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INTRODUCTION

The objective of the assignment is to get hands on designing recommender system for movies data using collaborative filtering (CF) personalization techniques and suggest target user top-5 movies most likely to watch. In part A, we have designed an overall user-based CF recommender system and evaluated its performance. In part B, we have come up with some improvements over the previously used approach in terms of the recommended movies list.

REQUIREMENTS

This module requires the following modules:

- Python(Version 3 and above)
- Numpy
- Pandas
- Scikit-learn

Inputs and Output Description

```
# INPUTS
test user.txt
ratings.csv
movies.csv

# OUTPUTS
output.csv
eval_1.csv
eval_2.csv
eval_3.csv
```

STEPS TO RUN THE CODE

Run recommender system which includes user-item matrix generation, neighborhood generation, prediction and and performance evaluation. This should take command line arguments: input as rating.csv and save the output of MAE performance evaluation in eval_1.csv.

```
python RS_main.py ––input ratings.csv   ––output eval_1.csv
```

Run predictor which will take input as a list of test users and save output predictions in output.csv as the list of the top-5 recommended movies along with previously seen.

```
 python test.py ––input test_user.txt   ––output output.csv
```

Run innovation_1 recommender system which includes user-item matrix generation, neighborhood generation, prediction and and performance evaluation. This should take command line arguments: input as rating.csv and save the output of MAE performance evaluation in eval_2.csv

```
 python RS_main_Signif_Weighing.py ––input ratings.csv ––output eval_2.csv
```

Run innovation_2 recommender system which includes user-item matrix generation, neighborhood generation, prediction and and performance evaluation. This should take command line arguments: input as rating.csv and save the output of MAE performance evaluation in eval_3.csv

```
python RS_main_Amplification.py ––input ratings.csv ––output eval_3.csv
```

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