# Instructions_20.09_Seaborn

## Seaborn Visualization Instructions

### Task 1: Bar Plot - Average Salary by Department

1. Import necessary libraries and load the dataset into a DataFrame.
2. Compute the average salary for each department using the `groupby` method.
3. Create a bar plot showing average salary by department using Seaborn.
4. Rotate x-axis labels for better readability.
5. Add a title, x-axis label, and y-axis label to the plot.
6. Display the plot.

### Task 2: Scatter Plot - Salary vs Performance Rating

1. Load the dataset into a DataFrame.
2. Create a scatter plot with salary on the x-axis and performance rating on the y-axis using Seaborn.
3. Use different colors or markers to differentiate between departments if needed.
4. Add a title, x-axis label, and y-axis label to the plot.
5. Display the plot.

### Task 3: Box Plot - Salary Distribution by Department

1. Load the dataset into a DataFrame.
2. Create a box plot showing salaries for each department using Seaborn.
3. Customize the appearance of the box plot with color palettes if desired.
4. Rotate x-axis labels for better readability.
5. Add a title, x-axis label, and y-axis label to the plot.
6. Display the plot.

### Task 4: Count Plot - Number of Employees by Department

1. Load the dataset into a DataFrame.
2. Create a count plot showing the number of employees in each department using Seaborn.

3. Use different colors to distinguish between departments if needed.
4. Rotate x-axis labels for better readability.
5. Add a title, x-axis label, and y-axis label to the plot.
6. Display the plot.

## Task 5: Line Plot - Salary Over Time (Start Dates)

1. Load the dataset into a DataFrame and convert the start dates to datetime format.
2. Create a line plot with start dates on the x-axis and salaries on the y-axis using Seaborn.
3. Add markers to the line plot to highlight data points.
4. Add a title, x-axis label, and y-axis label to the plot.
5. Display the plot.

## Task 6: Heatmap - Correlation Matrix

1. Load the dataset into a DataFrame.
2. Compute the correlation matrix for the numerical features.
3. Create a heatmap using Seaborn to display the correlation matrix.
4. Add annotations to the heatmap to show correlation values.
5. Add a title to the plot.
6. Display the plot.

## Task 7: Violin Plot - Salary Distribution by Department

1. Load the dataset into a DataFrame.
2. Create a violin plot showing salary distribution for each department using Seaborn.
3. Rotate x-axis labels for better readability.
4. Add a title, x-axis label, and y-axis label to the plot.
5. Display the plot.

## Task 8: Pair Plot - Relationships Between Numerical Features

1. Load the dataset into a DataFrame.
2. Select the numerical columns for the pair plot.
3. Create a pair plot using Seaborn to show relationships between these numerical features.
4. Add a title to the plot.

5. Display the plot.

## Task 9: Histogram - Salary Distribution

1. Load the dataset into a DataFrame.
2. Create a histogram showing the distribution of salaries using Seaborn.
3. Include a kernel density estimate (KDE) curve if desired.
4. Add a title, x-axis label, and y-axis label to the plot.
5. Display the plot.

## Task 10: FacetGrid - Performance Rating by Project

1. Load the dataset into a DataFrame.
2. Create a `FacetGrid` to generate scatter plots for each project using Seaborn.
3. Map the scatter plot function to show salary versus performance rating.
4. Display the plots.

## Task 11: Strip Plot - Performance Rating by Role

1. Load the dataset into a DataFrame.
2. Create a strip plot with roles on the x-axis and performance ratings on the y-axis using Seaborn.
3. Add jitter to the plot to prevent overlapping of data points.
4. Rotate x-axis labels for better readability.
5. Add a title, x-axis label, and y-axis label to the plot.
6. Display the plot.