

Department – Computer Shift 02 Project Synopsis

**GROUP ID:** 01

**TEAM MEMBERS:** TANMAY BHUSKUTE, AMIT JEVE, NIHAL SHAH, TEJAS SHAH

**PROJECT TITLE:** Design and Implementation of Recommender Systems using Hybrid Filtering Approach

**PROJECT DOMAIN:** Machine Learning, Web Development

**INTERNAL GUIDE:** Prof. B. A. Patil

**SPONSORSHIP AND EXTERNAL GUIDE:** None

**LITERATURE SURVEY:**

1. Ashrita Kashyap, Sunita. B, Sneh Srivastava, Aishwarya. PH, Anup Jung Shah, “A Movie Recommender System: MOVREC using Machine Learning Techniques”, Department of Computer Science & Engineering: SAIT, Bengaluru, Karnataka, India

2. Nirav Raval, Vijayshri Khedkar, “A Review Paper on Collaborative Filtering Based Movie Recommendation System”

3. Min Li, Yingming Zeng, Yue Guo and Yun Guo, “A Movie Recommendation System Based on Differential Privacy Protection”, Hindawi, Security and Communication Networks Volume 2020, Article ID 6611463, 10 pages, <https://doi.org/10.1155/2020/661146>

4. Bei-Bei CUI, “Design and Implementation of Movie Recommendation System Based on   
KNN Collaborative Filtering Algorithm”, DOI: 10.1051/itmconf/20171204008

5. C. M. Wu, D. Garg and U. Bhandary, "Movie Recommendation System Using Collaborative Filtering," 2018 IEEE 9th International Conference on Software Engineering and Service Science (ICSESS), 2018, pp. 11-15, doi: 10.1109/ICSESS.2018.8663822.

6. Wang Wenzhen, "Personalized Music Recommendation Algorithm Based on Hybrid Collaborative Filetrin Technology", 2019 International Conference on Smart Grid and Electrical Automation, DOI: 10.1109/ICSGEA.2019.00071

PROBLEM STATEMENT: To develop a recommender system for movies, tv series, music and books on a webapp. The system should also recommend songs based on the movies watched and liked.

TECHNICAL KEYWORDS (ANY FIVE ALPHABETICAL ORDER): Content Based Filtering, Collaborative Filtering, Hybrid Filtering, Python, MERN Stack, Content & Collaborative based approach, KNN regression, K-means clustering, Hybrid Recommendation system, Cosine similarity, clustering

**ABSTRACT:**

This project discusses about a single recommendation platform for movies, tv series, books and songs.

A recommender system, or a recommendation system is a subclass of information filtering system that seeks to predict the "rating" or "preference" a user would give to an item. It also helps users to find the movies of their choices based on the movie experience of other users in efficient and effective manner without wasting much time in useless browsing. Previous approaches in recommendation systems (RS) include Content-based-filtering and collaborative filtering. These approaches have certain limitations as like the necessity of the user history as they visit. So as to make back the effect of such dependencies, we will use **Hybrid Recommendation System**. This system uses both Collaborative filtering & Content based filtering for recommending movies. In this way, the system performance will be greatly improved through the integration of the two. The main aim of Music Recommender System (MRS) is to give proper meaningful suggestion to person for specific items based on users’ mood and interest towards particular items, MRS has seen a boom in recent years. The Content Based method recommends music based on the user data, In Collaborative method we use rating and sharing of content between different users to recommend music. KNN regression and K-means clustering are the algorithms used. The algorithm predicts the cosine similarity score between pair of songs. Songs which have highest similarity scores with respect to the currently playing song is recommended to the user. This paper also proposes a quick and intuitive book recommendation system that helps readers to find appropriate book to read next in which we have used both filtering methods.

**GOALS AND OBJECTIVES:**

• To take favorite movies/ music/ books input from users

• To extract metadata from user input movies/ music/ books.

• Recommend movies/music/books based on metadata as well as ratings.

**RELEVANT MATHEMATICS ASSOCIATED WITH THE PROJECT:**

**LIST OF REFERENCE PAPERS OF CONFERENCE/JOURNAL SUPPORTING PROJECT IDEA:**

**REVIEWS/COMMENTS BY INTERNAL GUIDE:**

**Sign of Guide Sign of Project Coordinator Sign of HOD**