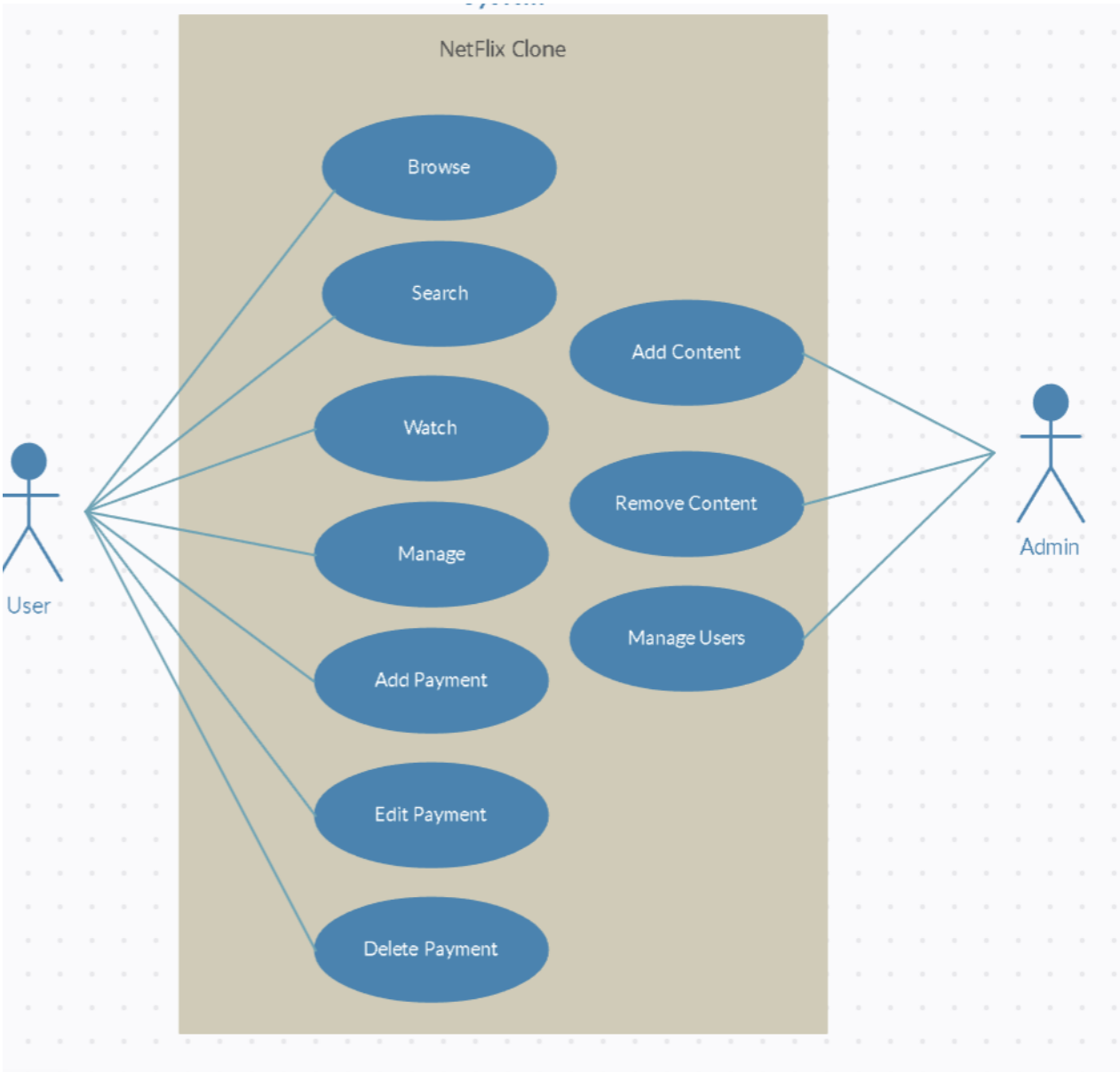

Figure 7.1-1: Use-Case Design

7.2 CLASS DIAGRAM

Class diagram is a visual representation of classes. The diagrams describe class structure, attributes, specifications, and behaviors, as well as the relationships among various classes.

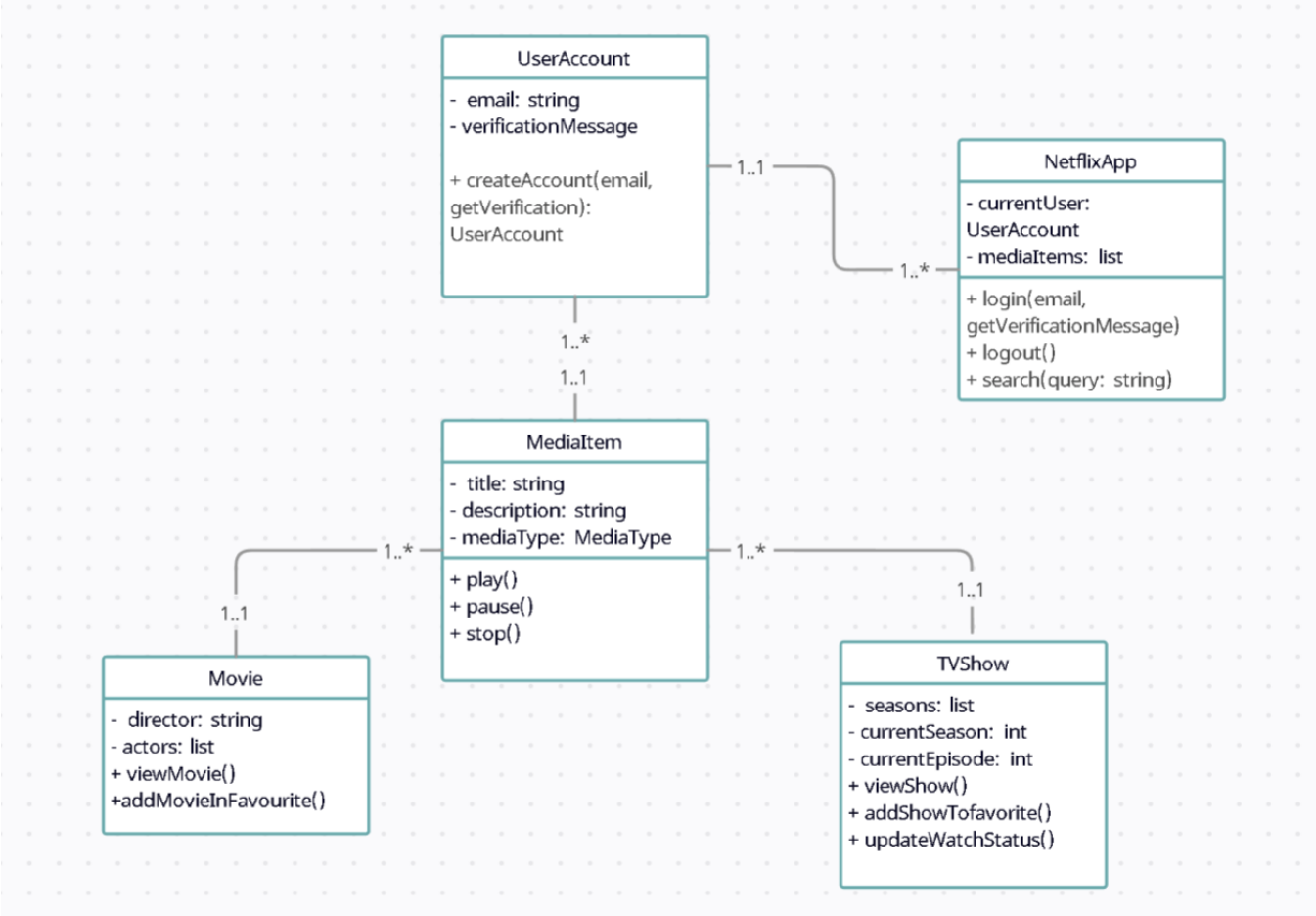

Figure 7.2-1: Class Diagram

7.3 SEQUENTIAL DIAGRAM

The sequence diagram is used primarily to show the interactions between objects in the sequential order that those interactions occur. Much like the class diagram, developers typically think sequence diagrams were meant exclusively for them.

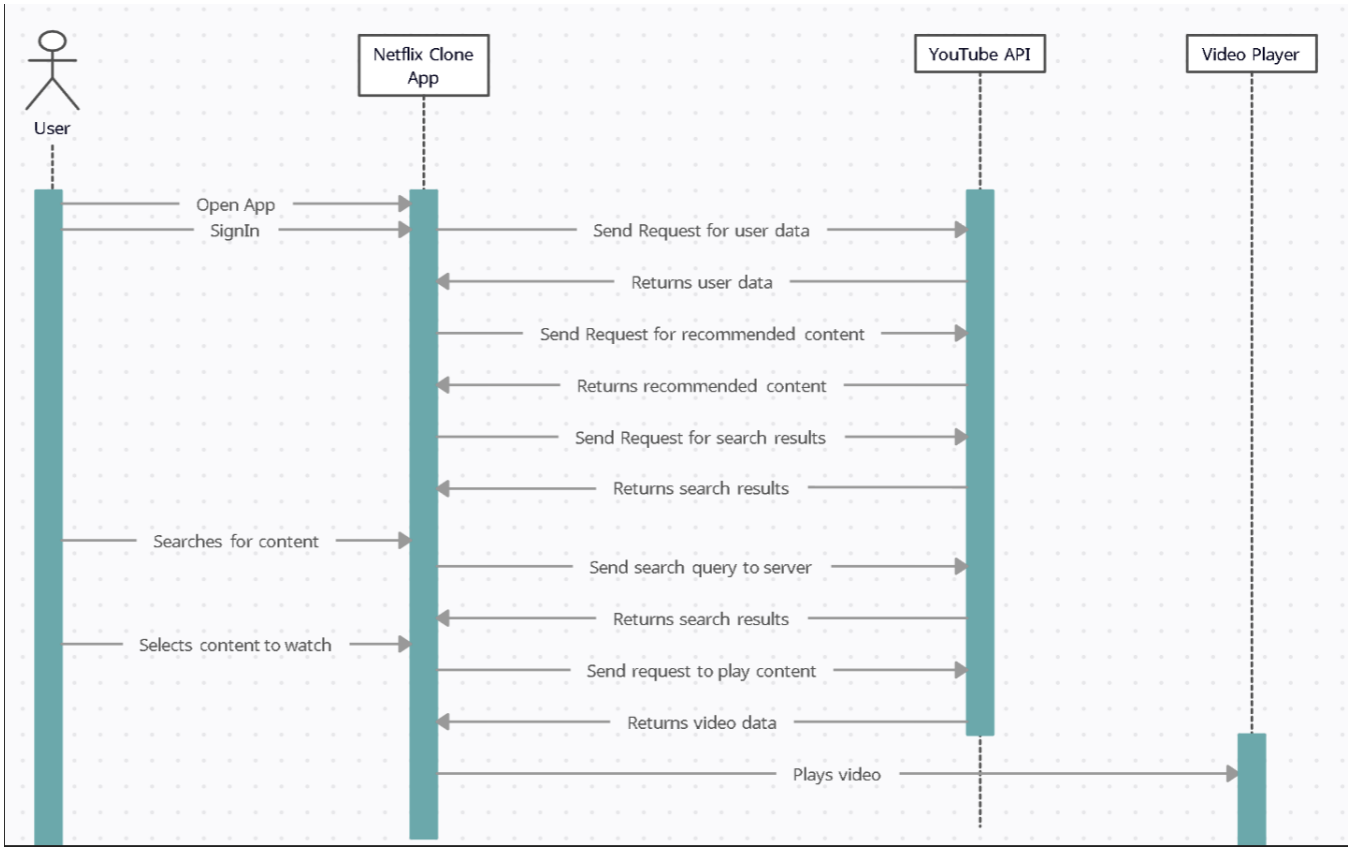

Figure 7.3-1: Sequential Diagram

7.4 ACTIVITY DIAGRAM

An activity diagram is a behavioral diagram i.e., it depicts the behavior of a system. An activity diagram portrays the control flow from a start point to a finish point showing the various decision paths that exist while the activity is being executed.

The activity diagram mentioned above is an overview of what happens when a user interacts with Netflix. The actual activity diagram can have more detail and sub-processes within each activity.

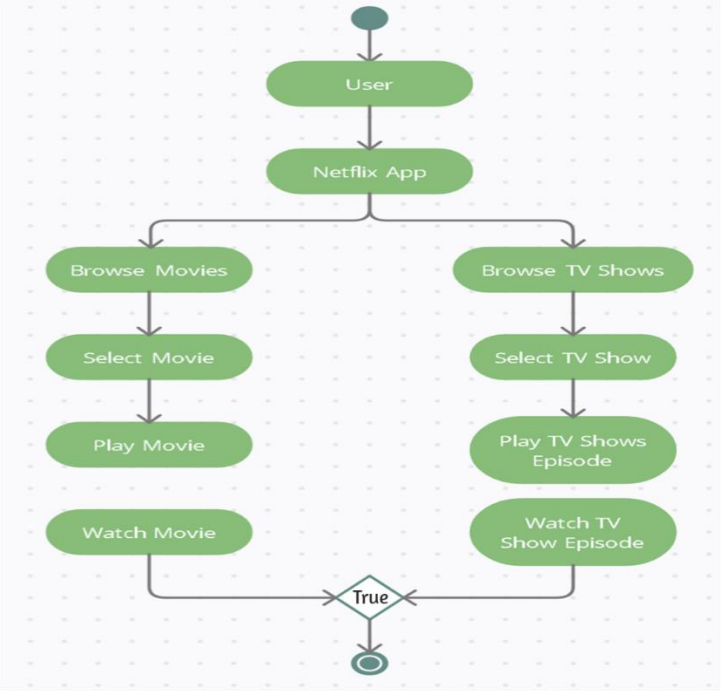

Figure 7.4-1: Activity Diagram

7.5 ENTITY DIAGRAM

It is a graphical representation that depicts relationships among people, objects, places, concepts or events within an information technology system.

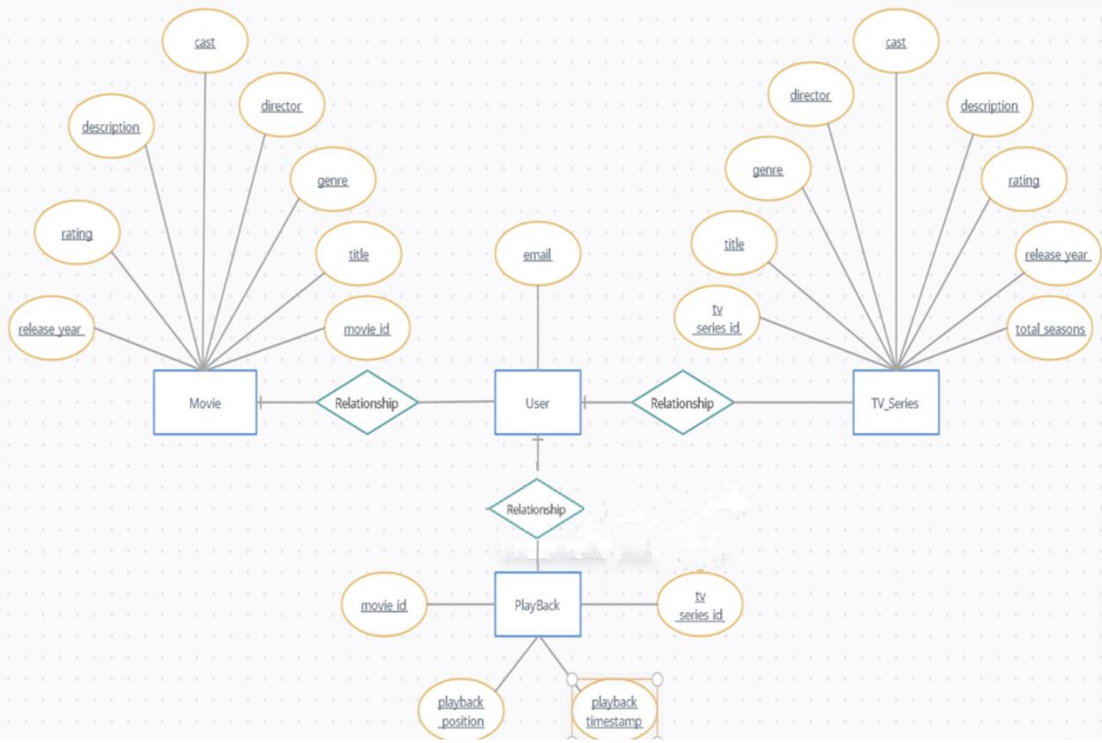

Figure 7.5-1: Entity Diagram

7.6 DATA FLOW DIAGRAM

A data flow diagram (DFD) is a graphical or visual representation using a standardized set of symbols and notations to describe a business's operations through data movement.

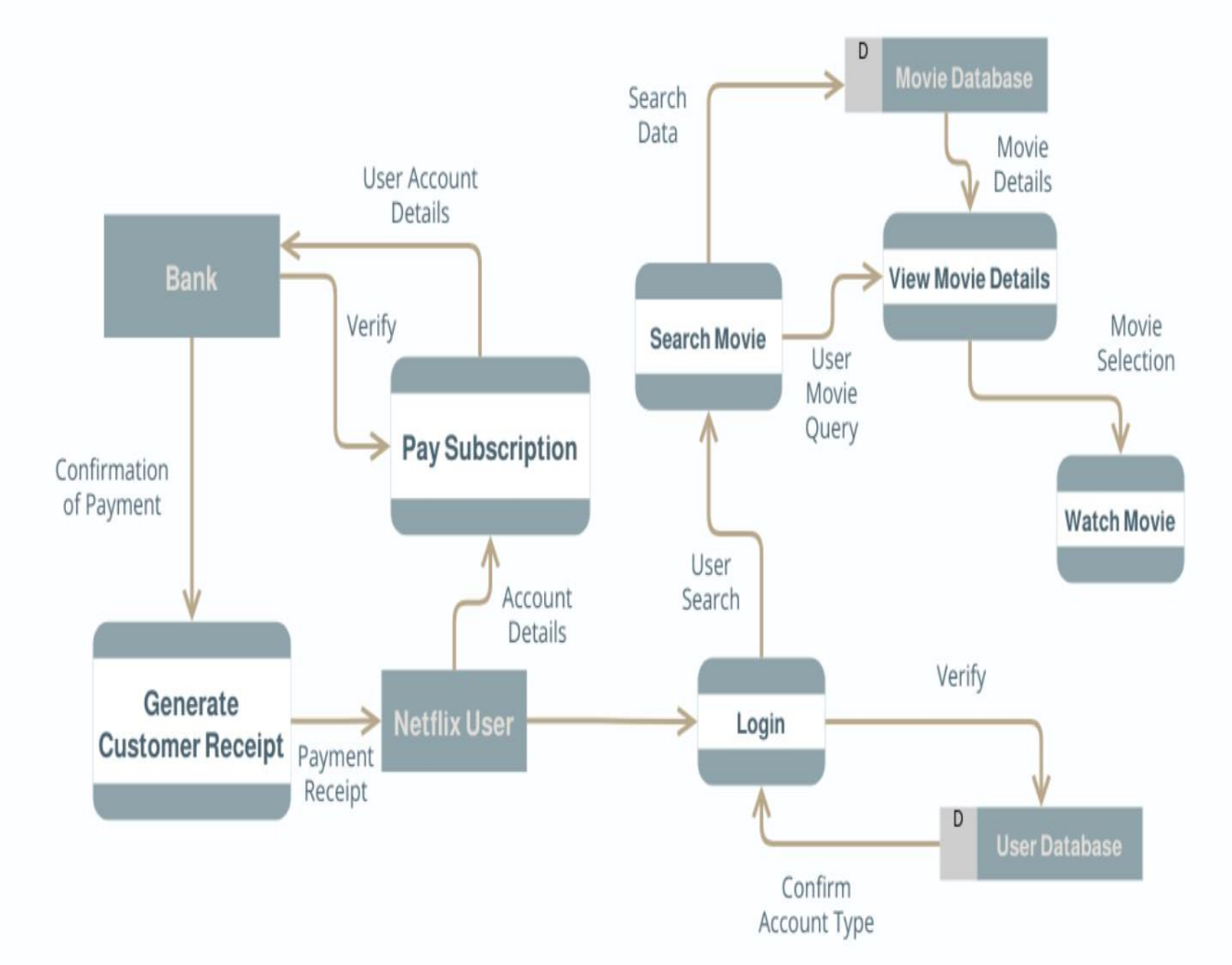

Figure 7.6-1: Data Flow Diagram

8. TESTING

Table 8-1: Testing

Test Case Id	Test Case Name	Action	Test Data	Expected Result	Actual Result	Test Result
T001	Launch Site and Sign In page	Local host 3002	Local host 3002	Sign up page displays	Sign up page displays	Pass
T002	Sign In page email field.	Enter email	trailone099@gmail.com	User should successfully sign in.	User can successfully sign in.	Pass
T003	Confirm your email	Check your index of email	trailone009@gmail.com	User should receive confirm email.	User can receive confirm email successfully.	Pass
T004	Dashboard displayed	Movies and episode are visibe		After successfully sign in user should be able to see dashboard.	After successfully sign in user can see dashboard.	Pass
T005	Verifying user can be able to see movie info after clicking			User should be able to see movie info after clicking on it.	User can see movie info after clicking on it.	Pass
T006	Verifying user watched Data		trailone009@gmail.com	After successfully sign in user able to show Watched History	Watched data is shown successfully	Pass
T007	Verifying My List	Click on myList		All liked videos will be shown there	All videos are there which user liked	Pass

9. DATA DICTIONARY

9.1 USER SIGN UP TABLE

Table 9.1-1: User SignUp

Sr No.	Field Name	Datatype	Explanation
1.	**Signupid**	**String {maxLength:20}**	**For User Signup id**
2.	Email	String {maxLength:50}	For User Full Name

9.2 USER SIGN IN TABLE

Table 9.2-1: User SignIn

Sr No.	Field Name	Datatype	Explanation
1.	Username	String {maxLength:20}	For Users User Name
2.	Email	String {maxLength:20}	For User Email

10. USER MANUAL

Sign in page after opening the website.

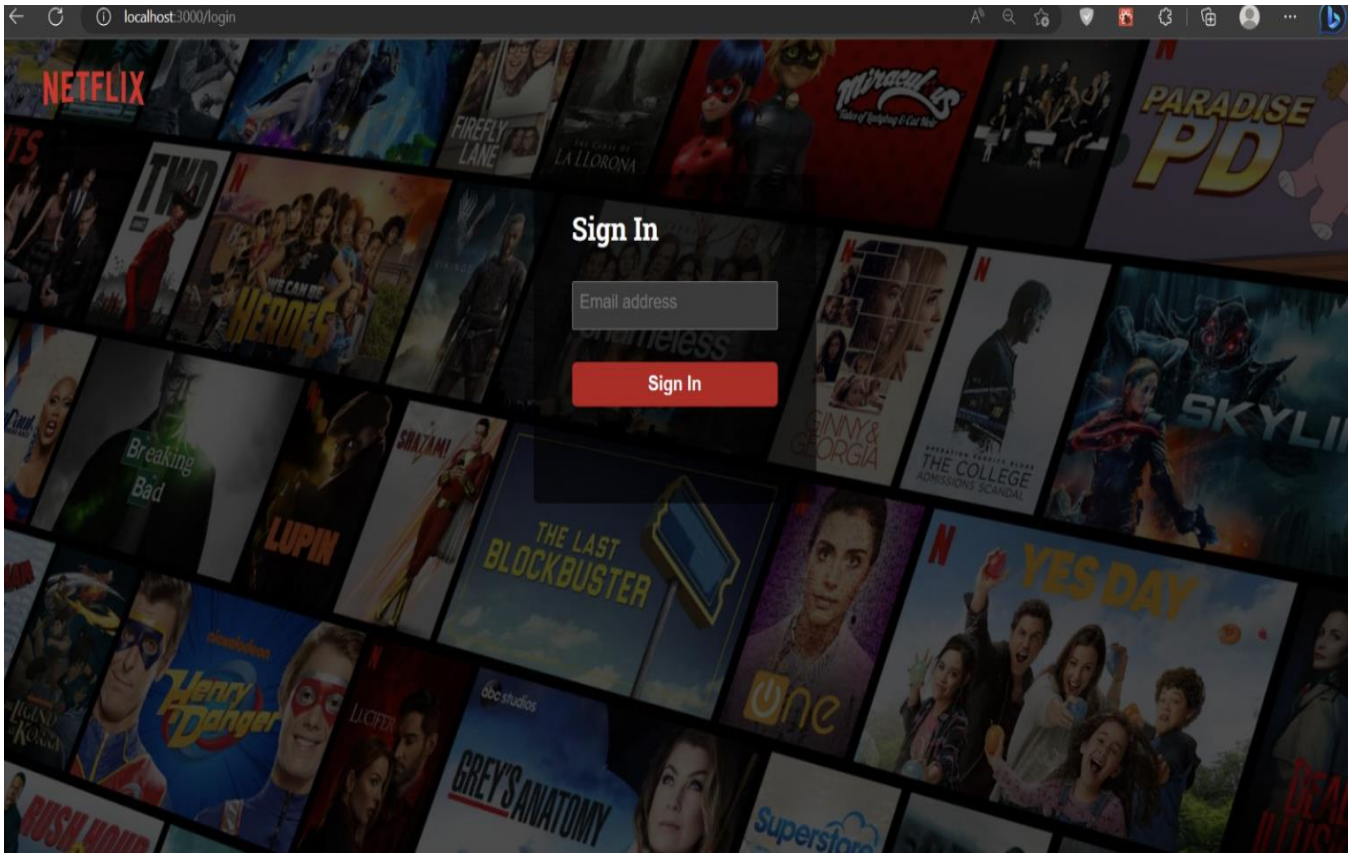

Figure 10-1: SignIn Page

It’s a web page where users enter the information required to access this website’s services.

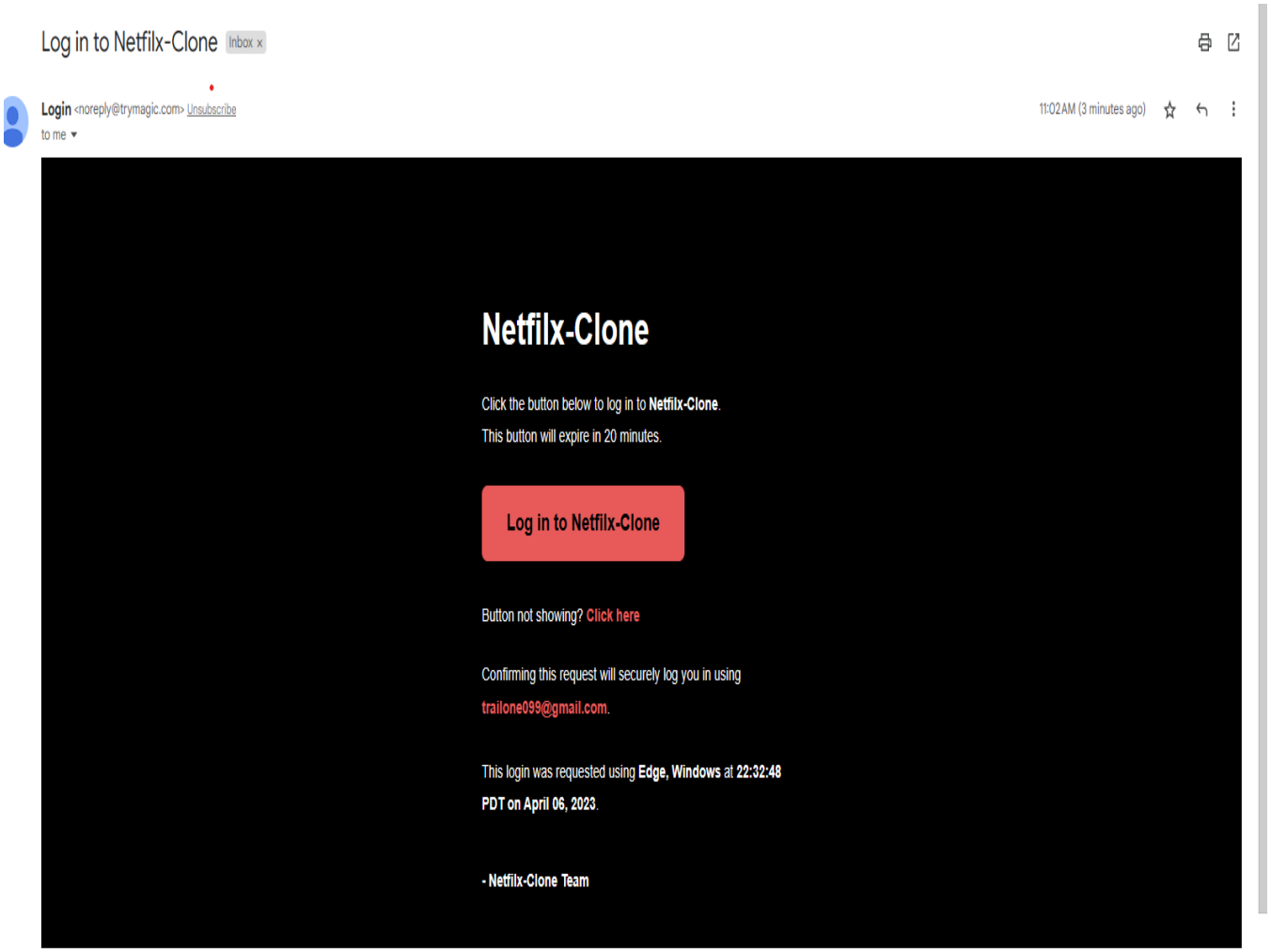

Figure 10-2: SignIn Email Page

This login page allows a user to gain access to the application by entering their user Email id.

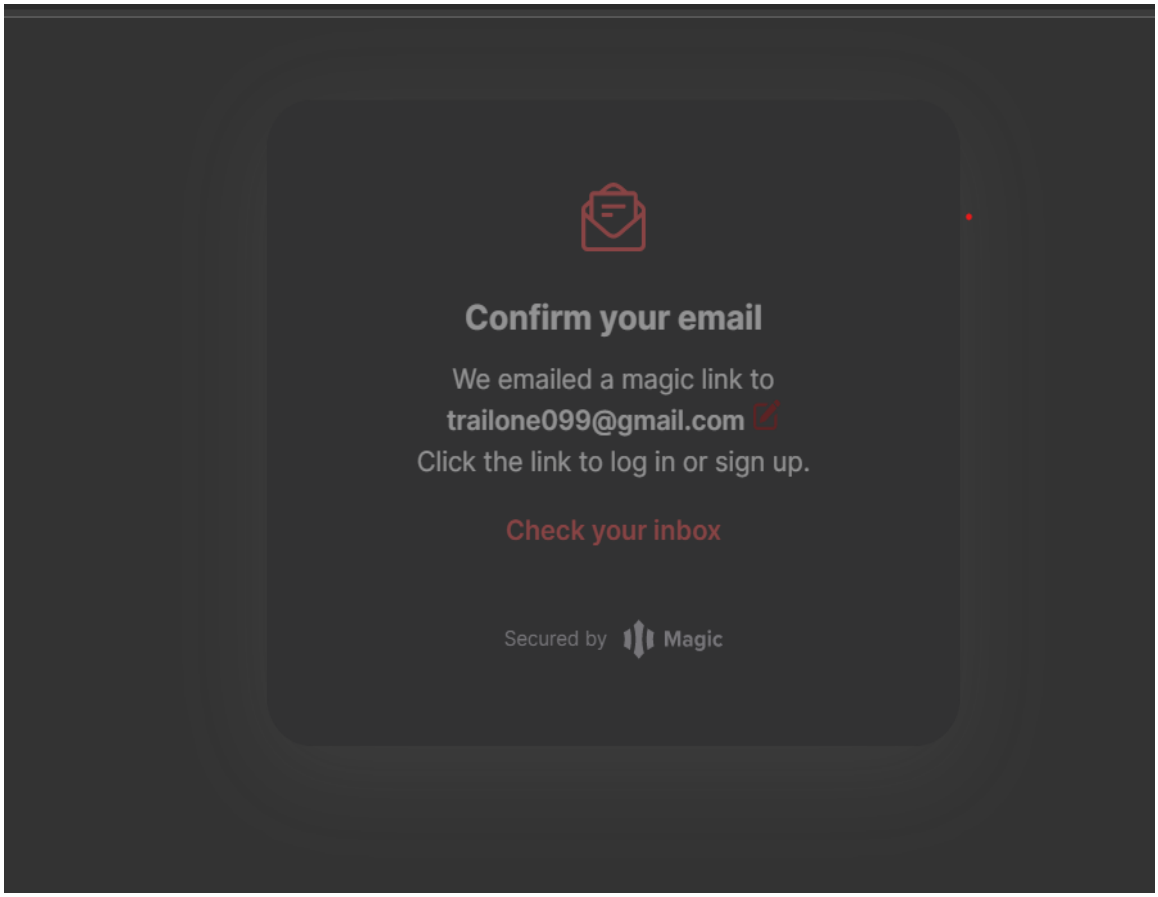

Figure 10-3: Confirm your email

After verification one can enter the dashboard section.

Figure 10-4: Dashboard

Movies of user's Choice

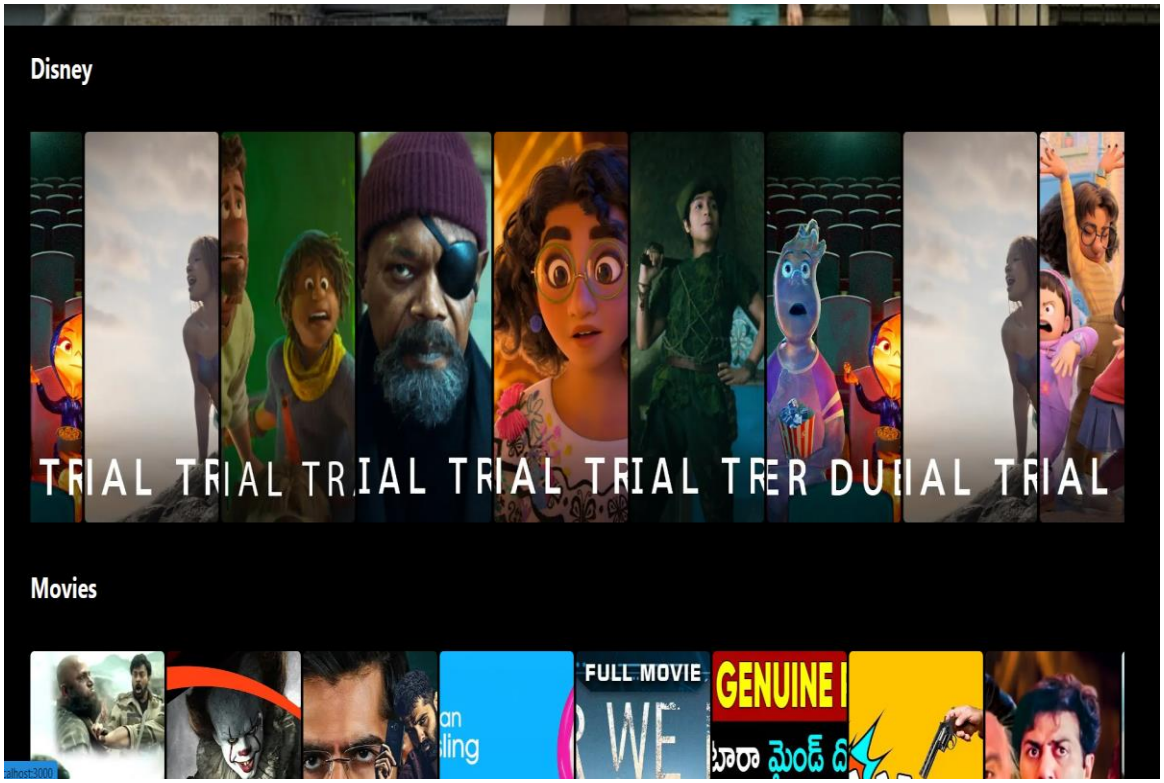

Figure 10-5: Movies of user's choice

Popular movies are available in different sections.

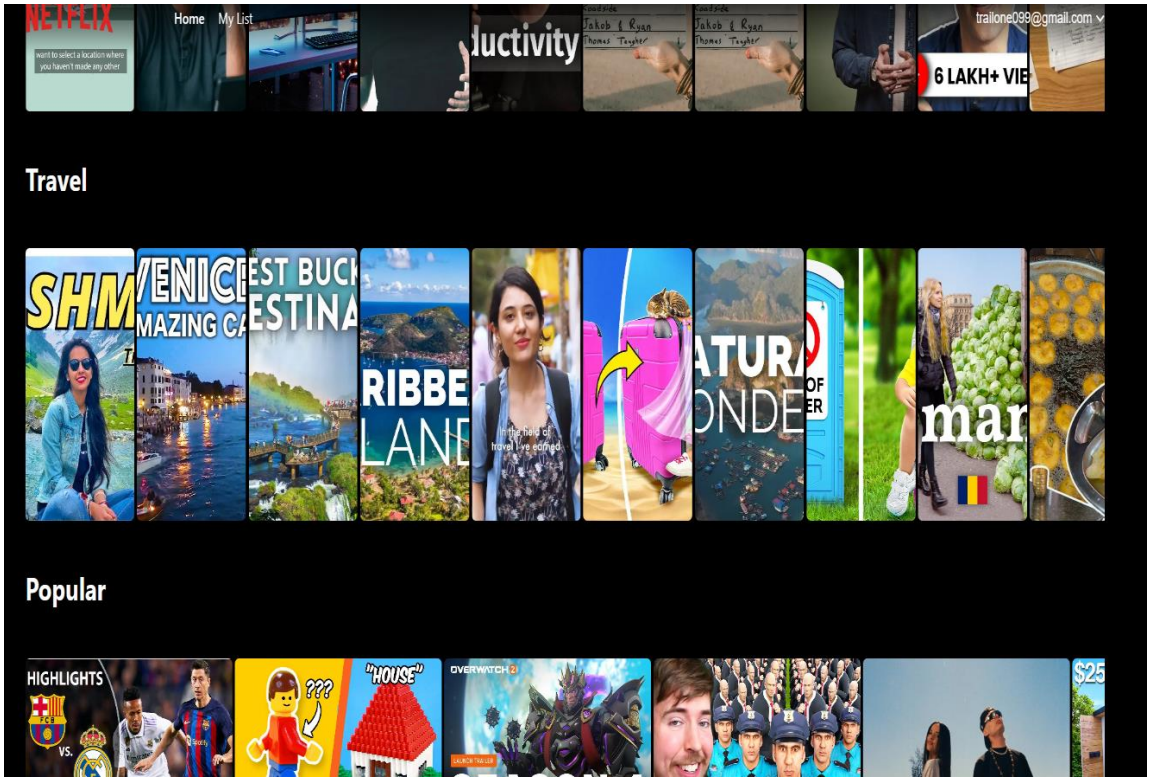

Figure 10-6: Different sections of movies

Video Player

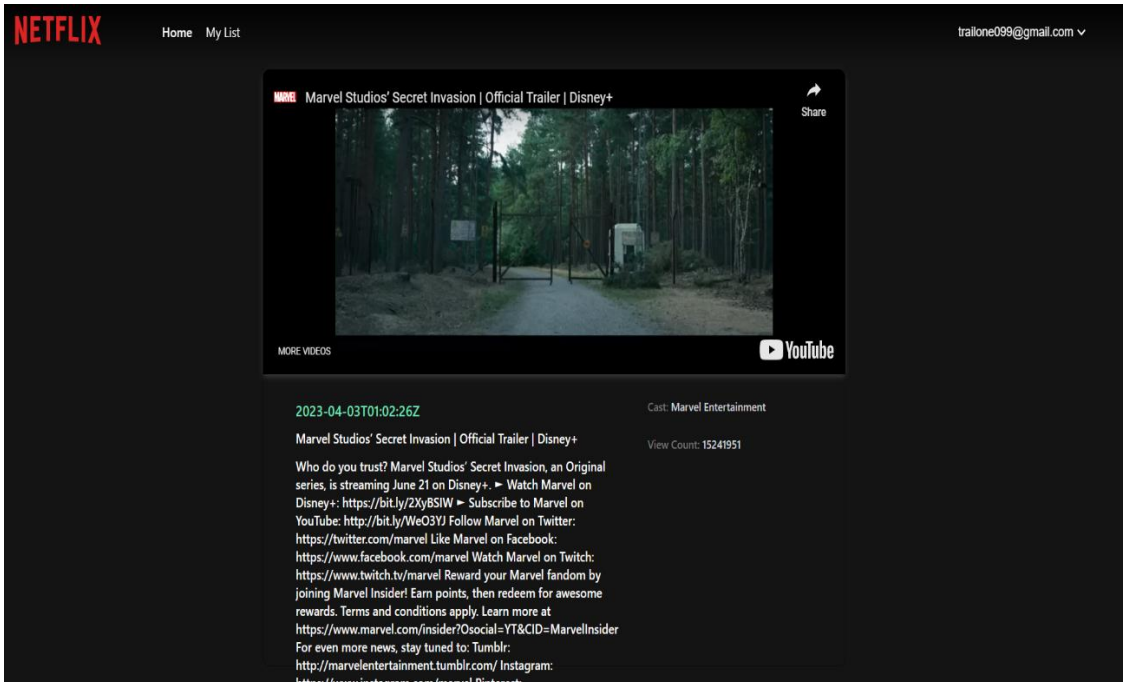

Figure 10-7: Video Player

User Database Table

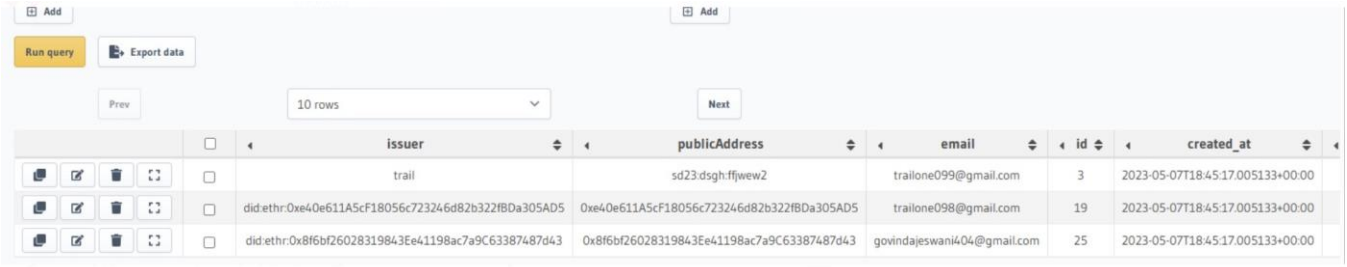

Figure 10-8: User Database

User with watched and liked videos

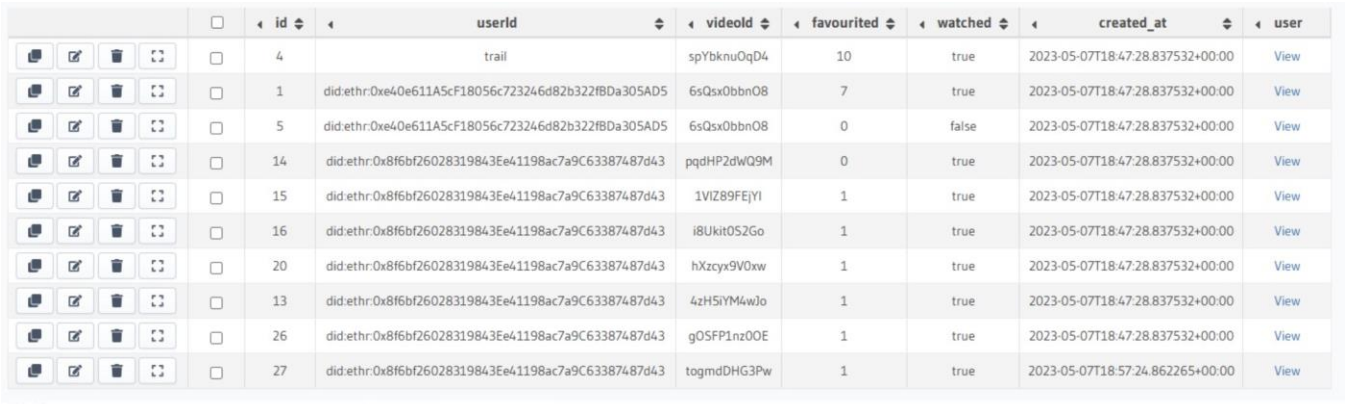

Figure 10-9: Watched and liked video

11. CONCLUSION

However, one can conclude that Netflix has revolutionized the entertainment industry by changing the way people consume film and television content. The company's vast library of original content combined with its user-friendly interface and affordable subscription plans has made it a favorite among viewers worldwide. Netflix's success has also prompted other streaming services to emerge, contributing to the shift away from traditional cable and satellite TV. Nonetheless, criticism has arisen regarding the company's monopolistic practices and its impact on the film industry's traditional revenue streams. Despite the challenges, Netflix remains a dominant player in the entertainment industry with millions of subscribers worldwide.

12. FUTURE WORK

In a nutshell, it can be summarized that the future scope of the project circles around maintaining information regarding:

- We can add Sign-in with Username and Password.
- We can integrate a help section if the user faces problem.
- Implementing the notification section.

The above-mentioned points are the enhancements which can be made to increase the applicability and usage of this project.
We have left all the options open so that if there is any other future requirement in the system by the user for the enhancement of the system then it is possible to implement them. In the last we would like to thank all the persons involved in the development of the system directly or indirectly. We hope that the project will serve its purpose for which it is develop there by underlying success of process.

13. ANNEXURE

13.1 REFERENCES

- https://www.fit.vutbr.cz/study/courses/ITS/public/ieee829.html
- https://techwhirl.com/user-guide-template/
- http://www.projectinsight.net/project-management-basics/project-management-schedule
- https://www/onetonline.org/search/t2/examples/43231507?s=management%20software
- https://techwhirl.com/business-requirement-document-brd-template/
- https://web.cs.dal.ca/hawkey/3130/srs,emplate-ieee.dochttps://bia.ca/risk-management -the-what- why-how/
- https://www.slideshare.net/MuhammadAshiqurRahma/chat-application-full-documentation
- https://www.freeprojectz.com/project-report/1671

13.2 ABOUT TOOLS AND TECHNOLOGY

13.2.1 Next Js

- **Next.js** is an open-source web development framework created by the private company Vercel providing React-based web applications with server-side rendering and static website generation.

13.2.2 Hasura

- **Hasura** frees one from developing backend functionality to make data from a SQL database readable and writable via an API

13.2.3 PostgreSql

- **Postgres** is a free and open-source relational database management system (RDBMS) emphasizing extensibility and SQL compliance.

13.2.4 Visual Studio Code

- Visual Studio Code is source code editor developed by Microsoft for Windows, Linux and MacOS.
- This includes support for embedded Git and debugging, syntax highlighting intelligent code completion, snippets and code refactoring.

13.3 ABOUT COLLEGE

Our spirituous efforts are directed towards leading our student community to such an acme of technical excellence that can satisfy the requisition of the industry, the nation, and the globe at large. The generation of an entirely different community of students aiming at attaining technical expertise and utilizing the technical know-how in the service of mankind is at the root of our efforts. We have the following aims before us.

- To offer guidance, motivation, and inspiration for full growth of hidden traits.
- To impart technical and need-based education by conducting elaborated training programs.
- To shape and mound the personality of future generation.
- To construct fertile ground for resting dire challenges.
- To cultivate the feeling of belongingness amongst the faction of engineers.

Establishment:

U. V. Patel College of engineering (UVPCE) situated in Ganpat Vidyanagar campus was established in septmber-1997 under the aegis of Mehsana District Education Foundation with a view of educating and training young talented students of Gujarat at the field of engineering and technology to meet the needs. of industries in Gujarat and beyond for the growth of the industries. Page 64 of 65 The College is named after Shri Ugarchandbhai Varanasibhai Patel, a leading industrialist of Gujarat, for his generous support. It is a self-financed institute approved by All India Council for Technical Education (AICTE), New Delhi, the Government of Gujarat and now it became the constituent college of Ganpat University.

The College is spread over 25 acres of land and is a part of Ganpat Vidyanagar Campus. It has two ultra-modern buildings of architectural splendor measuring 6100 sqm. and 2700 sqm., for housing classrooms, tutorial rooms, seminar hall, offices, drawing hall, workshop, library, well equipped different departmental. Laboratories, several computer labs with internet connectivity through 1 Gbps Fiber link, satellite link education center with two-way audio and one-way video link with Gandhinagar etc.

Placement plays a key role in shaping the future of the students and keeping this in mind; the institute has forged healthy relations with prominent industries. These tie-ups are mutually beneficial. The industries get a chance to employ the resources of the institute for their R & D. In turn they extend every possible help to the institute, especially about providing hands-on training to the students. As part of this initiative, Incubation Centre/Start-up activities have also been developed.