



# UTM

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## **PROPOSAL PHASE 1**

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## TABLE OF CONTENTS

<b>1.0 Introduction.....</b>	<b>2</b>
<b>2.0 Background Study.....</b>	<b>3</b>
<b>3.0 Problem Statement.....</b>	<b>6</b>
<b>5.0 Objectives.....</b>	<b>11</b>
<b>6.0 Scope.....</b>	<b>12</b>
<b>7.0 Project Planning.....</b>	<b>13</b>
7.1 Human Resource.....	14
7.2 Work Breakdown Structure (WBS).....	15
7.3 Gantt Chart.....	16
<b>8.0 Requirement Analysis.....</b>	<b>18</b>
8.1 Current Business Process.....	20
<b>9.0 Transaction Requirement.....</b>	<b>23</b>
<b>10.0 Benefit and Summary of Proposed System.....</b>	<b>24</b>
<b>11.0 Summary.....</b>	<b>25</b>

## 1.0 Introduction

In the ever-expanding realm of cinematic entertainment, the vast array of movies available can be both a blessing and a challenge for enthusiasts seeking their next cinematic experience. As the volume of films continues to grow, the need for an efficient and comprehensive Movie Search Engine becomes increasingly imperative. This database project aims to address this demand by developing a sophisticated and user-friendly Movie Search Engine that empowers users to explore and discover films based on various criteria.

The Movie Search Engine is designed to be a centralized hub for cinephiles, offering a seamless and intuitive platform to search for movies, access relevant information, and make informed viewing choices. By harnessing the power of a robust database, this project seeks to organize and index an extensive collection of movies, allowing users to navigate through genres, directors, actors, release years, and more, with ease.

The primary objective of this endeavor is to provide users with a tailored and personalized movie-watching experience. Through advanced search algorithms and user-friendly interfaces, the Movie Search Engine aims to deliver precise and relevant results, ensuring that users can quickly identify movies that match their preferences. Additionally, the project aims to enhance the overall user experience by incorporating features such as reviews, ratings, and recommendations, fostering a sense of community and interaction among movie enthusiasts.

As technology continues to evolve, so too does the landscape of the film industry. This Movie Search Engine project is positioned at the intersection of cinema and information technology, offering a dynamic and responsive solution to the challenges posed by the ever-expanding cinematic universe. By amalgamating the richness of film data with cutting-edge search functionalities, this project aspires to redefine the way users engage with and discover movies, ushering in a new era of cinematic exploration.

## 2.0 Background Study

The state of movie databases today frequently fails to offer consumers a smooth and complete experience. Current platforms might not have comprehensive information, have trouble with UI design, or have trouble maintaining current databases. In order to overcome these issues, our proposed project aims to create a powerful, dynamic, and user-focused movie search engine that meets the many interests and preferences of movie buffs all over the world.

The advent of digital platforms and streaming services has transformed the traditional film-watching experience. Audiences no longer rely solely on theaters or television broadcasts to access their favorite movies; instead, they turn to online platforms that offer a vast library of films on-demand. This shift has created a demand for efficient and powerful tools that can help users navigate through an extensive database of movies.

As the number of movies available online continues to grow, the challenge lies in creating an intuitive and effective way for users to find content that aligns with their preferences. Movie Search Engines address this challenge by providing a centralized platform where users can search for films based on various criteria, such as genre, release year, director, actors, and more. These engines aim to enhance the user experience by simplifying the process of discovering and accessing movies from diverse sources.

The foundation of any robust Movie Search Engine lies in its underlying database. A well-structured and organized database is crucial for efficiently storing, managing, and retrieving vast amounts of movie-related data. The database project associated with a Movie Search Engine encompasses the design, implementation, and optimization of a relational database that houses information about movies, including details like title, genre, cast, crew, release date, and user ratings.

## Key Components of the Database Project:

### **Data Modeling:**

The database project begins with the creation of a conceptual data model that defines the entities and their relationships. This involves identifying the key entities such as movies, genres, directors, actors, and establishing the connections between them.

### **Schema Design:**

The conceptual model is then translated into a relational schema that outlines the tables, attributes, and constraints. This step involves normalizing the data to minimize redundancy and improve overall database efficiency.

### **Data Population:**

The database is populated with relevant data extracted from reliable sources. This may involve integrating data from movie databases, user reviews, and other reputable repositories.

### **Query Optimization:**

To ensure fast and responsive search functionality, the database queries must be optimized. Indexing, query caching, and other performance tuning techniques are employed to enhance the efficiency of data retrieval.

### **User Interface Integration:**

The database project is seamlessly integrated with the user interface of the Movie Search Engine. This involves developing a user-friendly front end that allows users to interact with the database and retrieve information based on their preferences.

Developing a Movie Search Engine within the context of a database project comes with its set of challenges. The diversity of movie data, constant updates, and the need for real-time information pose challenges in terms of data accuracy and synchronization. Additionally, the system must be designed to scale efficiently as the database grows in size.

In conclusion, the background study of a Movie Search Engine within the framework of a comprehensive database project underscores the importance of a well-structured and organized database in enhancing the user experience. As the digital landscape of movies continues to expand, the development of sophisticated search tools becomes imperative for users seeking a seamless and personalized cinematic journey. A thoughtfully designed and optimized database serves as the backbone of such Movie Search Engines, enabling them to deliver accurate and relevant results to users in their quest for the perfect cinematic experience.

### 3.0 Problem Statement

A smart and user-friendly movie search engine is in demand due to the sheer volume of films that are available across multiple platforms in the continually changing entertainment industry. The current database systems frequently lack the powerful capabilities needed to effectively search through the wide variety of films, making it more difficult for users to find relevant and personalized content.

There are issues with the current movie databases in terms of:

**Inadequate Search Functionality:** Users find it challenging to locate films based on subtle preferences like mood, topics, or particular story points because most movie databases nowadays only offer basic search parameters.

**Limited Personalization:** It is difficult for users to get recommendations that are specifically matched to their own interests and preferences, which makes watching movies less interesting and customized.

**Data Fragmentation:** As a result of movie information being dispersed over several platforms, databases are left fragmented, with no one, central source for complete, current information about every movie.

**Inadequate Dynamic Filtering:** Users frequently find it difficult to dynamically filter and rank movie results according to social media buzz, reviews, or real-time trends, which makes it harder for them to identify popular or highly regarded content.

**User Interface Challenges:** People may find it difficult to easily navigate the large movie landscape due to the lack of intuitiveness in the current movie search interfaces, which negatively affects the user experience overall.

Our plan seeks to create a novel Movie Search Engine by utilizing state-of-the-art database management strategies and cutting-edge algorithms in order to overcome these difficulties. With the help of this solution, users will be able to explore movies in a personalized and immersive way, finding and watching movies that suit their tastes in a fun and efficient way.

## **4.0 Proposed Solutions**

To address the issue of inadequate search functionality, the proposed solution emphasizes the utilization of advanced search algorithms. Due to ongoing advancements in processing power and algorithmic capabilities, there is a high level of technological feasibility. These sophisticated algorithms are capable of effectively processing complex user queries related to preferences such as mood, subject matter, or specific plot points. The economic viability of this approach is supported by reasonable development costs, as improved search capabilities are expected to enhance user satisfaction and engagement.

Regarding the next problem, personalized recommendations can be achieved through the integration of machine learning algorithms using readily available tools and frameworks. By analyzing users' viewing history, preferences, and behavior, machine learning algorithms can generate tailored movie recommendations. This integration of machine learning is expected to significantly increase user engagement and satisfaction, resulting in a more enjoyable and personalized movie-watching experience. The associated expenses for implementing this approach can be justified economically.

The proposal recommends addressing data fragmentation by establishing a centralized database that consolidates information from different platforms. This can be achieved by integrating APIs to retrieve and combine movie data. From a technical standpoint, this approach is feasible and enables the creation of a more comprehensive and dependable database. The operational aspect is also feasible, as the costs associated with data integration and maintenance are reasonable and can be justified. By having a centralized source of current information, users can enjoy the advantages of streamlined search and decision-making processes.



By integrating dynamic filters, we can overcome inadequate dynamic filtering. It is technically possible to sort and rank movie results based on social media buzz, reviews, and real-time trends. This can be achieved through API integration with social media platforms and real-time data sources. The operational aspect of regularly updating and monitoring these dynamic filters is manageable, ensuring that users always have access to the most current trends and insights. This feature greatly enhances the user experience by providing real-time information about popular and highly acclaimed content.

Lastly, to overcome user interface challenges, it is technically feasible to redesign the user interface using modern design frameworks in order to enhance navigation. The costs associated with this redesign are reasonable and justifiable, considering the potential expenses for training and support during the transition. A user-friendly interface plays a vital role in improving the overall user experience, enabling users to navigate the extensive movie database seamlessly and find relevant content with greater ease and intuition.

In summary, the proposed solutions leverage technology advancements, algorithms, and frameworks to create a feasible approach. By addressing data fragmentation, enhancing search functionality, providing personalized recommendations, integrating dynamic filters, and redesigning the user interface, the goal of improving user satisfaction and engagement in the movie exploration experience is achieved. The solutions offer a comprehensive and user-friendly platform, ensuring access to reliable data, intuitive navigation, and real-time information on popular movies and trends.

## **1. Technical Feasibility :-**

Proposal : To create a database for a movie search engine that includes elements like individualized recommendations, user reviews, ratings, and sophisticated search options.

Feasibility Study :

- Technology Stack : Determine whether utilizing contemporary technology such as databases (MySQL, Oracle), cloud computing (AWS, Azure), and programming languages (Python, JavaScript) is feasible.
- Scalability : As users, movies, and data points increase, make sure the system can accommodate them.
- Security : Put in place data encryption, secure authentication, and defense against typical online threats.

## **2. Economic Feasibility :-**

Proposal : To create a service that's affordable by implementing a freemium business model, where basic elements are provided for free and additional functionality need premium memberships.

Feasibility Study :

- Development Costs: Compute how much it will cost to hire designers and developers and buy the tools and software that they'll need.
- Operational costs: Take into account the price of hosting, upkeep, and assistance.
- Revenue Generation: Examine prospective sources of income such partnerships, premium memberships, and ads.

### **3. Operational Feasibility :-**

Proposal : To make sure there is an intuitive user interface, simple navigation, and effective search engines.

Feasibility Study :

- User Acceptance: To determine user expectations and interest, hold focus groups or surveys.
- Training Requirements: Determine what kind of training users and support personnel need.
- Operational Impact: Examine the ways in which the new system will modify current workflows and procedures.

## 5.0 Objectives

1. Comprehensive Movie Database :
  - To compile and keep a large and up-to-date movie database, including genres, directors, actors, release years, and other pertinent information.
2. Personalized Movie Recommendations :
  - To implement advanced algorithms to analyze user preferences and provide personalized movie recommendations, enhancing the overall user experience.
3. Community Engagement :
  - To encourage a feeling of community among moviegoers by including tools like reviews, ratings, and suggestions that allow people to connect and share their cinematic experiences.
4. Advanced Search Functionality :
  - To improve search functionality by implementing complex algorithms that allow viewers to locate movies based on particular criteria such as mood, themes, and subtle plot elements.
5. Dynamic Sorting and Filtering :
  - To allow consumers to rank and arrange search results based on real-time trends, reviews, and social media buzz by enabling dynamic sorting and filtering options.
6. Privacy and Security Measures :
  - To implement strong privacy and security safeguards to secure user data and guarantee compliance with data protection requirements.

## 6.0 Scope

### 1. Movie Information :

- Include a wide range of movie data, such as genres, directors, actors, release years, synopses, and other relevant details.

### 2. User Profiles :

- Allow users to establish and manage individualized accounts, which will allow them to store favorite movies, make watchlists, and receive personalized suggestions.

### 3. Search and Navigation :

- Create a sophisticated search engine that allows visitors to search using several parameters, assuring a smooth navigation experience.

### 4. Recommendation System :

- Create a recommendation system that uses user data and preferences to provide personalized movie suggestions.

### 5. Community Features

- In order to increase community involvement and interaction, provide elements such as user reviews, ratings, and comments.

### 6. Dynamic Sorting and Filtering :

- Allow consumers to sort and filter search results dynamically depending on trends, reviews, and social media activity.

### 7. Feedback Mechanism :

- Implement a feedback mechanism that allows users to make recommendations, report problems, and actively contribute to the Movie Search Engine's progress.

#### 8. Privacy and Security :

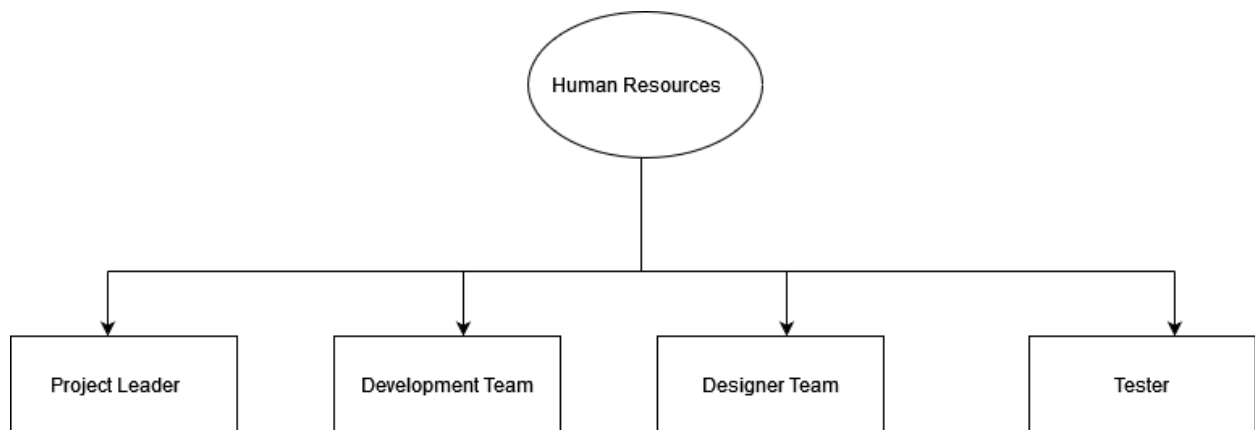
- Adhere to data protection standards and implement strong procedures to maintain user data privacy and security.

## **7.0 Project Planning**

Project Planning is the process of determining a project's objectives, restrictions, and strategy—as well as the tasks, resources, timetables, and budgetary requirements—is known as project planning. This crucial phase of project management establishes the foundation for a project's successful conclusion. Project planning is crucial because it makes it easier to allocate resources effectively, for teams and stakeholders to grasp the extent of the work, and to anticipate and address potential roadblocks. Plans call for Human Resources, Work Breakdown Structures (WBS), and an integrated Gantt chart to show the steps involved in project implementation.

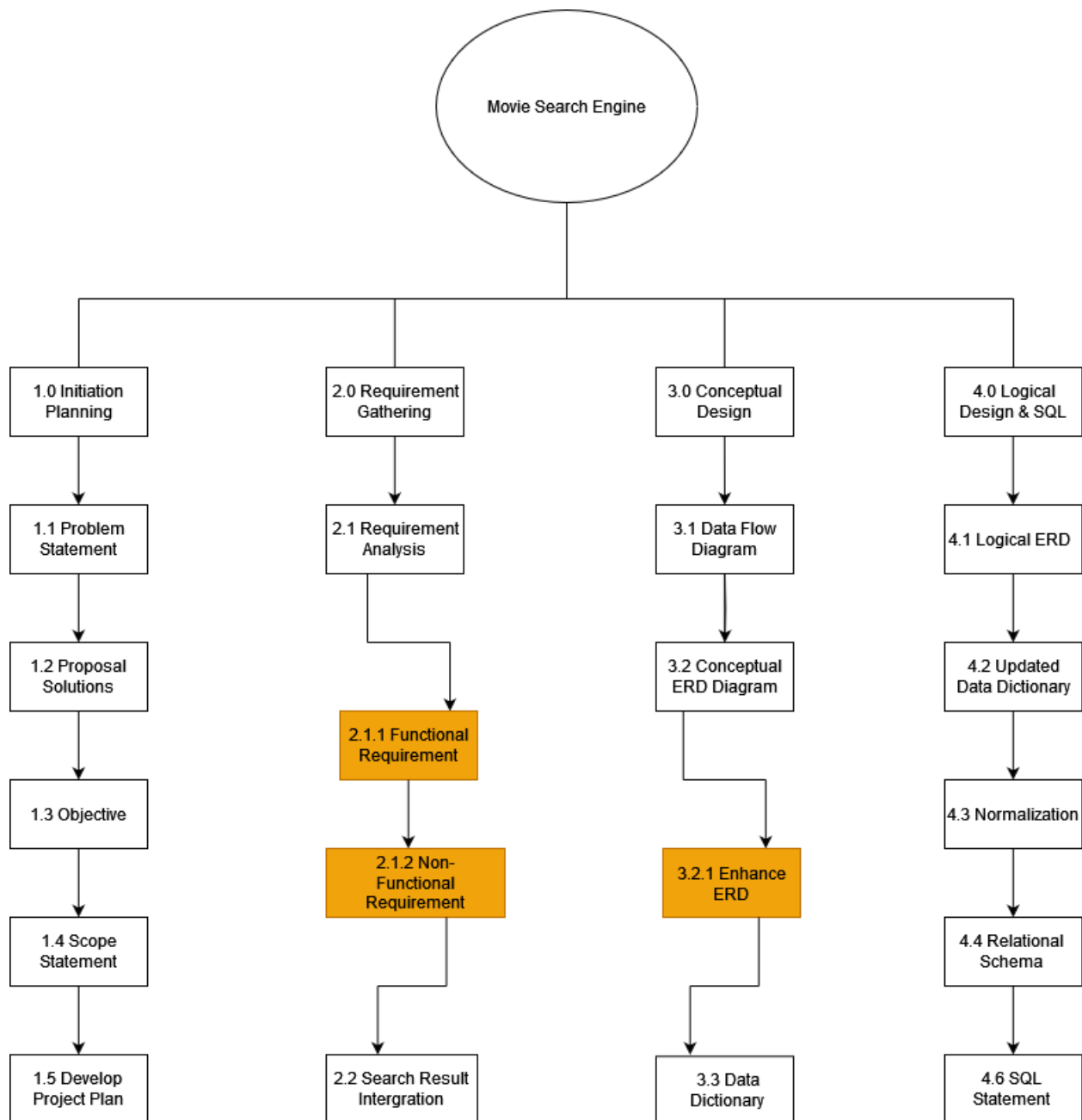
## 7.1 Human Resource

Based on the movie search engine project, human resources project planning includes identifying, recruiting and managing the necessary group members to develop, implement and maintain the system. Here's the human resources project planning for Movie Search Engine Project



## 7.2 Work Breakdown Structure (WBS)

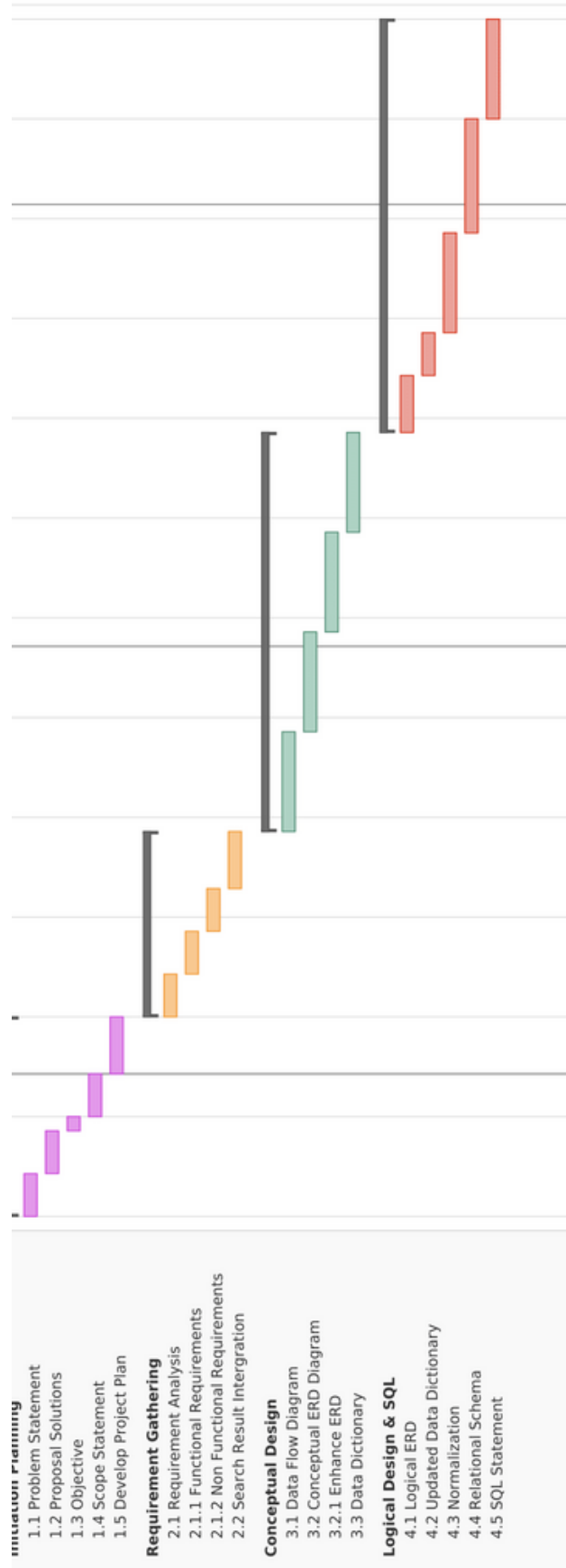
A project is broken down into smaller, easier-to-manage components using a hierarchical structure process called a Work Breakdown Structure (WBS). It is an ordered and visually appealing depiction of the jobs, activities and deliverables needed to finish a project. Below is the Work Breakdown Structure (WBS) for a movie search engine project.





### **7.3 Gantt Chart**

An effective visual tool for project leaders and team members to comprehend the project's status, schedule, and forthcoming work is a Gantt chart. In the context of a cinema booking system project, a Gantt chart can be used to illustrate the project tasks and our dependencies, helping to minimize bottlenecks and assure timely completion of the project. Project leaders will effectively monitor the cinema booking system project by utilizing a Gantt chart, which helps us to make sure that all necessary actions are completed in order to get the desired result.



## 8.0 Requirement Analysis

Based on the present (AS-IS) analysis, the requirement analysis for the Movie Search Engine entails determining the current weaknesses and highlighting the features and enhancements required for a complete and user-friendly platform. These are essential conditions:

### 1. Enhanced Search Functionality :

- Current Situation: It's difficult for consumers to locate movies based on minor preferences while using basic search parameters.
- Requirement: Implement advanced search algorithms that allow users to search based on mood, topics, or specific story points.

### 2. Personalized Recommendations :

- Current Situation : Users find it difficult to locate movies based on minor preferences when using basic search criteria.
- Requirement : Incorporate machine learning algorithms to evaluate user choices and offer personalized movie suggestions.

### 3. Centralized Database :

- Current Situation : Discrepant movie metadata on different platforms makes thorough searches more difficult.
- Requirement : To provide a single, complete source of current data, compile movie information from many platforms into a consolidated database.

### 4. Dynamic Filtering and Ranking :

- Current Situation : It is challenging for users to dynamically filter and rank movie results according to current trends, reviews, or social media buzz.
- Requirement : Include dynamic filters that let users rank and order movie results according to different standards.

## **5. Improved User Interface :**

- Current Situation : Difficulties with the user interface make it difficult to navigate the movie landscape.
- Requirement : Redesign the user interface to provide a smooth user experience and easy navigation.

## **6. User Interaction and Community Features :**

- Current Situation : Community creation is hampered by a lack of capabilities for user involvement.
- Requirement : In order to promote community involvement, incorporate elements such as user reviews, ratings, comments, and forums.

## **7. Privacy and Security Measures :**

- Current Situation : Insufficient security protocols to safeguard user information.
- Requirement : Put strong privacy and security safeguards in place, such as data encryption and adherence to privacy laws.

## **8. Regular Updates and Maintenance :**

- Current Situation : The accuracy and applicability of the movie database are impacted by infrequent updates and maintenance.
- Requirement : Provide a mechanism for frequent maintenance and updates so that the database is kept up to date with new releases of movies.

## **8.1 Current Business Process**

### **1. Authentication and User Registration:**

Scenario : A new user wants to use the Movie Search Engine.

Workflow :

- The user creates an account on the website.
- The system safely keeps user information in the database.
- The user can use their login credentials to log in after registering

### **2. Home Page and Navigations:**

Scenario : A user wants to explore the Movie Search Engine.

Workflow :

- Upon logging in, the user is directed to the home page.
- The home page displays featured movies, trending searches, and other relevant information.
- Users can navigate to different sections like genres, top-rated movies, and upcoming releases.

### **3. Search for Movies:**

Scenario : A user wants to search for a specific movie.

Workflow :

- The user enters keywords, such as title, actor, director, or genre into the search bar.
- The system queries the database for matching records.
- Search results are displayed to the user, showing relevant movie details.

#### **4. View Movie Details:**

Scenario : View Movie Details:

Workflow :

- The user clicks on a movie from the search results or the featured section.
- The system retrieves detailed information from the database, including synopsis, cast, release date, and ratings.
- Users can leave reviews or ratings if logged in.

#### **5. Filter and Sort Options:**

Scenario : A user wants to narrow down search results.

Workflow :

- The system provides filter options such as genre, release date, and rating.
- Users can sort results based on relevance, release date, or user ratings.
- The system dynamically updates the displayed results based on the selected filters and sorting options.

#### **6. User Profile Management:**

Scenario : A user wants to manage their profile.

Workflow :

- Users can access and edit their profile information.
- They can change passwords, update personal details, or upload a profile picture.
- The system updates the database with any changes made by the user.

## **7. Admin Functions:**

Scenario : Admin wants to manage the movie database.

Workflow :

- Admins have access to an admin panel.
- They can add new movies, edit existing movie details, or remove movies from the database.
- Admins can also manage user accounts, reviews, and ratings.

## **8. Recommendation System:**

Scenario : A user wants movie recommendations.

Workflow :

- The system utilizes algorithms to analyze user preferences based on their search history, ratings, and reviews.
- Personalized recommendations are displayed to users on their home page.

## 9.0 Transaction Requirement

### Data Entry:

- Users should be able to add new movies to the database, along with information such as title, genre, release date, cast, director, and synopsis.
- For efficient updates, the system should support bulk data entry, particularly when adding multiple movies.
- Users should be able to create new profiles by entering information such as their username, password, email address, and preferences.

### Data Update/Delete:

- Authorized users (administrators) should be able to make changes to existing movie information, such as correcting errors or updating release dates.
- Movies should be able to be deleted, with the system ensuring data integrity and providing appropriate warnings or confirmations.
- Users should have the ability to update their profiles, including information such as password changes, email updates, and preferences modifications.
- Users should be able to delete their profiles if they so desire.

### Data Queries:

- Users should be able to conduct basic searches using keywords such as title, genre, director, or actor.
- Advanced search options should include mood, topic, and specific story point filters.
- Users should be able to query their own profiles to view and verify the information stored.
- Administrators, with appropriate privileges, should be able to query user profiles for administrative purposes.



## **10.0 Benefit and Summary of Proposed System**

### **Benefits:**

- **Enhanced Search Functionality:** The system addresses current database deficiencies by providing robust search capabilities, allowing users to find movies based on subtle preferences.
- **Personalization:** The system provides tailored recommendations, increasing user engagement and satisfaction.
- **Data Centralization:** By overcoming data fragmentation, the system ensures a centralized source for comprehensive, up-to-date movie information.
- **Improved User Interface:** The system has an intuitive interface, which improves overall user experience and navigation.

### **Summary:**

- The proposed Movie Search Engine aims to revolutionize how users interact with the film industry.
- By addressing current database limitations, the system ensures a seamless and comprehensive movie search experience.
- Features such as enhanced search functionality, personalized recommendations, and dynamic filtering contribute to a user-centric platform.
- The centralized database eliminates data fragmentation, providing users with a reliable and up-to-date source of information.

## **11.0 Summary**

The proposal outlines the need for a sophisticated Movie Search Engine to overcome current film industry challenges. The project aims to redefine how people discover and engage with movies by introducing an innovative solution that prioritizes user experience, data integrity, and comprehensive movie information. In the ever-changing entertainment landscape, the proposed system not only addresses current issues but also anticipates future demands. The team is dedicated to delivering a powerful and dynamic Movie Search Engine that caters to the diverse preferences of movie enthusiasts worldwide by leveraging advanced database management strategies and cutting-edge algorithms.