A
Synopsis Report on

PRAVAH STREAMING WEBSITE

For the course of AI-ML in SEM-6

INFORMATION TECHNOLOGY

BY

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CERTIFICATE

This is to certify that the Mini Project report on **PRAVAH STREAMING WEBSITE** has been submitted by **AVINASH ANDHALE** (20104138), **PRATHAMESH NAIK** (20104061), **VISHNUKANT MULE** (20104065), who are a Bonafede students of A.P. Shah Institute of Technology, Thane, Mumbai, as a part fulfilment of the requirement for the degree in Information Technology, during the academic year 2022-2023 in the satisfactory manner as per the curriculum laid down by University of Mumbai.

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ACKNOWLEDGEMENT:

CHAPTER 1:

INTODUCTION:

- ➢ Streaming: The technology of transmitting audio and video files in a continuous flow over a wired or wireless internet connection.

- ➢ It refers to any media content-live or recorded delivered to computer and mobile device via internet and played back in real-time.

- ➢ Music, video and other types of media files are prearranged and transmitted in sequential packets of data so they can be streamed instantaneously

- ➢ The objective of this mini project is to design and implement a streaming website that provides personalized recommendations to users.

- ➢ Personalized recommendations are important for the streaming industry because they can help improve user engagement, satisfaction, and retention.

- ➢ The website will use a recommendation system that leverages user preferences and media metadata to suggest relevant content to users.

- ➢ The recommendation system will be built using machine learning algorithms, such as collaborative filtering and content-based filtering.

- ➢ Social media platforms and others broadcast everything from celebrity events, promotions and life streaming to streaming between users. You can live stream on any compatible smartphone, tablet, TV, computer or gaming console with a relatively fast internet connection

PROBLEM STATEMENT:

- ➢ Online streaming services have become increasingly popular over the past few years, providing users with a vast selection of movies and TV shows. However, with so many options available, it can be overwhelming for users to find content that suits their preferences.

- ➢ As a result, the problem that needs to be addressed is how to create a streaming website that not only offers a diverse selection of content but also provides personalized recommendations to each user based on their viewing history, preferences, and behavior.

- ➢ The goal is to design and develop a user-friendly streaming website that utilizes recommendation algorithms to help users discover new and relevant content, while also providing them with a seamless viewing experience.

PURPOSE:

- ➤ A video streaming service is an on demand online entertainment source for TV shows, movies and other streaming media.
- ➤ Provides an Alternative to cable and satellite on demand service
- ➤ Lower cost
- ➤ Faster access
- ➤ Let's you consume TV shows, movies, podcasts and more online without downloading files

OBJECTIVE:

- ➤ To build a User-friendly online streaming website.
- ➤ To provide entertainment platform for source TV shows, movies,
- ➤ To provide a Parent-child restriction lock
- ➤ Developing a user-friendly and visually appealing interface for the streaming website that allows users to easily browse and discover content.
- ➤ Implementing recommendation algorithms that use user data, such as viewing history, preferences, and behaviour, to suggest relevant and personalized content to users.
- ➤ Offering a diverse selection of content, including movies and TV shows, that caters to different genres and languages.
- ➤ Providing multiple streaming quality options to ensure a seamless and uninterrupted viewing experience for users.
- ➤ Integrating secure payment gateways for subscription-based services and ensuring that user data is protected.
- ➤ The user can register & create a account through Email and can login through the credential's
- ➤ To let the user, have a login user id and password to secure their account.

SCOPE:

- ➢ The Software Requirements Specification captures all the requirements in a single document. The website title is Live video Streaming currently under beta version. The website has a very attractive and simple graphical user interface. The System is supposed to have the following features:

- ➢ It supports multiple login system.

- ➢ Streaming video is content sent in compressed form over the Internet and displayed by the viewer in real time.

- ➢ It allows subscribed Web site visitors to download video files.

- ➢ Through our Online Live Video streaming website, the company can broadcast TV channels through online.

- ➢ Registered user can broadcast live events, watch movies, series, cartoons etc through online. Even it has option to upload and download videos in the Video manager.

- ➢ The registered user subscription charge to stream videos if totally free of cost.

ALGORITHM USED:

- ➢ Data Collection: Collecting data about the user's viewing history, search queries, and preferences. This can include data on the movies and TV shows that the user has watched or searched for, as well as the genres and categories that the user is interested in.

- ➢ Data Pre-processing: Cleaning and formatting the collected data to make it suitable for analysis. This can include removing irrelevant data, handling missing values, and normalizing the data.

- ➢ Feature Extraction: Extracting important features from the pre-processed data that will be used in the recommendation algorithm. This can include features such as the user's viewing history, the ratings and reviews for movies and TV shows, and the genres and categories of content that the user is interested in.

- ➢ Similarity Calculation: Calculating the similarity between the user and the available movies and TV shows in the database. This can be done using various similarity metrics, such as cosine
similarity or Pearson correlation.

- ➢ Recommendation Generation: Generating a list of recommended movies and TV shows based on the calculated similarity scores. The top recommendations can be based on the highest similarity scores or can incorporate other factors such as user ratings and reviews.

- ➢ Refinement and Personalization: Refining the recommendations over time based on user feedback and interaction with the website.

CHAPTER 2:

Literature review:

Sr.no	Title	Author(s)	Year	Outcomes	Methodology	Result
1.	The Netflix Effect:	Sidneyeve Matrix	December 2014	shows opts to view them via Netflix	Experimental study	Successful
2.	YouTube phenomenon	Lucila Dughera	February 2018	describe the practices of the creators of educational content	Experimental Project research	Successful

CHAPTER 3

PROPOSED SYSTEM:

FEATURES AND FUNCTIONALITY:

➤ User registration and login: Users can create an account with the website by registering their email and password, or use their social media accounts to login.

➤ User profile: Users can customize their profile by adding their name, profile picture, and other personal information. They can also update their preferences, such as language, location, and content interests.

➤ Media content: The website will provide a library of media content, including movies, TV shows, documentaries, and other videos. The content will be categorized by genre, language, and rating.

➤ Recommendation engine: The recommendation engine will suggest media content to users based on their viewing history, preferences, and ratings. The engine will use machine learning algorithms, such as collaborative filtering, to identify patterns in user behaviours and recommend content that is likely to be of interest to them.

➤ Search and filtering: Users can search for media content using keywords, titles, or actors. They can also filter results by genre, language, and rating.

➤ User ratings and reviews: Users can rate and review media content that they have watched. Their ratings and reviews will be used by the recommendation engine to improve the accuracy of its recommendations.

➤ Watchlist: Users can add media content to their watchlist for future viewing. The watchlist will be saved to their profile and they can remove items from the list at any time.

➤ Social sharing: Users can share media content that they have watched on their social media accounts, such as Facebook and Twitter.

➤ Subscription management: Users can manage their subscription to the website, including changing their plan, updating their billing information, and cancelling their subscription.

➤ Admin panel: The website will have an admin panel where administrators can manage users, media content, and the recommendation engine. They can also view analytics and reports on user behaviour, such as top-rated content and most viewed categories.

Security:

All authorized users can access the features of this website. The user has to enter valid login id and password to access their account.

Maintainability:

There will be no maintenance required for this web application. The database is provided by the end-user and therefore is maintained by this user.

CHAPTER 4:

REQUIREMENT ANALYSIS:

Software Requirements:

1. Operating System: Windows, Linux, or macOS

2. Web server software: Apache, Nginx or IIS

3. Backend programming language: Python, Java, PHP, or Ruby

4. Backend web framework: Django, Flask, or Ruby on Rails

5. Database management system: MySQL, PostgreSQL, or MongoDB

6. Frontend web technologies: HTML, CSS, JavaScript

7. Machine learning libraries: TensorFlow

Hardware Requirements:

1. Processor: Intel Core i5 or higher

2. RAM: 8 GB or more

3. Storage: 50 GB or more

4. Graphics Card: NVIDIA GeForce GTX 1050 or higher (for training machine learning models)

5. Internet connectivity: Broadband or faster

CHAPTER 5:

PROJECT DESIGN:

Context Flow Diagram

       The Context Flow Diagram (CFD) describes the external entities acting on the system. The environment in which the system is used is depicted in the figure.

4.4 Data Flow Diagram

The DFD uses four symbols, and are explained below:

∗ A **SQUARE,** which defines the source or destination of system data also called an external entity, is not responsible for any task performed by the system.

∗ An **ARROW** represents data flow. It represents the path over which data travels in the system. A data flow can move between processes, flow into or out of data stores to and from external entities. It must be must be given a name the arrow head showing the direction of flow.
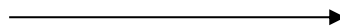
∗ A **CIRCLE** or **BUBBLE** represents a process that transforms data from one to another by performing some tasks with the data. The process name must be given a general idea of its function.
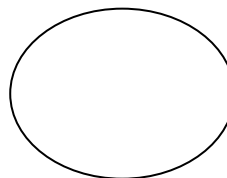
∗ Two **HORIZONTAL PARALLEL LINES** represents data store, a data store is a place where data is held temporarily from one transaction to the next or is stored permanently.
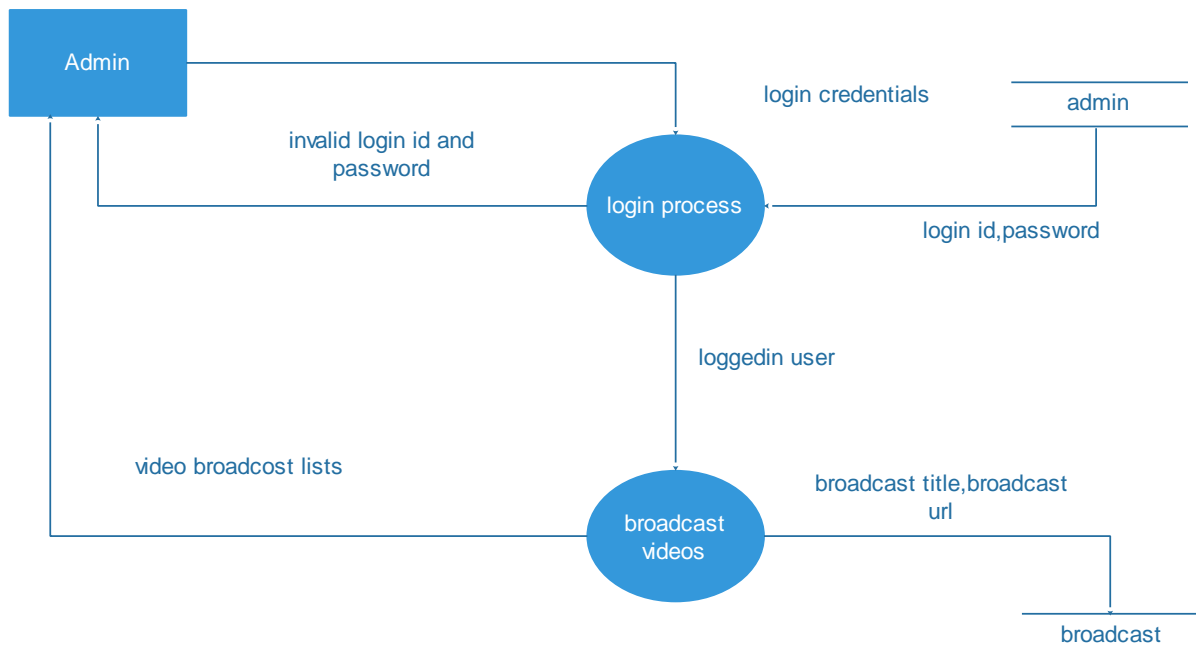
Data flow diagram describes what data flow (logical) rather than how they are processed, so it does not depend on hardware, Software, data structure or file organization.
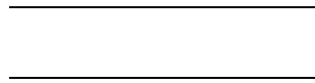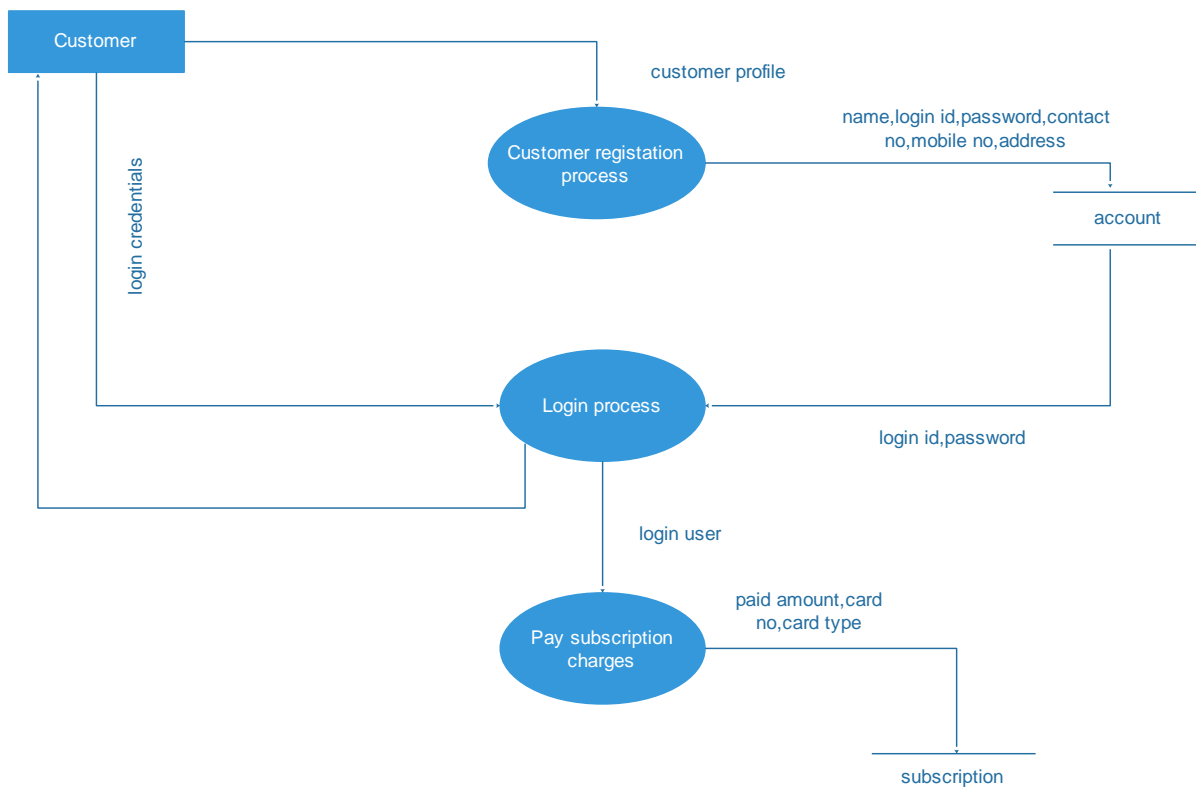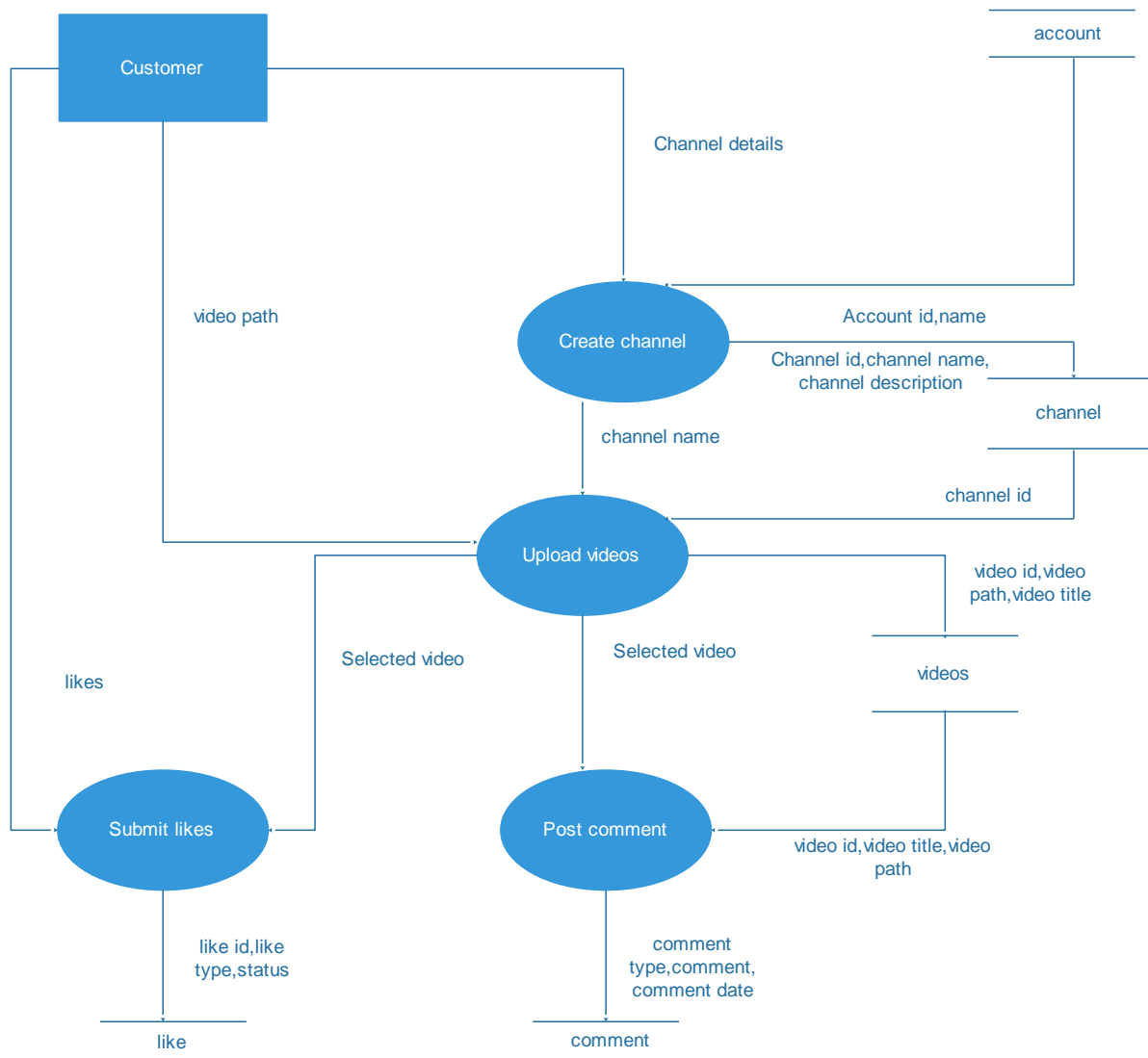
TOP Level DFD – Level 1
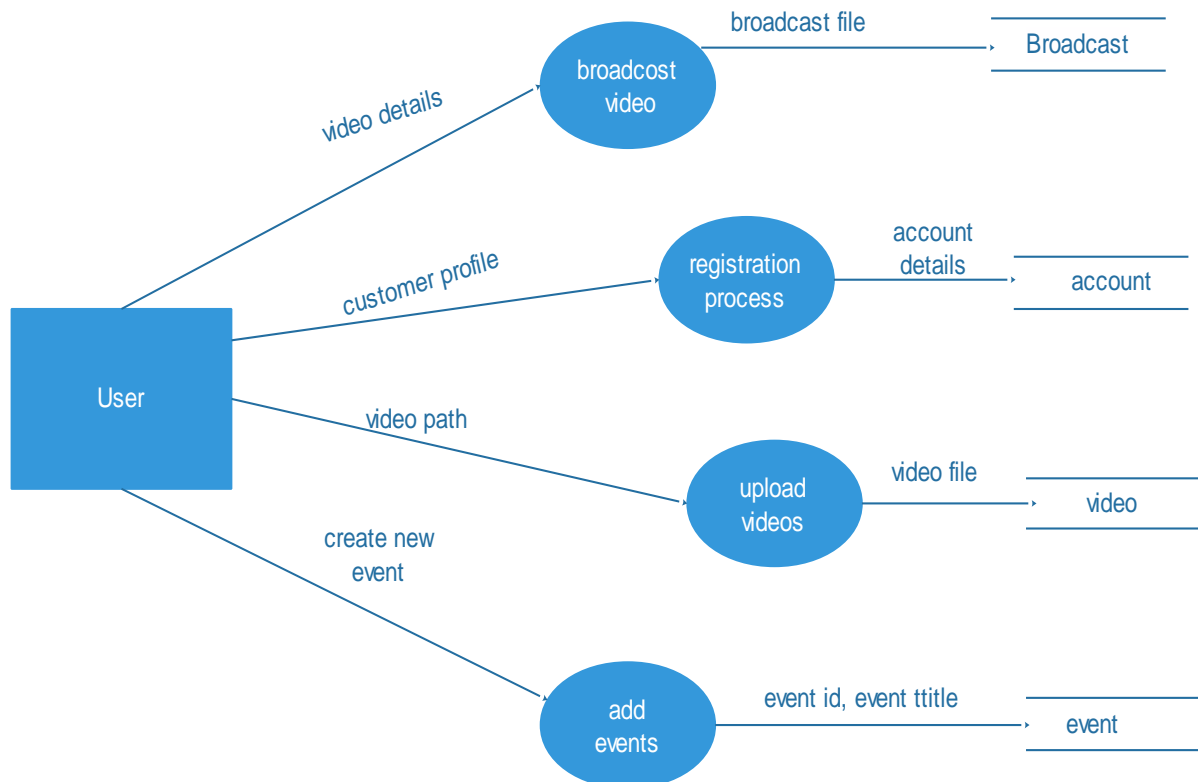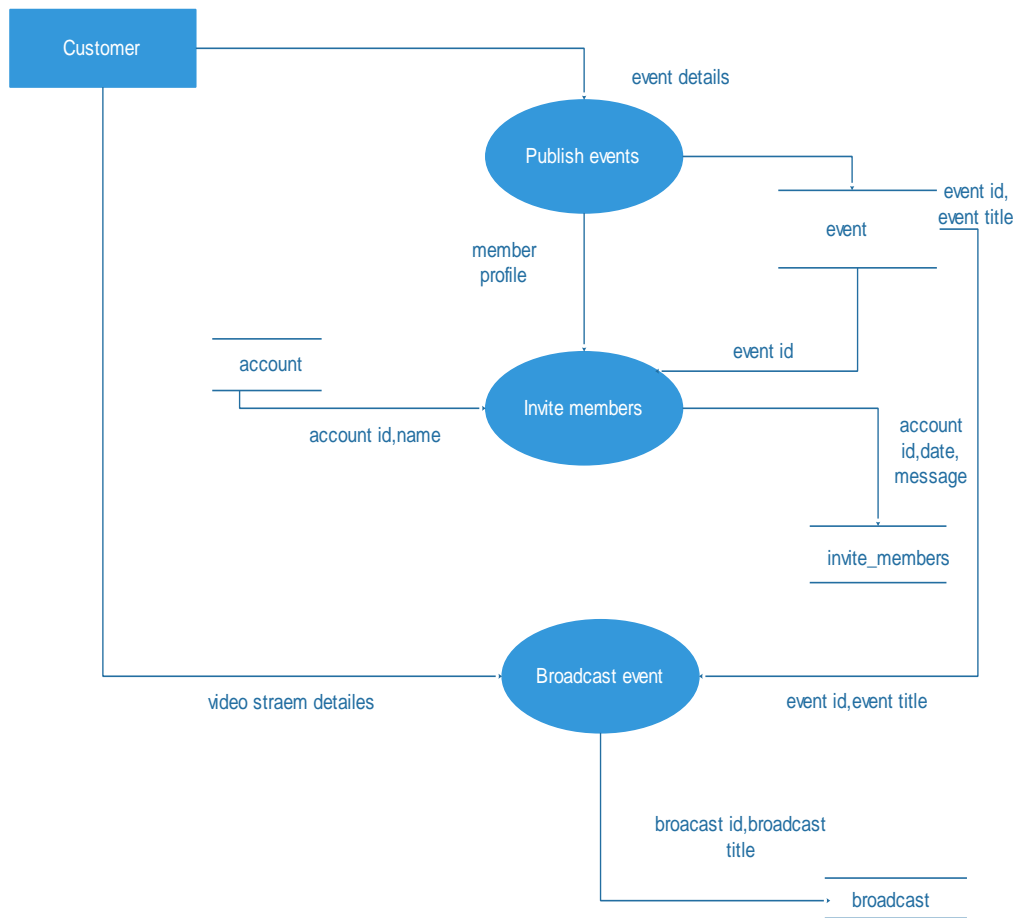
DFD – Level 2: Broadcasting videos

DFD Level 3: Login process and subscription charge payment (free Subscription)

DFD Level 4: Uploading videos and sending comment

DFD Level 5: Publishing events and broadcasting events

PROJECT OUTCOMES:

1. A functional streaming website: The main outcome of the project is a fully functional streaming website that provides users with personalized recommendations based on their viewing history and preferences.
2. Improved user engagement: The recommendation system can help improve user engagement by suggesting relevant content to users that they are more likely to watch and enjoy.
3. Improved user retention: Personalized recommendations can also help improve user retention by providing users with a more satisfying experience that keeps them coming back to the website.
4. Improved user experience: The search and filtering functionality, watchlist, and user ratings can also contribute to an improved user experience by providing users with more control over their content consumption and allowing them to easily find and organize content that they are interested in.
5. Evaluation of recommendation system performance: The effectiveness of the recommendation system can be evaluated using standard metrics such as precision, recall, and F1 score. This can provide insights into how well the system is performing and identify areas for improvement.
6. Potential for future work: The project can serve as a foundation for future work, such as incorporating more diverse sources of data, incorporating real-time feedback, and using machine learning to adapt to changing user preferences.

Overall, the main outcome of the project is a functional streaming website with a recommendation system that provides a more personalized and engaging experience for users. The project can also provide insights into the performance of the recommendation system and potential areas for improvement.

CHAPTER 6:

HTML/ CSS	Hyper Text Markup Language
NODE JS	Scripting language
REACT	JavaScript Library to build UI
Media Server Cloud nary	
Mongo-DB	Database
ML	Visual Studio

CHAPTER 7:

PROJECT SCHEDULING:

SR no.	Group Member	Time Duration	Work Done
1.	AVINASH ANDHALE	1st week of	Topic finalization and requirements gathering. Research papers Collecting data
2.	VISHNUKANT MULE	2nd week of	Implementation of front End, Back End implementation Algorithm integration
3.	PRATHAMESH NAIK	3rd week of	Testing and fault analysis and the error detection Final Project completed.

CHAPTER 8:

IMPLEMENTATION:

The new video streaming system will have all the functionalities to broadcast events and watch movies online. The corporate can just login to our website and register for a new account which confirmation mail will be sent. The corporate can then forward the invitation to all the participants from their registered ID.

Accounts: In this module user can register by entering their profile information. After registration user can access accounts page by entering login id and password.

Video manager: This module allows user to upload videos and they can edit uploaded video description and its contents.

My Channel: In this module the visitors can add or subscribe users' channel by entering their Email ID. Whenever the user uploads new video it sends mail notification to the visitor.

Events broadcasting: This module can be used to broadcast a live event. The Live module home page contains list of events and Completed Events sections. The user needs to enter event name, event date, event time, etc.

Dashboard module: There are two types of users in this module. They are administrator and employees.

Live broadcasting: This module is for administrator where administrator can stream TV channels by entering embedded link.

Comments and likes: The registered user can post their comments and like the uploaded videos

User Analysis: The user dashboard will contain the data analysis of their daily Activities.

1.User Interface Design: The project will require a user interface design that provides a seamless and engaging user experience. The design should include the following elements:
A homepage that features personalized recommendations and highlights popular content.
A search bar and filtering functionality that allow users to find specific content.
A user profile that displays their viewing history, watchlist, and account settings.
A media player that allows users to stream content.

2.Front-end Development: The website will need to be built using front-end technologies such as HTML, CSS, and JavaScript. The front-end should include:
A responsive design that works on desktop and mobile devices.
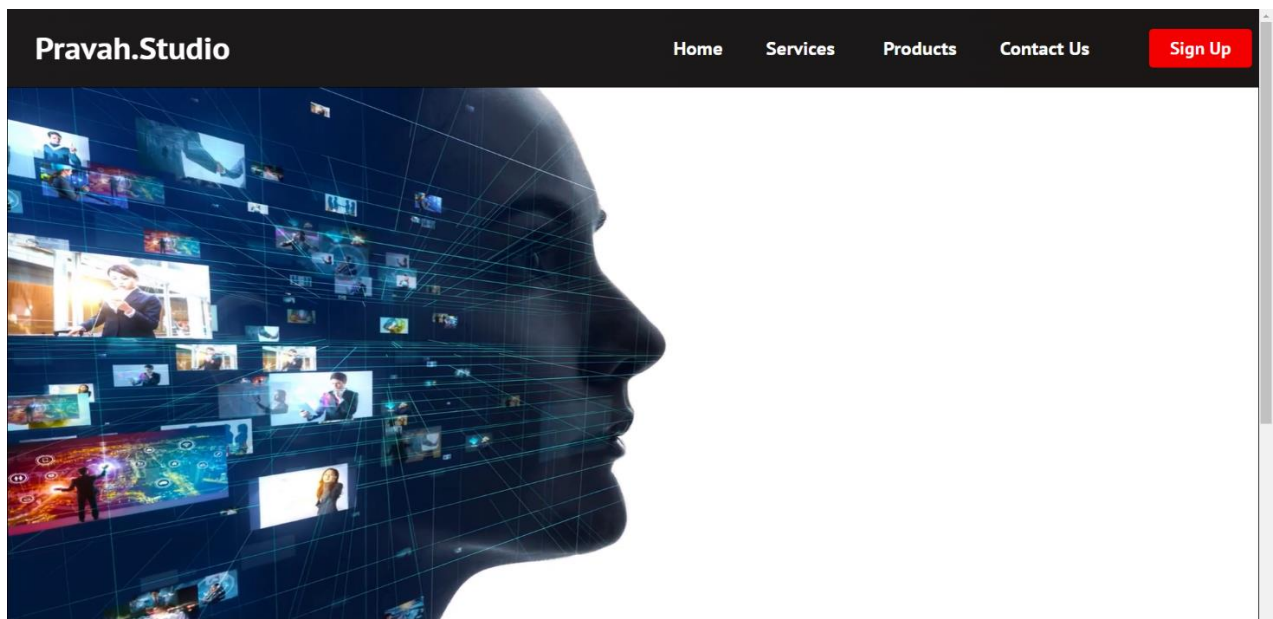A clean and intuitive user interface that is easy to navigate.
Integration with the back-end recommendation system to display personalized content to users.

3.Back-end Development: The website will require a back-end development that manages user accounts, media content, and the recommendation system. The back-end should include:
A database that stores user information, viewing history, and media content.
A recommendation system that generates personalized recommendations based on user data.
An API that connects the front-end to the back-end and allows data to be transferred between them.
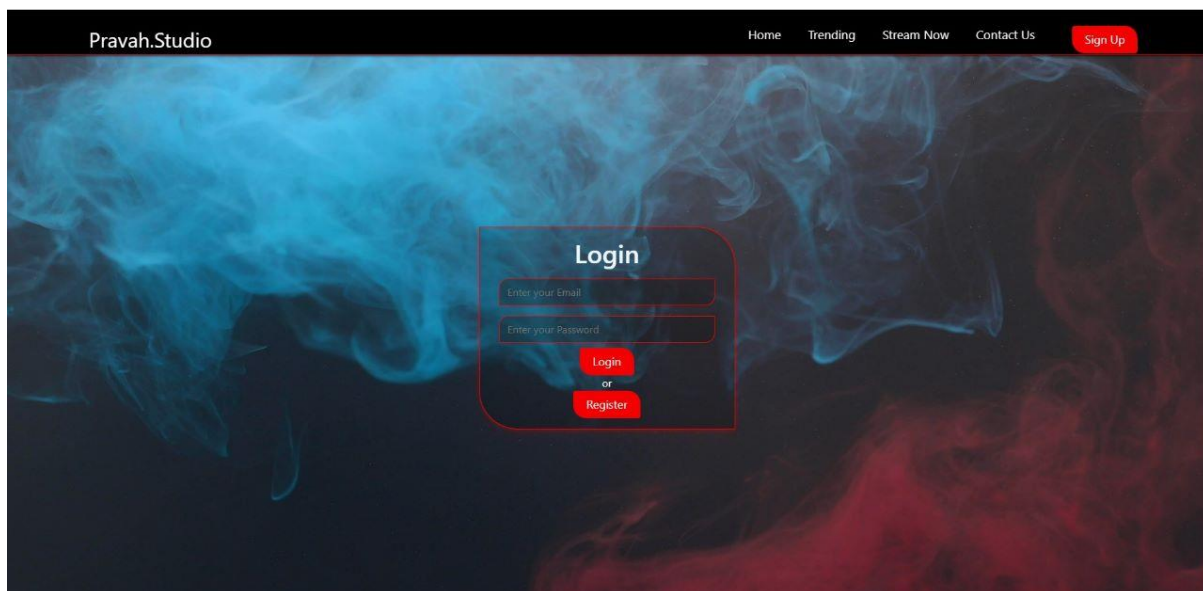
4.Recommendation System Design: The recommendation system will need to be designed using machine learning algorithms such as collaborative filtering or content-based filtering. The design should include:
Data collection and processing to generate user profiles and content features.
Model training using machine learning algorithms to generate recommendations.
Model evaluation to test the effectiveness of the recommendation system.

5.Testing and Deployment: The website should be thoroughly tested to ensure that it is functional, responsive, and secure. Once testing is complete, the website can be deployed to a web server or cloud platform such as AWS or Google Cloud.
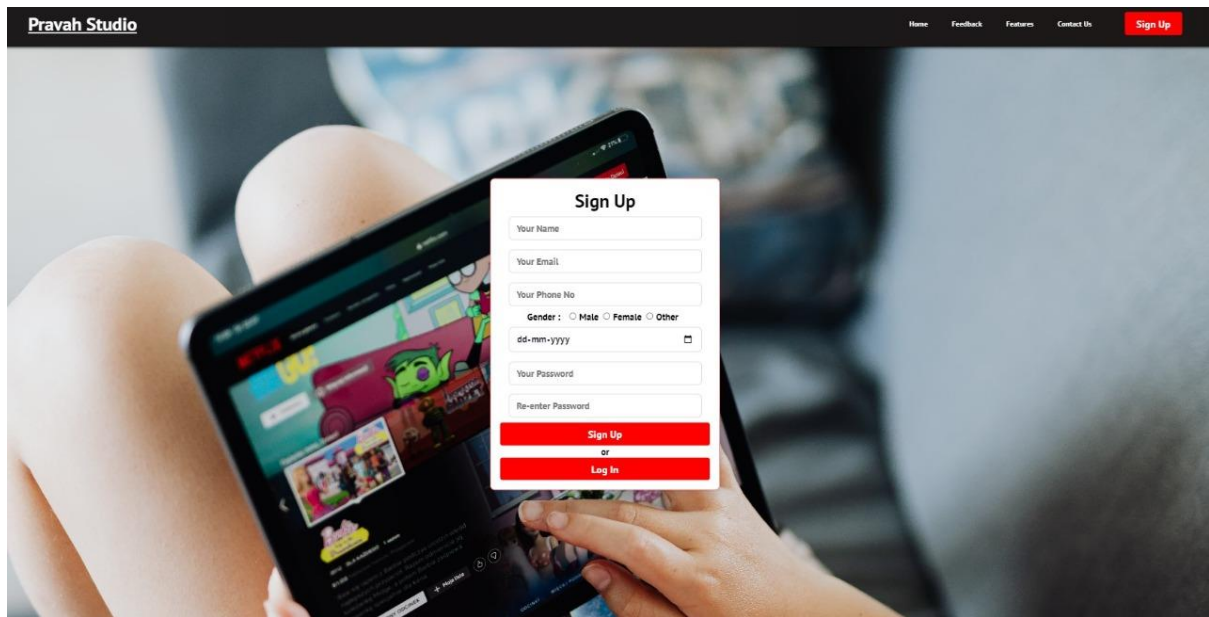
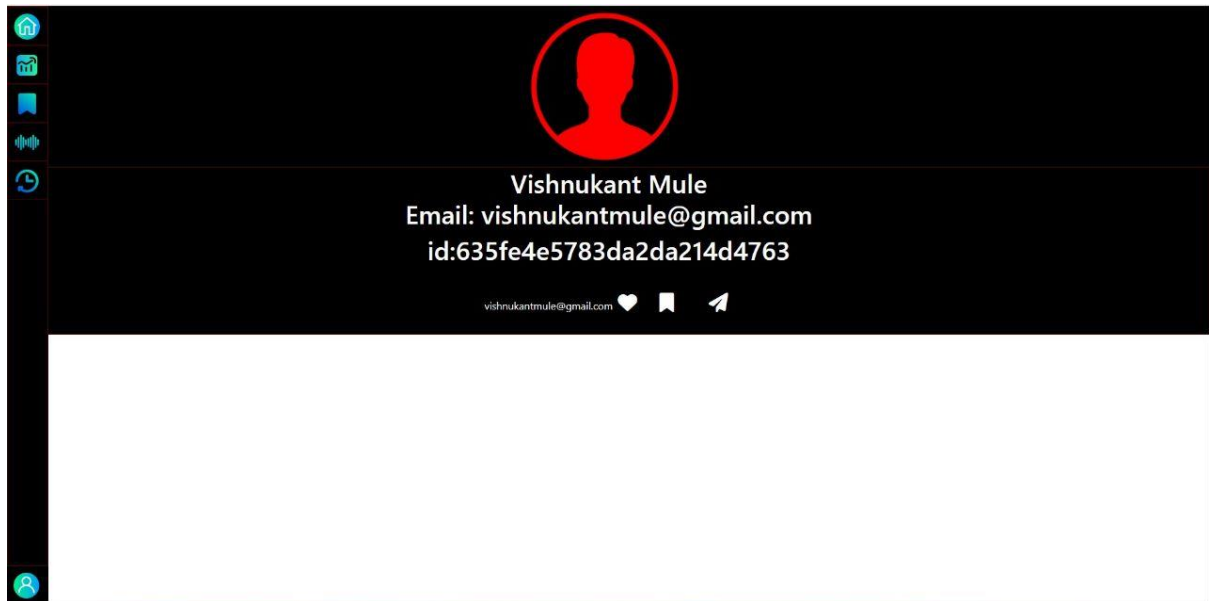## Main Dashboard:

Login Page:

New User Account (Sign Up):

Confirmation Mail sent to User:

Reply   Reply all   → Forward   Archive   Delete   Set flag   ...

Email Confirmation

V   vishnukantmule@gmail.com <vishnukantmule@gmail.com>
08:38 PM

To: vishnukantmule@gmail.com

You have Successfully Registered to Pravah. To verify your Email Please [Click here](#)

User Account Details:

Browsing page:
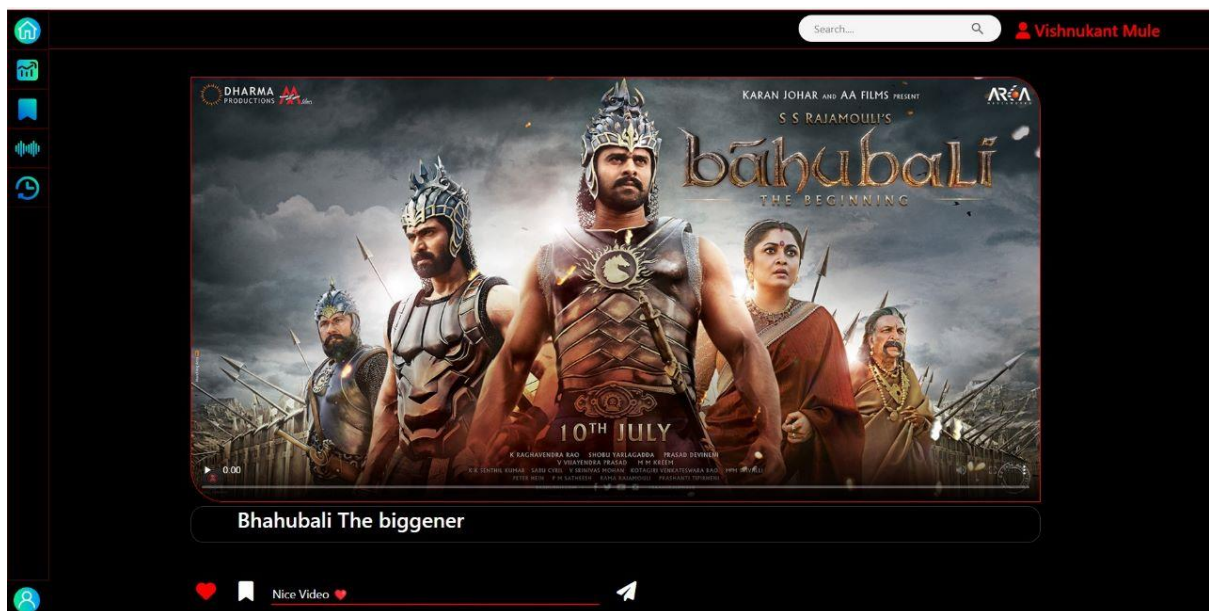
Media Contents (Films, Series, etc)
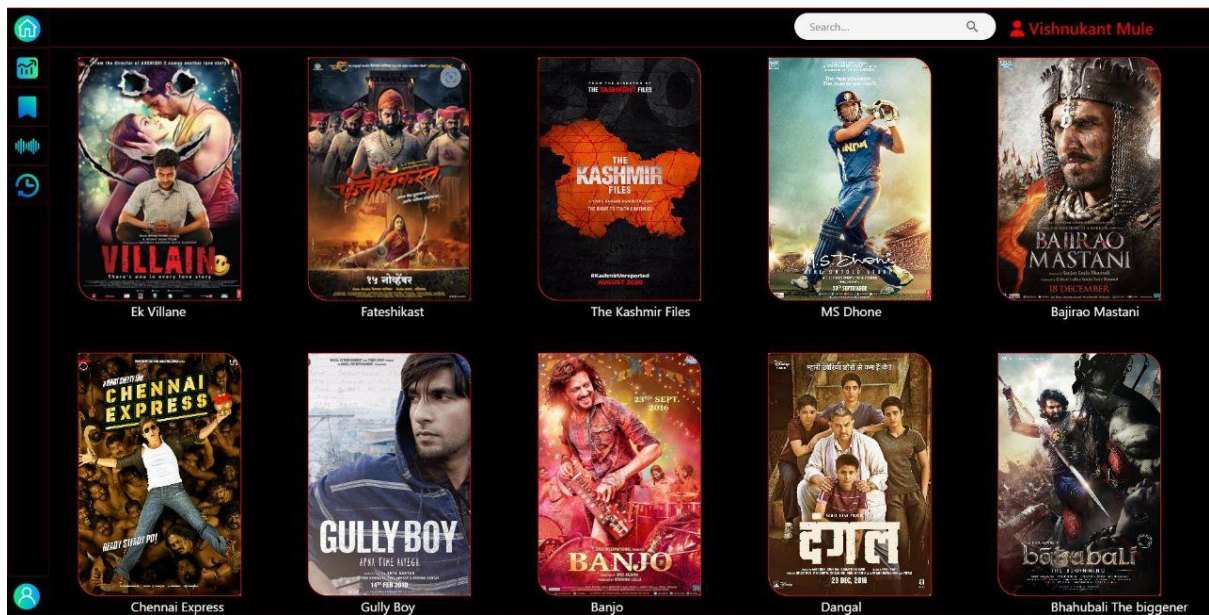
Movie/ Film Playing:

Feedback & Help desk:

CHAPTER 9:

Result:

In the result section, the findings of the mini-project can be presented. This may include a detailed description of the website, its features, and the algorithm used for recommending videos to users. Additionally, the data used for training the recommendation algorithm can be discussed, including how it was collected and pre-processed.

The performance of the recommendation algorithm can also be evaluated, and metrics such as accuracy, precision, recall, and F1-score can be used to assess its effectiveness. The result section may also include visualizations such as graphs and charts to illustrate the performance of the recommendation algorithm.

Discussion:

In the discussion section, the implications and limitations of the mini-project can be presented. This may include an analysis of the strengths and weaknesses of the recommendation algorithm and how it compares to other recommendation systems.

The ethical implications of recommending videos to users can also be discussed, particularly with regards to potential biases and privacy concerns. Furthermore, the limitations of the data used for training the algorithm can be explored, and recommendations for future work can be proposed to improve the accuracy and reliability of the recommendation algorithm.

Overall, the result and discussion section of a mini-project on a streaming website with recommendations should provide a comprehensive analysis of the project's findings and its potential impact.

CHAPTER 10:

CONCLUSION:

In conclusion, a streaming website with recommendation system is a valuable project that can provide users with a personalized and engaging experience. By incorporating machine learning algorithms and data analysis, the recommendation system can generate tailored content suggestions based on the user's viewing history and preferences. This can increase user engagement, retention, and satisfaction with the website. The website can also provide various features and functionalities, such as a search bar, filtering, watchlist, user ratings, and others, to enhance the user's experience.

The project requires various steps, including user interface design, front-end development, back-end development, recommendation system design, and testing/deployment. It can also require the incorporation of various technologies and tools, such as HTML, CSS, JavaScript, machine learning algorithms, databases, and web servers.

Overall, the project topic of a streaming website with recommendation system is an excellent way to demonstrate programming and data analysis skills, as well as the ability to develop a functional and engaging website that meets the users' needs.

Reference:

1. The Netflix Effect: Teens, Binge Watching, and On-Demand Digital Media Trends

https://www.utpjournals.press/doi/abs/10.3138/jeunesse.6.1.119/

2. A literature review of the YouTube phenomenon

https://www.researchgate.net/publication/349350098_A_literature_review_of_the_YouTube_phenomenon_and_the_teaching_and_learning_practices/

3. Reference websites: Netflix, Hotstar and YouTube.