**Pandas Questions**

1. How do you read a CSV file and display the first 10 rows?
2. How do you find the number of rows and columns in a DataFrame?
3. Given a DataFrame df, how do you display only the rows where age > 25?
4. Replace all missing values in column salary with the **mean salary**.
5. How do you rename the column emp\_id to employee\_id?
6. How to drop duplicate rows in a DataFrame?
7. How do you convert a column of string dates "2023-05-01" into datetime format?
8. How to group a DataFrame by department and find the total salary for each?
9. How do you sort a DataFrame by date in descending order?
10. Create a new column total\_marks by adding three columns: math, science, and english.
11. How do you filter rows where column score is between 40 and 80?
12. Display the top 3 rows with the highest values in column sales.
13. Find the average, min, and max of the price column using a single function.
14. How to set a column (e.g., date) as the index of a DataFrame?
15. Convert a categorical column gender (with values M/F) into numeric using mapping (M → 1, F → 0).

**NumPy Questions**

1. Create a 1D NumPy array from 0 to 9.
2. Create a 3x3 NumPy array filled with random integers between 1 and 100.
3. How do you find the mean and standard deviation of a NumPy array?
4. Given an array, replace all values greater than 50 with 50.
5. Create a NumPy array and reshape it from 1D to 2D (e.g., 12 elements → 3x4).
6. Find the number of even numbers in a NumPy array.
7. How do you flatten a 2D NumPy array to 1D?
8. Create an array of 10 random floats between 0 and 1.
9. Multiply two NumPy arrays element-wise.
10. Given a NumPy array, how do you find the index of the maximum value?