EXPERINMENT-07

7. **Scenario:** You are working as a data analyst for an e-commerce company. You have been given a dataset containing information about customer orders, stored in a Pandas DataFrame named order_data. The DataFrame has columns for customer ID, order date, product name, and order quantity. Your task is to analyze the data and answer specific questions about the orders.
Question: Using Pandas DataFrame operations, how would you find the following information from the order_data DataFrame:
1. The total number of orders made by each customer.
2. The average order quantity for each product.
3. The earliest and latest order dates in the dataset.

Code:

```
import pandas as pd
order_data = pd.DataFrame({
   "customer_id": [1,1,2,3,3,3],
   "order_date":
pd.to_datetime(["2024-01-01","2024-01-05","2024-01-03","2024-01-02","2024-01-08","2
024-01-10"]),
   "product": ["A","B","A","C","B","A"],
   "quantity": [2,1,3,1,4,2]
})
orders_per_customer = order_data.groupby("customer_id").size()
avg_quantity = order_data.groupby("product")["quantity"].mean()
earliest = order_data["order_date"].min()
latest = order_data["order_date"].max()
print(orders_per_customer)
print(avg_quantity)
print("Earliest:", earliest)
print("Latest:", latest)
```

Output:

```
C:\Users\karan\OneDrive\Desktop\New folder (2)>7.py
customer_id
1    2
2    1
3    3
dtype: int64
product
A    2.333333
B    2.500000
C    1.000000
Name: quantity, dtype: float64
Earliest: 2024-01-01 00:00:00
Latest: 2024-01-10 00:00:00
```