Scoring guide (Rubric) - Recommendation Systems (1)Evaluated

Criteria Ratings Points

Exploratory Data Analysis

- Check the number of rows and columns and provide observations - Check data types and provide observations - Check for missing value in the data and provide observations - Summary statistics of 'rating' variable and provide observations - Create the bar plot to check the 'rating' distribution and provide observations - Check the number of unique USERS and PRODUCTS in the data and provide observations

Areas Performed well:- 1) Good job on checking the number of rows and columns and provide observations. 2) Good job on checking data types and provide observations. 3) Good job on checking for missing value in the data and provide observations. 4) Good job on checking summary statistics of 'rating' variable and provide observations. 5) You did an excellent job in creating a bar chart to analyze the 'rating' variable and providing a description of how the ratings are distributed. 6) Good Job on Checking the number of unique USERS and PRODUCTS in the data and provide observations. 3/3

Model Building - Rank based Recommendation System

- Recommend top 5 products with 50 minimum interactions based on popularity - Recommend top 5 products with 100 minimum interactions based on popularity

Areas performed well: 1)Good job on calculating the average rating for each product. 2)Good job on calculating the count of ratings for each product. 3)Good job on creating a data-frame with calculated average and count of ratings. 4)Good job on sorting the data-frame by average of ratings in the descending order. 5)Good job on recommending top 5 Products with 50 minimum interactions based on popularity. 6)Good job on recommending top 5 products with 100 minimum interactions based on popularity. 3/3

Model Building - User-User Similarity-based Recommendation System

- Initialize a baseline user-user similarity based recommendation system - Fit the model on the training data - Use the precision\_recall\_at\_k function to calculate the metrics on the test data

Areas Performed Well:- 1)Good Job on Initializing a baseline user-user similarity based recommendation system 2)Good job on Fitting the model on the training data 3)Good job on Using the precision\_recall\_at\_k function to calculate the metrics on the test data 3/3

Improving Model Performance - User-User Similarity-based (Optimized) Recommendation System

- Perform hyperparameter tuning for the user-user similarity-based model - Build the optimized model by using tuned values of the hyperparameters - Predict the rating for a user using the optimized model

Areas Performed Well:- 1)Good Job on Performing hyper-parameter tuning for the user-user similarity-based model 2)Good job on building the optimized model by using tuned values of the hyper-parameters 3)Good job on Predicting the rating for a user using the optimized model 5/5

Model Building - Item-Item Similarity-based Recommendation System

- Initialize a baseline item-item similarity based recommendation system - Fit the model on the training data - Use the precision\_recall\_at\_k function to calculate the metrics on the test data

Areas Performed Well:- 1)Good Job on Initializing a baseline item-item similarity based recommendation system 2)Good job on Fitting the model on the training data 3)Good job on using the precision\_recall\_at\_k function to calculate the metrics on the test data 3/3

Improving Model Performance - Item-Item Similarity-based (Optimized) Recommendation System

- Perform hyperparameter tuning for the item-item similarity-based model - Build the optimized model by using tuned values of the hyperparameters - Predict the rating for a user using the optimized model

Areas Performed Well:- 1)Good Job on Performing hyper-parameter tuning for the item-item similarity-based model 2)Good job on building the optimized model by using tuned values of the hyper-parameters 3)Good job on Predicting the rating for a user using the optimized model 5/5

Model Building - Matrix Factorization based Recommendation System

- Initialize a baseline Matrix Factorization based recommendation system - Fit the model on the training data - Use the precision\_recall\_at\_k function to calculate the metrics on the test data

Areas Performed Well:- 1)Good Job on Initializing a baseline Matrix Factorization similarity based recommendation system 2)Good job on Fitting the model on the training data 3)Good job on using the precision\_recall\_at\_k function to calculate the metrics on the test data 3/3

Improving Model Performance - Matrix Factorisation based (Optimized) Recommendation System

- Perform hyperparameter tuning for the Matrix Factorization model - Build the optimized model by using tuned values of the hyperparameters - Predict the rating for a user using the optimized model

Areas Performed Well:- 1)Good Job on Performing hyper-parameter tuning for the Matrix Factorization similarity-based model 2)Good job on Building the optimized model by using tuned values of the hyper-parameters 3)Good job on Predicting the rating for a user using the optimized model 5/5

Conclusion & Recommendations

- Comparing different models' performance and choosing the final model with reasoning - Provide recommendations that can be acted upon to improve the business outcome

Areas Performed Well:- 1)Good Job on Comparing different models' performance and choosing the final model with reasoning. Areas of Improvement :- 1) Failed to provide recommendations to be acted upon to improve the business outcome such as More features like item metadata, user demographics can be incorporated to provide better recommendations, For new users - Use the Popularity-based Recommender to address the cold start problem etc. 3/5

Report - Overall quality/ Notebook - Overall

Low Code (Business Report): - Structure and flow - Crispness - Visual appeal Full Code (Notebook in HTML format): - Structure and flow - Well commented code

Areas Performed Well:- 1)Your code is well commented on and easy to go through. 2)Good job on following good structure flow. This shows that you fully understand the logical flow of this kind of analysis. 3)Your observations are on point and quite elaborate. 4)Your observations and key insights are well given. 5/5

Points 38/40