SQL Queries - Task 4: Data Analysis

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#  Step 1: Import Required Libraries
import pandas as pd
import sqlite3

#  Step 2: Load CSV File
df = pd.read_csv("product_sales.csv")  # Replace with the actual filename
df.head()

#  Step 3: Create SQLite Database and Table
conn = sqlite3.connect("product_sales.db")
df.to_sql("Product_Sales", conn, if_exists="replace", index=False)

#  Confirm table loaded
pd.read_sql("SELECT * FROM Product_Sales LIMIT 5", conn)


#  Step 4: Run SQL Queries

# 1. Average Call Duration
pd.read_sql("""
    SELECT AVG(Duration) AS AvgDuration
    FROM Product_Sales
""", conn)


# 2. Total Products Sold by Each Agent
pd.read_sql("""
    SELECT Agent_Name, SUM(ProductSold) AS TotalSales
    FROM Product_Sales
    GROUP BY Agent_Name
    ORDER BY TotalSales DESC
""", conn)


# 3. Calls Not Picked Up
pd.read_sql("""
    SELECT * FROM Product_Sales
    WHERE PickedUp = 0
""", conn)


# 4. Top 10 Customers with Highest Call Duration
pd.read_sql("""
    SELECT CustomerID, SUM(Duration) AS TotalDuration
    FROM Product_Sales
    GROUP BY CustomerID
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    ORDER BY TotalDuration DESC
    LIMIT 10
""", conn)


# 5. Create a View (Optional — for saving within DB)
conn.execute("""
    CREATE VIEW IF NOT EXISTS AgentSalesSummary AS
    SELECT Agent_Name, COUNT(*) AS TotalCalls, SUM(ProductSold) AS TotalProducts
    FROM Product_Sales
    GROUP BY Agent_Name
""")

# Check view
pd.read_sql("SELECT * FROM AgentSalesSummary", conn)


#  Done — Close connection
conn.close()
```