PROGRAM-1

Scenario: You are working on a project that involves analyzing student performance data for a class of 32 students. The data is stored in a NumPy array named student_scores, where each row represents a student and each column represents a different subject. The subjects are arranged in the following order: Math, Science, English, and History. Your task is to calculate the average score for each subject and identify the subject with the highest average score.

Question: How would you use NumPy arrays to calculate the average score for each subject and determine the subject with the highest average score? Assume a 4x4 matrix that stores marks of each student in given order.

CODE:

```
import pandas as pd
order_data = pd.DataFrame({
   'customer_id': [101, 102, 101, 103, 102],
   'order_date': ['2023-01-05', '2023-01-10', '2023-02-12', '2023-03-15', '2023-03-20'],
   'product_name': ['Laptop', 'Mouse', 'Laptop', 'Keyboard', 'Mouse'],
   'order_quantity': [1, 2, 1, 3, 4]
})
order_data['order_date'] = pd.to_datetime(order_data['order_date'])
orders_per_customer = order_data.groupby('customer_id').size()
avg_quantity_per_product = order_data.groupby('product_name')['order_quantity'].mean()
earliest_order = order_data['order_date'].min()
latest_order = order_data['order_date'].max()
print("Total Orders per Customer:\n", orders_per_customer)
print("\nAverage Order Quantity per Product:\n", avg_quantity_per_product)
print("\nEarliest Order Date:", earliest_order)
print("Latest Order Date:", latest_order)
```

OUTPUT: