

- Attempt each question on your own. Learn the underlying concepts in case you are unfamiliar with them. However, we strongly recommend you attempt the questions without copying from the internet or each other. Doing so will maximize your learning.
- **Deadline:** Sunday, 16th January 2022

SQL



1. Create a database using SQL for your class students. At least 10 names should be there including two tables (one table for basic details like first name, last name, department, section, roll number) (Second table for details like contact number, JEE rank(random)).
 2. Using the above dataset, write a SQL query to fetch who got the best rank in JEE.
 3. Write an SQL query to fetch the 3 least JEE ranks for the dataset in Q-1
 4. Write an SQL query to show the last record of the table using the dataset in Q-1
 5. Differentiate between NoSQL and SQL.
 6. What is an SQL Server?
 7. Have you completed any courses on SQL?
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Python

1. What is Python? What makes Python such a popular language?
2. What is lambda in Python? Also, mention the code or expression we use in code.
3. Write a Python program to compute the greatest common divisor (GCD) of the squares of two positive integers.

4. You have invested a certain amount into a cryptocurrency and would like to automate the process of tracking its growth. Write a Python program to calculate its future value, after a given number of years and compounding rate of growth.
 5. What are the use cases for the following libraries:
 - a. Matplotlib
 - b. Seaborn
 - c. Pandas
 - d. Scikit-learn
 6. How are dates handled in Python? and How can you get today's date in python and SQL? Write the code.
 7. How do you identify missing values? (Theory + write some code lines as well).
 8. How do you plot Scatter, heatmap, bar chart, line chart, distribution chart using python? (Also add x-label and y-label, title, and legend).
 9. Have you done any courses on Python for data analysis?
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Resources:

1. <https://cognitiveclass.ai/>
2. <https://www.jovian.ai/>
3. https://drive.google.com/drive/folders/1WPsdFOOlQIAWTFnOHLBtSYujrX_G4xDl
4.  SQL Tutorial - Full Database Course for Beginners
5.  Learn Python - Full Course for Beginners [Tutorial]