**Explanation of the topic:**

The topic that I have chosen for the project is a movie recommendation system using collaborative filtering algorithms where similar types and similar tastes of the movie will be recommended to the users. Datasets are required to train the system which is taken from Kaggle. Kaggle is a cloud-based platform for data scientists and machine learning enthusiasts. It provides resources and powerful tools for learners and professionals. Kaggle helps to find and publish the datasets, provides GPU-integrated notebooks, and allows users to collaborate with others. (<https://medium.com/dataseries/what-is-kaggle-4751e384e916>) Many of the well-known streaming services, like Netflix, YouTube, Prime Videos, and many more, use movie recommendation systems to provide best user experience .

During the free time, most of the people wants to watch movies. The movie recommendation system that this coursework will construct is like a system that predict user’s movie preferences based on their past choice and behaviors and suggests movies that a corresponding user had watched. It displays what films/movies various viewers are viewing and assumes that other viewers would watch similar films. How movie recommendation works? The system keeps records of the past preferences of the users and utilized that information and try to find out the similar movies and recommend that movie to users. The movie is not recommended on the basis of rating only, there might be other factors like lead actors, directors, genre, theme, language and many other factors. <https://labelyourdata.com/articles/movie-recommendation-with-machine-learning#:~:text=How%20does%20it%20work%3F,movie%20recommendations%20for%20the%20user>.

Collaborating filtering algorithm is subclass of an information filtering system. The information filtering system is a system that removes redundant or unwanted information from an information stream using semi-automated or computerized methods prior to display human users. Collaborative filtering filters information with the help of other user’s interaction and data collected from them. (<https://builtin.com/data-science/collaborative-filtering-recommender-system>) It mainly focuses on the relationship between uses and items. Like when a user liked the item, the user will give a good rating which will be the source for the system to know the user. After the information gathering of users, system will show similar type of the products.

Collaborative-filtering system is divided into two types which are user-based and item-based filtering system**. User-based collaborative filtering** is based on the similar users and their choice and their rating to the item they already used. For example, user A gives 3 rating to product A, 4 rating to product B and 5 rating to product C out of 5 rating. Likewise, user B gives 3 rating to A and 4 rating to product B then product C will be recommended to user B because taste and rating of user A and user B is similar <https://www.geeksforgeeks.org/user-based-collaborative-filtering/> . In **item-based collaborative filtering**, products are recommended on the basis of taste, similarities and rating the users had given to the similar product. In this type of techniques, similarities between items are computed and similar items are displayed to users based on the similarities computed. <https://www.analyticsvidhya.com/blog/2021/05/item-based-collaborative-filtering-build-your-own-recommender-system/>

