Final Year Project 1

Coordinator: Dr.Aarij Mahmood Hussaan

Project Title: Universal Recommendation System

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Fyp Group 1

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Research Approaches:

How will this project be made?

This project is planned to be developed with a combination of Python, Django, and Flask for the backend and HTML and CSS for the frontend. It comprises four main features, each with its own approach to providing personalized recommendations to users. The movie recommendation system will use content-based filtering, the book recommendation system will use collaborative filtering, the music recommendation system will use collaborative filtering and cosine similarity, and the fashion recommendation system will use deep learning CNN for reverse image search.

Why will this project be made?

This project is being made to help users find relevant items based on their preferences, behavior, and other factors, which can save them time and effort while improving their overall experience. With the vast amount of data and information available, it can be challenging for users to find what they need quickly and efficiently.

The main purpose of this project is to provide a personalized recommendation system to a large user base across different categories such as movies, books, music, and fashion. The overwhelming

amount of data available can make it challenging for users to find what they need quickly and efficiently. The project also aims to improve user engagement and satisfaction for businesses by providing them with accurate recommendations for their products.

What are the approaches to construct this project?

The construction of this project involves the implementation of various approaches and techniques in order to create an effective and efficient recommendation system. Here are some of the key approaches:

- **Content-based filtering:** This approach involves analyzing the features and characteristics of items, such as movies, books, or music, and making recommendations based on their similarities. For instance, the movie recommendation system in this project uses content-based filtering to recommend movies that are similar to a given movie.
- **Collaborative filtering:** This approach involves analyzing the behavior and preferences of users and making recommendations based on their similarities with other users. The book and music recommendation systems in this project utilize collaborative filtering techniques to make personalized recommendations based on the user's past behavior and preferences.
- **Deep learning:** The fashion recommendation system in this project employs deep learning techniques, specifically convolutional neural networks (CNNs), to identify the features and patterns in fashion-related images uploaded by users. The system uses reverse image search to recommend visually similar products to the user.
- **API integration:** The movie recommendation system in this project integrates an API to retrieve and display the top 250 movies based on their rating. The system regularly updates its data to retrain the model and predict new movie ratings.
- **Front-end development:** The recommendation system's front-end development uses HTML and CSS to provide an intuitive and user-friendly interface that enhances the user's overall experience.

Overall, the approaches used in this project focus on providing personalized recommendations to users based on their behavior, preferences, and other factors. The combination of content-based filtering, collaborative filtering, deep learning, API integration, and front-end development creates a comprehensive and effective recommendation system that improves user engagement and satisfaction.