**Ex 5:**

1. import pandas as pd

data = {

"Name": ["Amit", "Neha", "Raj", "Priya"],

"Age": [28, None, 35, 29],

"City": ["Delhi", "Mumbai", None, "Chennai"]

}

df = pd.DataFrame(data)

2. avg\_age = df["Age"].mean()

df["Age"].fillna(avg\_age, inplace=True)

print(df)

3. df\_cleaned = df.dropna()

print(df\_cleaned)

**Ex 6:**

1. df["Salary"] = [50000, 60000, 70000, 65000]

print(df)

2. df = df.drop(columns=["City"])

print(df)

**Ex 7:**

1. df\_sorted\_by\_age = df.sort\_values(by="Age")

print(df\_sorted\_by\_age)

2. df["City"] = ["Delhi", "Mumbai", "Chennai", "Bangalore"] df\_sorted\_by\_city\_age = df.sort\_values(by=["City", "Age"], ascending=[True, False])

print(\_sorted\_by\_city\_age)

**Ex 8:**

1. avg\_age\_by\_city = df.groupby("City")["Age"].mean()

print(avg\_age\_by\_city)

2. count\_by\_city\_age = df.groupby(["City", "Age"]).size()

print(count\_by\_city\_age)

**Ex 9:**

1. df1 = pd.DataFrame({

"Name": ["Amit", "Neha", "Raj"],

"Department": ["HR", "IT", "Finance"]

})

df2 = pd.DataFrame({

"Name": ["Neha", "Raj", "Priya"],

"Salary": [60000, 70000, 65000]

})

2. merged\_inner = pd.merge(df1, df2, on="Name", how="inner")

print(merged\_inner)

3. merged\_left = pd.merge(df1, df2, on="Name", how="left")

print(merged\_left)