1. For the user profile matrix you generated in the User Profile-based Recommender System Lab, what does each row represent? 1 / 1 point

- ◯ Course name vector
- ◯ Course genre vector
- ◯ Bag of words vector
- ◉ User profile vector

✓ Correct
Correct. Each row in the generated matrix is a user profile vector.

2. For the User Profile-based Recommender System Lab, which of the following best describes a user profile vector? 1 / 1 point

- ◯ A list of course descriptions
- ◯ A list of genres the user is interested in
- ◯ A list of recommended courses
- ◉ A list of recommendation scores

✓ Correct
Correct. The user profile vector referenced in the lab provides a recommendation score for each course.

3. For the User Profile-based Recommender System Lab, how is each value calculated in the user profile matrix you created? 1 / 1 point

- ◯ The dot product of a course's genre vector by a course's name vector
- ◉ The dot product of a user's course ratings vector by a course's associated genres vector
- ◯ The dot product of a user's profile vector by a course's genre vector
- ◯ The dot product of a user's profile vector by a course's similarity score vector

✓ Correct
Correct. In order to create each value in the matrix, you should find the dot product of a user's course ratings vector by a course's associated genre vector.

4. For the User Profile-based Recommender System Lab, what does each cell value represent in the recommender score matrix you created? 1 / 1 point

- ◉ A course recommendation score for a given user
- ◯ A binary value that tells whether a given course should be recommended to a particular user or not
- ◯ A genre recommendation score for a given user
- ◯ A similarity score between two courses

✓ Correct
Correct. Each row contains the individual recommendation scores for a user by course.

5. For the Content-based Recommender System Lab, why are the values along the diagonal equal to 1 in the course similarity matrix? 1 / 1 point

- Because the similarity measurement of some courses compared to other courses is 0
- Because the similarity measurement of all courses compared to all other courses is between 0 and 1
- Because the similarity measurement of a course compared to itself is equal to 1
- Because the similarity measurement of some courses compared to other courses is 1

Correct
Correct. Identity matrices contain 1s along the diagonal. Since each course compared to itself has a similarity of 1, there are 1s along the diagonal of this matrix.

6. What information does the course similarity matrix discussed in Content-based Recommender System Lab convey? 1 / 1 point

- Displays the correlation coefficients between all courses to all other courses
- Displays the bag of words similarity measurements between all courses to all other courses
- Displays course recommendations for each user
- Displays course genre similarity measurements between all courses to all other courses

Correct
Correct. The similarity measurements presented in the matrix are calculated from each pair of courses' bag of words feature vectors so that you can quickly find the similarity between two courses via querying the matrix.

7. What do the indices in the course similarity matrix from Content-based Recommender System Lab represent? 1 / 1 point

- Genres
- User profiles
- Courses
- Similarity measurements

Correct
Correct. The indices in the course similarity matrix represent individual courses.

8. In the following code, sim_df represents a course similarity matrix. 1 / 1 point

```
sim_matrix = sim_df.to_numpy()
sim = sim_matrix[200][158]
sim
```

What does the output of this code represent?

- The course name found in the cell located in row 200 and column 158
- A course similarity matrix with 200 rows and 158 columns
- A course similarity matrix with 158 rows and 200 columns
- The similarity measurement between the courses with indices 200 and 158

Correct
Correct. This line of code finds the value in the similarity matrix at row 200, column 158.

9. In the Clustering-based Course Recommender System Lab, which of the following ranges contains the point that indicates the optimized number of clusters in order to apply the K-means algorithm to generate the cluster label for all users? 1 / 1 point

- (●) 11-20
- ( ) 30+
- ( ) 0-10
- ( ) 21-30

Correct
Correct. Using the elbow graph, it starts to flatten between 10-15 clusters, so that indicates the optimum number of clusters to use in the K-means algorithm.

10. In the Clustering-based Course Recommender System Lab, which of the following pairs of course genres are the most highly correlated according to the covariance matrix? 1 / 1 point

- (●) Python and DataAnalysis
- ( ) ComputerVision and DataScience
- ( ) CloudComputing and BigData
- ( ) Python and FrontendDev

Correct
Correct. The covariance heatmap matrix shows that Python and DataAnalysis are highly correlated courses.