Building a Personalised Recommendation System for a Content Feed

Objective:

As a part of a larger task we are looking to develop a recommendation system that can personalise content recommendations for a user based on their past interactions with the content.

In order to do this - we have to go through a multi step process wherein we do data pre-processing to select the features that are relevant to the process, calculate similarity measures between the user's past interactions and the available items in the dataset followed by evaluation of algorithms to get personalised recommendation. Post this we train multiple models on parts of the dataset and compare their performance on different parameters to finally come up with the model that works best in our scenario.

For this assignment, we would deep dive in finding “Similarity measurement”.

Task:

You are given a dataset containing 1000 items, along with information about the tags for each item. Additionally, you are given a dataset containing a user's interactions with the content over time. Your task is to develop a personalised recommendation system for the user based on their past interactions with the content. The following task should be completed:

1. **Similarity measurement**: Calculate similarity measures between the user's past interactions and the available items in the dataset using cosine similarity.

You can additionally provide actionable insights that can improve the recommendation system.

Note: You can choose to use any programming language or machine learning framework of your choice to implement this assignment. You may also use additional datasets or external APIs if necessary.