1.

   a. Fetch the list of universities.
   b. Determine the number of universities.
   c. Generate unique random numbers as indices.
   d. Store university names in a NumPy array.
   e. Create a NumPy structured array with the generated indices and university names.

2.

   a. Fetch the university data from the API.
   b. Generate unique random numbers as Unicode indices.
   c. Store university names in a NumPy array.
   d. Save the NumPy array to an Excel file using numpy.savetxt() in CSV format.

3. Create a NumPy array of daily temperatures for one year (365 days).
   a. Find the hottest day, coldest day, and number of days above 30°C.

4. Airline Passenger Data Analysis
   a. Generate random monthly airline passenger numbers for 5 years.
   b. Find the month with the highest and lowest passengers.
   c. Calculate yearly average passengers and growth rate.

(Customer ID, Purchase Amount, Discount, Category Code)

([

[101, 250.50, 10, 1],

[102, 120.00, 5, 2],

[103, 310.75, 15, 3],

[104, 90.25, 0, 1],

[105, 500.00, 20, 4],

[106, 75.50, 0, 2],

[107, 150.00, 10, 3],

[108, 600.00, 25, 4],

[109, 220.00, 5, 1],

[110, 130.00, 8, 2]

])

5. Filtering Transactions
    a. Find all transactions where the purchase amount is greater than $200.
    b. Extract all transactions where a discount of more than 10% was applied.
6. Index Searching
    a. Find the indices of transactions where the purchase amount is exactly $150.
    b. Identify the index of the highest purchase amount.
7. Category-Based Analysis
    a. Extract all transactions that belong to Category Code 3.
    b. Find the tota l purchase amount for each category.
8. Customer Behavior Analysis
    a. Find the total amount spent by a specific customer (e.g., Customer ID 105).
    b. Identify customers who made multiple transactions (if applicable).
9. Sorting and Ranking
    a. Sort the transactions based on purchase amount in descending order.
10. Advanced Filtering

a. Identify transactions where the purchase amount is between $100 and $300.