**CSE523 - Machine Learning**

**Movie Recommendation System using Machine Learning**

**Faculty - Prof. Mehul Raval**

**Weekly Report 1**

**Submission Date: 11-02-23**

**Group: Tech Titans**

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**Summary:**

In the first week, we explore more about the how recommendation system work. For example, we can use two types of recommendation systems in movie recommendation systems:

1. Content-based Filtering
2. Collaborative-based Filtering

**Content-based filtering:**

Dataset: <https://www.kaggle.com/datasets/tmdb/tmdb-movie-metadata>

This approach makes suggestions for products depending on the features of the product itself, such as the genre, the performers, or the director of a film. Based on the user's previous preferences, the system assesses the movie's attributes and makes recommendations for related products. Content-based filtering can make recommendations for new users and is less dependent on user data. However, it could need help recommending products that are different from the user's previous choices.

**Collaborative-based filtering:**

Dataset: <https://www.kaggle.com/datasets/rounakbanik/the-movies-dataset?select=movies_metadata.csv>

This technique suggests products (movies) based on the tastes of users who share similar interests. It entails examining user-item interaction data, such as ratings or reviews, to look for trends and user comparisons. The engine then recommends products that customers with similar preferences have previously enjoyed. Memory-based and model-based collaborative filtering are the two further forms that can be distinguished. User-based and item-based techniques are included in memory-based algorithms, whereas model-based algorithms predict ratings using machine learning models like matrix factorization.

After discussing with TAs, we found the data set to implement the collaborative-based filtering-based data set. So, we decided to implement a collaborative-based filtering movie recommendation system. In collaborative-based filtering, we can use the ratings of movies and the user who was given a rating. So, based on rating, we can create a group of cluster who likes similar movies and recommend each other user, based on a cluster of user with similar movie taste.