import pandas as pd  
  
  
# Creating a new dataset  
data = {  
 "Employee\_ID": [101, 102, 103, 104, 105, 106],  
 "Name": ["Rajesh", "Meena", "Suresh", "Anita", "Vijay", "Neeta"],  
 "Department": ["HR", "IT", "Finance", "IT", "Finance", "HR"],  
 "Age": [29, 35, 45, 32, 50, 28],  
 "Salary": [70000, 85000, 95000, 64000, 120000, 72000],  
 "City": ["Delhi", "Mumbai", "Bangalore", "Chennai", "Delhi", "Mumbai"]  
}  
  
df = pd.DataFrame(data)  
# print(df)  
  
# Exercise 1: Rename Columns  
# Rename the "Salary" column to "Annual Salary" and "City" to "Location".  
dfRenamed = df.rename(columns={"Salary":"Annual Salary","City":"Location"})  
  
# Print the updated DataFrame  
print(dfRenamed)  
  
# Exercise 2: Drop Columns  
# Drop the "Location" column from the DataFrame.  
new\_df\_dropped = dfRenamed.drop(columns=["Location"])  
# Print the DataFrame after dropping the column  
print(new\_df\_dropped)  
  
# Exercise 3: Drop Rows  
# Drop the row where "Name" is "Suresh".  
df\_row\_dropped = dfRenamed.drop(df[dfRenamed["Name"] == "Suresh"].index)  
# Print the updated DataFrame.  
print(df\_row\_dropped)  
  
# Exercise 4: Handle Missing Data  
# Assign None to the "Salary" of "Meena".  
dfRenamed.loc[dfRenamed["Name"]=="Meena","Annual Salary"] = None  
# # Fill the missing "Salary" value with the mean salary of the existing employees.  
mean\_salary = dfRenamed["Annual Salary"].mean()  
dfRenamed["Annual Salary"] = dfRenamed["Annual Salary"].fillna(mean\_salary)  
# Print the cleaned DataFrame  
print(dfRenamed)  
  
# Exercise 5: Create Conditional Columns  
# Create a new column "Seniority" that assigns "Senior" to employees aged 40 or above and "Junior" to employees younger than 40.  
df["Seniority"] = df["Age"].apply(lambda x: "Senior" if x >= 40 else "Junior")  
# Print the updated DataFrame  
print(df)  
  
# Exercise 6: Grouping and Aggregation  
# Group the DataFrame by "Department" and calculate the average salary in each department.  
df\_grouped\_dept = df.groupby("Department")["Salary"].mean()  
# Print the grouped DataFrame.  
print(df\_grouped\_dept)