**MOVIE RECOMMENDATION SYSTEM**

**Overview**

**A movie recommendation system** is a fancy way to describe a process that tries to predict your preferred items based on your or people similar to you. The goal of the project is to recommend a movie to the user. Providing related content out of relevant and irrelevant collection of items to users of online service providers.

**Motivation**

* From a user’s perspective, they are catered to fulfil the user’s needs in the shortest time possible. For example, the type of content you watch on Netflix or Hulu. A person who likes to watch only Korean drama will see titles related to that only but a person who likes to watch Action-based titles will see that on their home screen.
* From an organization’s perspective, they want to keep the user as long as possible on the platform so that it will generate the most possible profit for them. With better recommendations, it creates positive feedback from the user as well. What good it will be to the organization to have a library of 500K+ titles when they cannot provide proper recommendations?

**Types of Recommendation System**

1. **Collaborative Filtering -** There are two types of collaborative filtering:

* User-Based: Where we try to find similar users based on their item choices and recommend the items. A user-item rating matrix is created at first. Then, we find the correlations between the users and recommend items based on correlation.

#### Item Based -Where we try to find a similar item based on their user’s choices and recommend the items. A user-user item rating matrix is created at first. Then, we find the correlations between the items and recommend items based on correlation.

### Content-Based Filtering

Here the similar articles are been recommended to the user according to his previous content search.

**Dataset Source**

It contains 100004 ratings and 1296 tag applications across 9125 movies. These data were created by 671 users between January 09, 1995 and October 16, 2016. This dataset was generated on October 17, 2016. Users were selected at random for inclusion. All selected users had rated at least 20 movies. No demographic information is included. Each user is represented by an id, and no other information is provided. **The full dataset:** This dataset consists of 26,000,000 ratings and 750,000 tag applications applied to 45,000 movies by 270,000 users. Includes tag genome data with 12 million relevance scores across 1,100 tags. **The small dataset:** This dataset comprises of 100,000 ratings and 1,300 tag applications applied to 9,000 movies by 700 users. We will build a simple Recommendation for movies using **The full dataset**.

**Important Python Scripts**

**SKlearn:** It features various classification, regression and clustering algorithms including support vector machines, random forests, gradient boosting, k-means and DBSCAN, and is designed to interoperate with the Python numerical and scientific libraries NumPy and SciPy.

**NumPy**: NumPy is a general-purpose array-processing package. It provides a high-performance multidimensional array object, and tools for working with these arrays. It is the fundamental package for scientific computing with Python. Pandas: Pandas is one of the most widely used python libraries in data science. It provides high-performance, easy to use structures and data analysis tools. Unlike NumPy library which provides objects for multi-dimensional arrays, Pandas provides in-memory 2d table object called Data frame.

**Flask**: It is a lightweight WSGI web application framework. It is designed to make getting started quick and easy, with the ability to scale up to complex applications. It began as a simple wrapper around Werkzeug.

**References**

* Hirdesh Shivhare, Anshul Gupta and Shalki Sharma (2015), “Recommender system using fuzzy c-means clustering and genetic algorithm based weighted similarity measure”, IEEE International Conference on Computer, Communication and Control.
* Manoj Kumar, D.K. Yadav, Ankur Singh and Vijay Kr. Gupta (2015), “A Movie Recommender System: MOVREC”, International Journal of Computer Applications (0975 – 8887) Volume 124 – No.3.
* Zan Wang, Xue Yu\*, Nan Feng, Zhenhua Wang (2014), “An Improved Collaborative Movie Recommendation System using Computational Intelligence”,Journal of Visual Languages & Computing,Volume 25, Issue 6.