SQL QUESTION ON HR ATTRITION DATA

1. Retrieve all columns for employees who have resigned.
2. Count the total number of employees in the dataset.
3. Calculate the average years of experience for employees who have resigned.
4. Find the highest salary among current employees.
5. List the unique departments in the dataset.
6. Identify the employee with the longest tenure in the company.
7. Calculate the percentage of employees who resigned compared to the total number of employees.
8. Determine the average age of employees in each department.
9. List the employees who have resigned and had a performance rating of 4 or above.
10. Find the department with the highest average salary for employees who have resigned.
11. Retrieve the employee ID, name, and resignation date for all employees who have resigned.
12. Find the distinct job roles present in the dataset.
13. Calculate the total number of employees in each department.
14. Identify employees with a salary above the average salary in their respective departments.
15. List employees who joined the company before a specific date and have not resigned.
16. Find the top 5 departments with the highest average years of experience.
17. Determine the number of employees who resigned in each year.
18. Calculate the average salary for employees who have resigned, grouped by gender.
19. List employees who have a performance rating below 3 and are still with the company.
20. Find the employees who have the same manager and are in the same department.
21. Retrieve employee names along with their department names.
22. List the employees who have resigned, including their job roles.
23. Display the employee ID, name, and manager name for all employees.
24. Find the average salary for each department, along with the department name.
25. Show the employees who have resigned, along with their performance rating.

**PYTHON EDA QUESTIONS**

1. What is the distribution of age among employees in the dataset?
2. How does the attrition rate vary between different departments?
3. What is the average years of experience for employees who have resigned compared to those who are still with the company?
4. Are there any correlations between employee performance ratings and salary levels?
5. How many employees in each gender category have resigned?
6. What is the distribution of job roles in the company?
7. What is the tenure distribution for employees who have resigned?
8. How does the average monthly income differ across different education levels?
9. Are there any outliers in the dataset, and how do they impact key metrics?
10. Is there a relationship between the length of employment and the reason for resignation?

**Graph-based Questions:**

1. Create a bar chart showing the count of employees in each department.
2. Plot a pie chart illustrating the distribution of employee genders.
3. Visualize the tenure distribution using a histogram.
4. Generate a box plot to identify salary outliers within each department.
5. Plot a line chart to show the trend in the number of resignations over the years.
6. Create a scatter plot to explore the relationship between years of experience and performance ratings.
7. Visualize the average salary for each department using a bar chart.
8. Plot a bar chart to compare the average age of employees across different job roles.
9. Create a stacked bar chart to show the proportion of resignations for each education level.
10. Generate a heatmap to visualize the correlation matrix of key numerical variables.

**Model Building Questions:**

1. Can you build a predictive model to forecast employee resignations based on key features?
2. Implement a classification model to predict high-performing employees.
3. Explore the use of clustering algorithms to identify patterns in employee characteristics.
4. Build a regression model to predict the expected monthly income for employees.
5. Investigate the use of feature importance to understand the factors influencing employee attrition.