

## Tribhuvan University

## Institute of Science and Technology

A

Final Year Project Report On

Movie Recommendation System

#### Submitted to

Department of Computer Science and Technology

#### Birendra Memorial College (BMC)

Dharan, Sunsari

In Partial Fulfillment of The Requirements

For the Bachelor’s Degree in **Computer Science and Information Technology (BSC.CSIT)**

By

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UNDER THE SUPERVISION OF **MR.BIMAL GHIMIRE**

## Birendra Memorial College (BMC), TU

**Supervisor’s Recommendation**

I hereby recommend that this project prepared under my supervision by Rahul Baniya (16422/074), Sagar Karki (16428/074), Utsav Khadgi (16443/074) entitled “**CINEPILE- A Movie Recommendation System”** in partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Information Technology(BSC.CSIT) be proceed for the evaluation.

Signature Supervisor Mr.Bimal Ghimire

## LETTER OF APPROVAL

This is to certify that the project carried out by **Mr. Rahul Baniya**, **Mr. Sagar Karki** and **Mr. Utsav Khadgi** entitled “**Movie Recommendation System**” in partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Information Technology has been well studied. In our opinion it is satisfactory in the scope and quality as a project for the required degree.

## Evaluation Committee

|  |  |
| --- | --- |
| Mr. Bimal Ghimire  Project Supervisor  Name of Department Birendra Memorial College Dharan, Sunsari  Nepal | Mr.  Head of Department Name of Department Name of your college Address  Nepal |
| Mr. | Mr. |
| Internal Examiner | External Examiner |
| Name of Department | Name of Department |
| Name of your college | Name of College |
| Address Nepal | Address |

**ACKNOWLEDGEMENT**

First of all, we would like to show our deepest gratitude and appreciation to our college **Birendra Memorial College** for providing and accommodating a suitable environment to advance in our project work and complete it successfully. Then, we would also want to show our appreciation to our supervisor, **Mr. Bimal Ghimire** for Administering and providing guidance and also for being an exemplary supervisor one can only hope for throughout our project. Without your assistance, it would have been a very challenging task for us to complete this project. We want to thank our HOD **Mr. Mukesh Shah** for his continuous support and help throughout our project and for managing and accommodating every necessary resources and materials that was required in the project. Lastly, we would like to specially thank and acknowledge our classmates who knowingly or unknowingly were a valuable part in every possible way even if it is in the smallest aspects of the contribution towards the completion of the project.

## ABSTRACT

In this very busy life, people seek for the temporary entertainment to refresh from their day to day life for this purpose Movie Recommendation System is important due to its strength in providing enhanced entertainment. Every people have their own taste on movie for example some people likes to watch horror movies, some likes to watch comedy and some likes to watch web series so it is difficult to choose a movie among billions of movies. In this paper we propose a movie recommendation system that has the ability to recommend movies to a new user as well as the others according to their taste and interest. It mines movies database and collect all the information and match those information with the user input or search history and filter those characteristics and present it to the user.

# CHAPTER 1

## INTRODUCTION:

### Background:

Recommendation system is the information filtering system that predicts the user preference and likeness of the user based on the search history or the user input. It filters the appropriate items from the database and shows the filtered result to the user from which user also filter some of the items and picks the best items.

In recent years consumption of on-demand multimedia contenct over the Internet has greatly increased, with a great deal of content available through streaming platforms and services such as Netflix, Youtube, Amazon Prime, Hulu and many more, they provides millions of videos and in this container it is more difficult for the consumer to choose the most suitable content for its preference. Suggesting and arranging the best movie among those bunches of movies is our primary concern. So for that purpose we are purposing our project.

Due to advances in the recommender system users constantly expect good recommendations. They have a low threshold for services that are not able to make appropriate suggestions. If a music streaming app is not able to predict and play music that the user likes, then the user will simply stop using it. This has led to a high emphasis by tech companies on improving their recommendation systems. However, the problem is more complex than it seems. Every user has different preferences like in addition even the taste of a single user can vary depending on large number of factors, such as good mood, season, or type of activity the user id doing. Since each user id different, this approach is considered to be too simple. The basic idea behind this system is that movies that are more popular and critically acclaimed will have a higher probability of being liked by the average audience. For example, the type of music he’d listen while cleaning differs greatly from the type of music he’d like to listen while cooking.

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| Netflix | 2/3rd of the movies watched are recommended |
| Google News | Recommendations generate 38% more click-through |
| Amazon | 35% sales from recommendations |
| Choice Stream | 28% of the people would buy more music if they found what they liked |

**Table 1: Companies benefit though recommendation system according to the year 2016 A.D.**

**1.2 Problem Definition:**

There are many online movies, so it isn't easy to find the best movie according to one's taste. The movie recommendation system is the recommender platform that gives the user the movies of their taste or likeness. After that, we will solve the representation of a movie, which is how a system can understand user taste of the movies. That is the precondition for comparing the similarity between two movies. Movie features such as genre, actor, and director are a way that can categorize movies. But for each feature of the movie, there should be different weights for them to compare between the movies before recommending to the users.

**1.3 Project Purpose:**

Recommendation systems are tools that use various techniques and algorithms to isolate irrelevant information from a massive amount of data and generate personalized suggestions of a small subset of them that user can examine in a reasonable amount of time. Recommendation systems aim to predict users’ interests and recommend desired items that are pretty likely interesting. They are among the most powerful machine learning system that various online platforms implement to give users the best of their list and saves time.

Finding the right movie can be hard due to the number of online movies. Movie recommendation system helps users find the right one by according to their taste and likeness. Recommendation systems are Artificial Intelligence based algorithms that filter the outcomes based on the user input or interest. The first step in analyzing a movie is to determine the similarity between its various features. For instance, if the user likes the movie from a genre, then it should be compared with others genre and show the similar genre to the user. The result are based on their search/browsing history and how likely you watch those movies. This is achieved through predictive modeling and heuristics with the data available.

Why recommendation system?

1. Accelerate work

Helps to analysts for further research and reduces their work.

1. Forms Habits

Influencing usage pattern in users.

1. Improve retention

Caters to the user’s preferences and keeps them hooked to the application.

1. Increase sales

Can improve business by a great margin by using various recommendation of different items.

* 1. **Project Features:**

We mainly aim to provide a wide variety of entertainment on the basis of user preferences and likeness. On this vast dataset of movie one’s taste may vastly differ from other so inorder to suppress that taste and give user their desired output we had introduced a variety of features. The features includes:-

* Recommend top movies to the user
* Allow users to search movies based
* Recommend movies to the user based on the search history
* Track the IMDB rated movies based on his history
* Can show IMDB ratings of the search movies.

**Objectives**

The objectives of the movie recommendation system are:

* To search the interest movies.
* To provide top 5 recommended movies.
* Time saving.
* User friendly.

**Scope of the project**

The main focus of this project is to developed a platform that find the user interest in movie from the searched bar and recommend similar movies to the user which helps to entertain the user more and it is also time saving.

**Literature survey**

The survey is a recognized and accepted part of the society. The literature survey plays a very important role in research process. It is a source from where research ideas are drawn and developed into concepts and finally theories. The literature survey on the movie recommendation system is the basic principal of how the recommendation system works and how can we maintain the uniformity and time saving techniques with the view to help the users to make effective decisions.

The purpose of the literature survey is to collect a lot of number of journal’s article about a particular topic. The main aim of this collection is to provide a guidelines and brief information of researcher, user and other person who want the information about the topic.

Movie recommendation system helps to find the similar movies of the user interest.

# CHAPTER 2

## REQUIREMENT ANALYSIS AND FEASIBILITY STUDY

# CHAPTER 3

**SYSTEM DESIGN**

The basic steps in the software development is system design however system design is not an easy task it requires more effort and more cost and if any error occur at the last then the whole project and the cost is worthless. So inorder to prevent that the system is designed in the prototyping model awhich looks same as the real model but it is only a small piece of the work which is easy to build and costing is comparatively low from that real model. We can design and test about the software and if the test is successful we can implement it to to the real world.

The goal of the system design is to plan for the solution of the problem. This phases mainly focuses on the detailed implementation of the feasible system. There are mainly two phases in the system design. They are logical design and physical design.

The logical design phase of the System Design is the conceptual phase of the system that defines how a system should operate in the particular condition. The logical design helps to view the conceptual model of the system that may include input, output, dataset and procedures of the system.

The physical phase of the System Design is the implementation phase of the logical design. This phase particularly focus on the output of the system design and makes sure that it implements all the models of the logical design. The physical design in the System Design is all about coding. The physical design produces the working system that a user/ customer wants.

# 3.1 LOGICAL DESIGN

The logical design focus on the abstract phase or the conceptual phase of the system. This phase is the challenging phase as all the detailed planning of the proposed system is done in this phase. The prototyping model is also designed and implemented. The logical design includes input(source), outputs (destinations), databases (data stores) and procedures (data flows) all in a format that meets the user requirements.

**3.2 Input Design**

The input design links the user and the operating system. It describes how the system should interact with the user. The detailed information on how the computer should handle each and every input and how the data should be processed. The processing of the data from the raw input to the useful information includes input required input processing, controlling errors, avoiding delay, avoiding extra steps and keeping the process simple.

What data should be given as Input?

* How should the data be arranged or coded?
* The dialogue to guide the operating personnel in providing input.
* Methods for preparing input validations and steps to follow when error occur

**3.3 Output Design**

Output is the way of presenting the given input after processing it. It is the direct visual information source to the user. Output may be in the form of report or any other necessary format that should be given to the users according to the user requirements. Efficient, intelligible output design should improve the system's relationship with the user and help in decision making. Since the reports are directly referred to by the management for taking decisions and to draw conclusions they must be designed with almost care and the details in the reports must be simple, descriptive and clear to the user. So while designing output the following things are to be considered.

* Determine what information to present
* Arrange the presentation of information in an acceptable format
* Decide how to distribute the output to intended receipts

Other forms of the output may be kept in the data ware house for the future references or future use of the report. They may be changed from physical report to the storage such as hard disk or drive and may be presented in the monitor or projector or any other means.

**Physical Design**

The designing of the actual system or the software that works in the real time and gives the user required output is known as physical design. Physical design is the third step of the project as planning and analysis is done before designing physical model. In the software development coding is known as the physical design of the model. Coding the program for each module with its logic is performed in this step. Proper software specification is also done in this step.

**UML DIAGRAM**

Some of the Unified Modeling Language helps to simply the ideas and the logic with basic understanding of the overall project of the movie recommendation system.

**USE CASE DIAGRAM**

In simple word use case diagram is the graphical inception of the possible user interaction with the software.

Use case is the set of actions, service and function that are need to perform.

* First function is to give input(movies name, language and genre)to which it belongs.
* Second function is to apply apriori algorithm for frequent itemset data mining and association rule learning over relational database.
* Third function is to recommends the movie based on content based filtering.
* Then the user can choose any movie from the given suggestions.

FIG: USE CASE DIAGRAM

**STATE DIAGRAM**

A **state diagram** is used to represent the condition of the system or part of the system at finite instances of time. State diagram graphically represents the finite state of the machine.

They are used to understand the behavior of the system throughout the time.

* A **state diagram** is used to represent the condition of the system or part of the system at finite instances of time.
* A **state diagram** is used to represent the condition of the system or part of the system at finite instances of time.

Apriori Algorithm

Input Movie data

Analysis

Movie Name Suggestion

Movie Selection

Fig: State Diagram

# CHAPTER 4

**SYSTEM IMPLEMENTATION AND TESTING**

## 4.1 Implementation Methods:

System implementation refers to the set of procedures performed to complete the design contained in the approved system design document and to test, install and begin to use the new revised information system. It is the final process of implementing the solution from development status to production status. Coding and building of the project is executed in this phase.

4.1.1 Software Development life cycle model:

**4.1.2 Technology used:**

In the development of this project we use various of project development tools to provide fruitful end product. Those tools are platform independent so that this system can run in any hardware and software systems.

Minimum Hardware Requirements:

* System : Pentium IV 2.4 GHz.
* Hard Disk : 10 GB.
* Ram : 512 Mb.

Software Requirements:

* Operating System : Windows 7 ultimate
* Coding Language : Python
* Frontend : Php and css

**System Testing:**

After the completion of our project up to this phase we do the test by searching the movie name and then selecting the movie from those recommended list.

|  |  |  |  |
| --- | --- | --- | --- |
| **S. No.** | **Input** | **Expected Output** | **Result** |
| 1. | Movie name | The search movie and then 5 recommendation below the search movie | The search movie is shown and then the algorithm generated 5 recommended movie is shown. |

Table: System Testing

**Movie Recommendation Algorithms:**

**APRIORI ALGORITHM:**

**Chapter -5**

**Conclusion**

We have provided an content-based approach to recommendation in this paper. Experiments on a large, realistic collection of ratings were used to test this strategy. CINEPILE is a content based movies works on the k-means cluster analysis on result sets of database inquiry constituent the key models of our system. We found it flexible as, content based approach helps to filter the dataset in such a order that uses minimum system and process the result faster.

Due to the nature of the system, evaluating performance is a difficult undertaking because there is no right or wrong recommendation; it is simply a matter of opinion. We received a great reaction from users based on informal evaluations that we conducted.

In this way, a simple movie recommendation system(CINEPILE) was developed where end users can search for the movie and the movie algorithm generates the similar movies based on the searched history and entertain with wide range of recommended movies. Over the due course of our project time we dealt with various technologies and ideas for the recommendation system and thus we believe that this work provides a basis for further work of this area, particularly in harnessing other types of information content.

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