Analysis of Employee Salaries:-

Date : 10 March ,2025 || Name:Nikhil || Roll No: 202401100400125

Preface

This analysis's goal is to use a dataset to investigate relationships between employee pay and job positions. Understanding how pay differs by department, experience, and work position is made easier by the analysis. Matplotlib will be used for visualization, and Python and Pandas will be used for data manipulation.

Approach Used :-

In order to prepare the dataset, we will first construct a CSV file with the following information about each employee: Employee ID, Name, Job Position, Department, Salary, and Experience.
1. Data Loading: A Pandas DataFrame will be loaded with the CSV file.
2. Data Cleaning: We'll look for discrepancies and missing values.
3. Exploratory Data Analysis (EDA): Using histograms and other statistical tools, we will produce statistical summaries and illustrate trends.

Referencecs & Credits -

Used Libraried - matplotlib , seaborn ,pandas

CODE STRUCTURE

```python
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt

# Step 1: Load the csv file(The csv file should exist in the same folder as the script)
file_name = "data.csv"

try:
    data = pd.read_csv(file_name)
    print(f"File loaded Successfully\n")
except FileNotFoundError:
    print(f"'{file_name}' not found Please place 'data.csv' in the same folder as this script.")
    exit()

# Step 2: Show basic statistics of Salary and Experience
print("Provided Statistics of Salary and Experience:")
print(data[["Salary", "Experience"]].describe(), "\n")

# Step 3: Plot correlation heatmap (Only numeric columns)
plt.figure(figsize = (8, 5))
sns.heatmap(data[["Salary", "Experience"]].corr(), annot=True, cmap="coolwarm", fmt=".2f")
plt.title(" Correlation Heatmap of Salary and Experience")
plt.show()

# Step 4: Salary Distribution
plt.figure(figsize = (8, 5))
sns.histplot(data["Salary"], bins = 10, kde = True, color = "blue")
plt.title(" Salary Distribution of Employees")
plt.xlabel("Salary")
plt.ylabel("Number of Employees")
plt.show()

# Step 5: Salary vs Experience Scatter Plot
plt.figure(figsize = (8, 5))
sns.scatterplot( x = data["Experience"], y = data["Salary"], hue = data["Department"], s=100)
plt.title("Salary vs Experience")
plt.xlabel("Years of Experience")
plt.ylabel("Salary")
plt.legend(title = "Department", bbox_to_anchor = (1, 1), loc = "upper left")
plt.show()
```