Pandas Order Data Analysis - Code and Output

# Python Code

import pandas as pd  
  
# Sample data  
data = {  
 'customer\_id': [101, 102, 101, 103, 102, 104, 101],  
 'order\_date': ['2023-06-01', '2023-06-02', '2023-06-03', '2023-06-05', '2023-06-06', '2023-06-07', '2023-06-10'],  
 'product\_name': ['Laptop', 'Mouse', 'Laptop', 'Keyboard', 'Mouse', 'Monitor', 'Laptop'],  
 'order\_quantity': [1, 2, 1, 1, 3, 1, 2]  
}  
  
order\_data = pd.DataFrame(data)  
order\_data['order\_date'] = pd.to\_datetime(order\_data['order\_date'])  
  
# 1. Total number of orders made by each customer  
total\_orders\_by\_customer = order\_data['customer\_id'].value\_counts().sort\_index()  
  
# 2. Average order quantity for each product  
average\_quantity\_per\_product = order\_data.groupby('product\_name')['order\_quantity'].mean()  
  
# 3. Earliest and latest order dates  
earliest\_order\_date = order\_data['order\_date'].min()  
latest\_order\_date = order\_data['order\_date'].max()

# Output

1. Total Number of Orders Made by Each Customer:  
101 3  
102 2  
103 1  
104 1  
  
2. Average Order Quantity for Each Product:  
product\_name  
Keyboard 1.000000  
Laptop 1.333333  
Monitor 1.000000  
Mouse 2.500000  
  
3. Earliest Order Date: 2023-06-01  
 Latest Order Date: 2023-06-10