Movie Recommendation System Report

Introduction:

The project **Movie_Recommender** aims to build a robust movie recommendation system utilizing the **TMDB dataset**. The objective is to provide users with personalized movie suggestions based on a similarity algorithm.

Dataset Selection:

The **TMDB dataset** was chosen due to its availability and rich metadata, including genres, cast, crew, and user ratings. This dataset allows for comprehensive analysis and recommendation generation.

Data Preprocessing & Vectorization:

To ensure optimal predictions, the dataset underwent extensive preprocessing:

- Cleaning and structuring the data for uniformity.
- Extracting relevant features such as movie titles, genres, and overviews.
- **Vectorization** techniques were applied to transform textual data into numerical representations for better computational processing.

Algorithm Development:

The recommendation system operates on a **distance-based prediction** mechanism:

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- **Cosine Similarity** or **Euclidean Distance** helps determine the closeness between movies based on their vectorized representations.
- When a user inputs a movie, the system fetches similar movies by analyzing their feature vectors.

User Interface (UI) Implementation:

The **Streamlit framework** was used to develop the front-end interface:

- Provides an intuitive and interactive experience for users.
- Allows seamless input of movie names and retrieves recommendations instantly.
- A clean and minimalistic design enhances user engagement.

Results & Conclusion:

The recommendation system efficiently suggests movies similar to a given input. Through **distance-based prediction**, users can explore movies tailored to their preferences. **Future improvements** may include:

- Enhancing recommendations using deep learning techniques. Incorporating user-specific preferences based on watch history.
- Expanding the dataset for more diverse recommendations.