# Internship Task - 4: AI-Based Recommendation System

**Submitted by: Khushi Rani (Student Work using VS Code)**

This project is a basic AI-based recommendation system created by Khushi Rani as a student-level task using Java and Apache Mahout. It recommends items to users based on their preferences using collaborative filtering.

Instructions Followed:

- Built a recommendation system in Java.

- Used Apache Mahout library for collaborative filtering.

- Loaded sample dataset of user-item preferences.

- Created a working Java program with Mahout to recommend items.

Tools Used:

- Java

- Apache Mahout

- VS Code IDE

- Sample CSV Dataset

## Sample Java Code using Apache Mahout

```
import org.apache.mahout.cf.taste.impl.model.file.FileDataModel;
import org.apache.mahout.cf.taste.impl.recommender.GenericUserBasedRecommender;
import org.apache.mahout.cf.taste.impl.similarity.PearsonCorrelationSimilarity;
import org.apache.mahout.cf.taste.impl.neighborhood.NearestNUserNeighborhood;
import org.apache.mahout.cf.taste.model.DataModel;
import org.apache.mahout.cf.taste.neighborhood.UserNeighborhood;
import org.apache.mahout.cf.taste.similarity.UserSimilarity;
import org.apache.mahout.cf.taste.recommender.RecommendedItem;

import java.io.File;
import java.util.List;

public class RecommenderDemo {
    public static void main(String[] args) throws Exception {
        DataModel model = new FileDataModel(new File("dataset.csv"));
```

```
        UserSimilarity similarity = new PearsonCorrelationSimilarity(model);
            UserNeighborhood neighborhood = new NearestNUserNeighborhood(2, similarity,
model);
         GenericUserBasedRecommender recommender = new GenericUserBasedRecommender(model,
neighborhood, similarity);

        List<RecommendedItem> recommendations = recommender.recommend(1, 2);
        for (RecommendedItem recommendation : recommendations) {
               System.out.println("Recommended Item: " + recommendation.getItemID() + "
with value: " + recommendation.getValue());
        }
    }
}
```

*Note: 'dataset.csv' should contain userID, itemID, and preference values.*