Real-Life Python Programming Problems

Tuple-Based Real-Life Problems

1. Store student details (name, age, grade) using tuples and display them.

2. Store GPS coordinates as tuples and calculate distance between two.

3. Store (account_no, amount, type) in tuples and extract only deposits.

4. Each tuple has (day, temperature). Print the hottest day.

5. Extract all flight destinations from a list of flight info tuples.

6. Sort employee tuples based on salary.

7. Tuple of (student_name, subject, score), find highest scorer per subject.

8. Use a tuple to represent a config setting and explain immutability.

9. Given (city, STD code), find city for a given code.

10. From tuple (product_id, name, price), display affordable products.

11. Get all movie titles released after 2010.

12. Store contacts as (name, number) and search by name.

List-Based Real-Life Problems

1. Add/remove items from a shopping cart and calculate total.

2. Store book names and remove a book once it's issued.

3. Maintain a to-do list and mark completed tasks.

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4. Count votes from a list and find the winner.

5. Get average, max, and min of student marks.

6. Maintain list of team members, add/remove dynamically.

7. Track stops from origin to destination using a list.

8. Store and plot stock price trends over a week.

9. Sort daily sales to find highest earning day.

10. Merge two user watchlists and remove duplicates.

11. List of students present, find absentees.

12. Store feedback messages and count negative ones.

13. Store AQI values and classify each day as Good, Moderate, etc.

Set-Based Real-Life Problems

1. Remove duplicate email addresses from a mailing list.

2. Track unique website visitors using set of IPs.

3. Find common users between two product sales using sets.

4. Find items common in two festival shopping lists.

5. Check if a winning ticket number is in the participant set.

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6. Check which candidate skills match job requirements.

7. Find common symptoms among multiple patients.

8. Suggest mutual friends using intersection of sets.

9. Check which products are missing from stock.

10. Find who responded to both or only one of two surveys.

11. Check if a directory contains duplicate files.

12. Get users interested in both music and sports.

String-Based Real-Life Problems

1. Check if password has upper, lower, digit and symbol.

2. Create short versions of given URLs using string slicing.

3. Count vowels, consonants, digits in a paragraph.

4. Convert full names to initials (e.g., Deepak Dhingan -> D.D.).

5. Extract timestamp and error type from a server log.

6. Find wrongly spelled words by comparing with a dictionary list.

7. Extract valid Indian mobile numbers from a string.

8. Extract all emails from a given text file.

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9. Check if a product name or sentence is a palindrome.

10. Count how many times each word appears in a blog post.

11. Remove special characters and multiple spaces from user input.

12. Flag inappropriate words in user comments.

13. Extract and count hashtags used in social media posts.