DEVENDRA GURAV AIDS - 21

Assignment - 06

1. Create a Pandas DataFrame from the following dataset:

Name Age Salary Department

John 25 50000 HR

Alice 30 70000 IT

Bob 35 60000 Finance

Carol 28 65000 Marketing

David 40 80000 IT

• Display the first and last two rows of the DataFrame.

• Retrieve the Salary column and compute its mean and standard deviation.

• Filter employees who are older than 30 and belong to the IT department.

• Add a new column Bonus where the bonus is 10% of the salary.

```
import pandas as pd
```

Step 1: Create the DataFrame

```
data = {
    'Name': ['John', 'Alice', 'Bob', 'Carol', 'David'],
    'Age': [25, 30, 35, 28, 40],
    'Salary': [50000, 70000, 60000, 65000, 80000],
    'Department': ['HR', 'IT', 'Finance', 'Marketing', 'IT']
}

df = pd.DataFrame(data)
```

Step 2: Display the first and last two rows

```
print("First two rows:")
print(df.head(2))

print("\nLast two rows:")
print(df.tail(2))
```

```
First two rows:
    Name  Age  Salary Department
0   John   25   50000         HR
1  Alice   30   70000         IT
```

```
Last two rows:
    Name  Age  Salary Department
3  Carol   28   65000  Marketing
4  David   40   80000         IT
```

Step 3: Retrieve Salary column and compute mean and std deviation

```
salary = df['Salary']
print("Salary Mean:", salary.mean())
print("Salary Standard Deviation:", salary.std())

Salary Mean: 65000.0
Salary Standard Deviation: 11180.339887498949
```

Step 4: Filter employees older than 30 in IT department

```
filtered = df[(df['Age'] > 30) & (df['Department'] == 'IT')]
print("Employees older than 30 in IT Department:")
print(filtered)

Employees older than 30 in IT Department:
    Name  Age  Salary Department
4  David   40   80000         IT
```

Step 5: Add a Bonus column (10% of Salary)

```
df['Bonus'] = df['Salary'] * 0.10
print("DataFrame with Bonus column:")
print(df)

DataFrame with Bonus column:
    Name  Age  Salary Department   Bonus
0   John   25   50000         HR  5000.0
1  Alice   30   70000         IT  7000.0
2    Bob   35   60000    Finance  6000.0
3  Carol   28   65000  Marketing  6500.0
4  David   40   80000         IT  8000.0
```