Advanced MongoDB Exercise on Traffic Management

Objective:

Implement MongoDB operations for managing and analyzing complex traffic data.

Instructions:

Modify the given Python code snippets to perform advanced tasks related to managing traffic data.

Tasks:

1. **Insert Operations:**
   - Insert a document representing traffic data for a road section with the following details:
     - Road: "Highway A1"
     - Date: "2024-07-11"
     - Time: "08:00"
     - Traffic Volume: 1200 vehicles
     - Insert additional fields for weather condition: "Clear", and vehicle type breakdown: {"car": 800, "truck": 300, "motorcycle": 100}.

2. **Query Operations:**
   - Find and print all documents in the collection where the traffic volume is between 1000 and 1500 vehicles. For each document, print all fields including weather conditions and vehicle type breakdown.

3. **Update Operations:**
   - Increment the traffic volume by 200 vehicles for all documents where the road is "Highway A1" and the time is between "08:00" and "10:00" on "2024-07-11".
   - Update the vehicle type breakdown to {"car": 850, "truck": 320, "motorcycle": 130} for the document with the highest traffic volume.

4. **Delete Operations:**
   - Delete all documents where the weather condition is "Rainy".
   - Delete documents where the traffic volume is less than 500 vehicles and the date is before "2024-07-11".

Code Snippet to Start With:

```python
import pymongo
from pymongo import MongoClient
import os

# Connect to MongoDB
CONNECTION_STRING = os.environ.get('CONNECTION_STRING')
client = MongoClient(CONNECTION_STRING)

# Create a database
db = client['traffic_db']

# Create a collection
traffic_collection = db['traffic_data']

# Existing data insertion
traffic_collection.insert_many([
    {'road': 'Highway A1', 'date': '2024-07-10', 'time': '07:30', 'traffic_volume': 1100},
    {'road': 'Highway A2', 'date': '2024-07-11', 'time': '08:30', 'traffic_volume': 900},
    {'road': 'Highway A1', 'date': '2024-07-11', 'time': '08:00', 'traffic_volume': 1200,
     'weather_condition': 'Clear', 'vehicle_type_breakdown': {'car': 800, 'truck': 300, 'motorcycle': 100}},
    {'road': 'Highway A3', 'date': '2024-07-12', 'time': '09:00', 'traffic_volume': 800},
    {'road': 'Highway A1', 'date': '2024-07-11', 'time': '10:00', 'traffic_volume': 1300}
])
```