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Data Analyst - Technical Assessment

Dataset Context:

You are given two datasets **'retail_sales_raw.csv**' and '**customer_reference.csv**' of ABC Company. The 'retail_sales_raw.csv' dataset includes basic information such as transaction date, product details, customer ID, and sales amounts. And containing customer transactions across multiple stores. The 'customer_reference.csv' has all the demographics data of customers.

Your goal is to **create a Sales Report** using the datasets and highlight any key achievements of the company

Part 1: Excel Analysis

Task 1.1

1. Download the provided 'retail_sales_raw.csv' and 'customer_reference.csv' file
2. Create the following new columns using Excel formulas:
   - Customer demographics data columns from 'customer_reference.csv'
   - Transaction Month (MM – YYYY Format)
   - Average Transaction Value per Customer
   - Days Since Last Purchase

Task 1.2

1. Create multiple pivot tables showing:
   - Monthly sales trends by product category
   - Customer segment distribution
   - Customer wise Average Transaction Value
   - Top 3 products by revenue
2. Document any interesting patterns or insights you discover (Min 3 bullet points)

Part 2: Python Analysis

Task 2.1:

1. Import the enhanced Excel file (output from Part 1) into Python
2. Create two additional features of your choice that would be useful for analysis

Task 2.2:

1. Create the following visualizations using any Python library (matplotlib, seaborn, or plotly):
   - Time series plot of daily/weekly sales trends
   - Customer segment performance comparison
2. Calculate and present key metrics:
   - Customer retention rate
   - Average order value by segment

- Any other metric you find relevant

Deliverables:

1. Enhanced Excel file with all calculations and pivot tables
2. Python script (.py or .ipynb format. You may use any IDE)
3. Brief summary of your key findings and recommendations

Note to Candidates:

- Focus on clear, well-documented analysis
- You're welcome to make reasonable assumptions where needed, but please document them