1.Advanced ML (Week 8.1 to 10) - Set -1
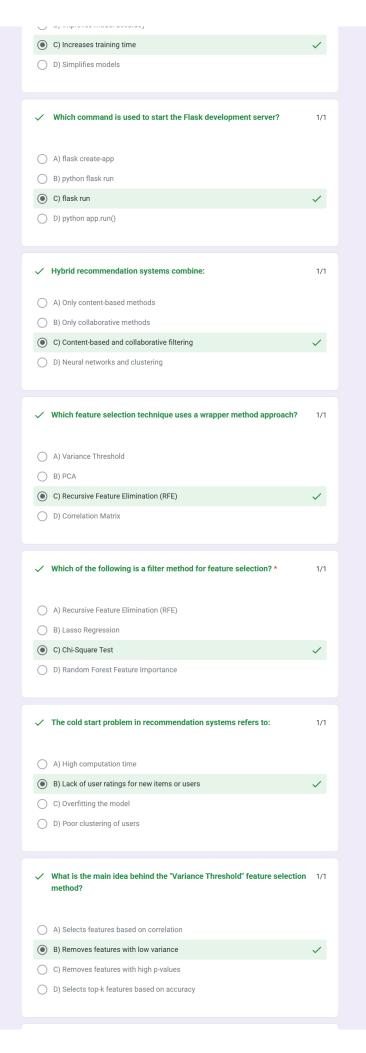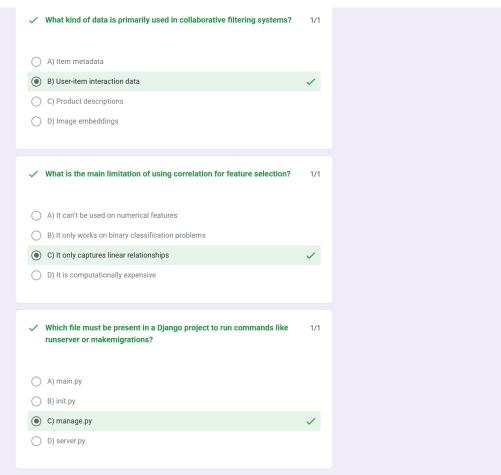
Total points **15/15**

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✓ **In which situation is feature selection least effective?** 1/1

○ A) When the dataset has many irrelevant features

○ B) When model interpretability is important

◉ C) When all features are highly informative ✓

○ D) When dimensionality reduction is needed

✓ **In collaborative filtering, what is the key assumption?** 1/1

○ A) Users prefer the most popular items

◉ B) Users who agreed in the past will agree in the future ✓

○ C) Items with similar content are interchangeable

○ D) Users always rate items explicitly

✓ **Which algorithm is commonly used in matrix factorization-based recommender systems?** 1/1

○ A) KNN

○ B) PCA

◉ C) SVD ✓

○ D) Decision Tree

✓ **Which of the following is true about item-based collaborative filtering?** 1/1

○ A) It finds similarity between users

○ B) It recommends popular items to everyone

◉ C) It compares items based on user ratings ✓

○ D) It uses product categories for recommendations

✓ **Which of the following is a content-based filtering approach?** 1/1

○ A) User-User Collaborative Filtering

○ B) Matrix Factorization

◉ C) TF-IDF Vector Similarity ✓

○ D) K-Means Clustering

✓ **Which of the following is NOT a benefit of feature selection?** 1/1

○ A) Reduces overfitting

○ B) Improves model accuracy

C) Increases training time ✓

D) Simplifies models

✓ **Which command is used to start the Flask development server?** 1/1

A) flask create-app

B) python flask run

C) flask run ✓

D) python app.run()

✓ **Hybrid recommendation systems combine:** 1/1

A) Only content-based methods

B) Only collaborative methods

C) Content-based and collaborative filtering ✓

D) Neural networks and clustering

✓ **Which feature selection technique uses a wrapper method approach?** 1/1

A) Variance Threshold

B) PCA

C) Recursive Feature Elimination (RFE) ✓

D) Correlation Matrix

✓ **Which of the following is a filter method for feature selection? *** 1/1

A) Recursive Feature Elimination (RFE)

B) Lasso Regression

C) Chi-Square Test ✓

D) Random Forest Feature Importance

✓ **The cold start problem in recommendation systems refers to:** 1/1

A) High computation time

B) Lack of user ratings for new items or users ✓

C) Overfitting the model

D) Poor clustering of users

✓ **What is the main idea behind the "Variance Threshold" feature selection method?** 1/1

A) Selects features based on correlation

B) Removes features with low variance ✓

C) Removes features with high p-values

D) Selects top-k features based on accuracy

✓ **What kind of data is primarily used in collaborative filtering systems?** 1/1

○ A) Item metadata

⦿ B) User-item interaction data ✓

○ C) Product descriptions

○ D) Image embeddings

✓ **What is the main limitation of using correlation for feature selection?** 1/1

○ A) It can't be used on numerical features

○ B) It only works on binary classification problems

⦿ C) It only captures linear relationships ✓

○ D) It is computationally expensive

✓ **Which file must be present in a Django project to run commands like runserver or makemigrations?** 1/1

○ A) main.py

○ B) init.py

⦿ C) manage.py ✓

○ D) server.py

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