Lists, Dictionaries and Tuples

1. **Create a dictionary where each subject (e.g., "Math", "Science") is a key, and the value is a list of tuples containing student names and their scores. Write a function to find the student with the highest score in each subject.**

2. **Create a zip code directory as a dictionary where each city name is a key, and the value is a tuple of (state, zip_code). Then, write a function to reverse this mapping so that the zip code is the key, and the value is a list of cities sharing that zip code.**

3. **Create a dictionary where employee names are keys and their ages are values. Write a function to produce a tuple containing the names of the oldest and youngest employees.**

4. **Create a list of dictionaries representing a sports team roster, where each dictionary has a player's name, position, and score. Write a function to group players by position in a new dictionary where each position is a key and the value is a list of player names.**

5. **Create a dictionary to store weather readings for a week, with each day as a key and a tuple (temperature, humidity) as the value. Write a function to find the day with the highest temperature and the day with the lowest humidity.**

6. **Create a list of dictionaries representing an online shopping cart, where each dictionary contains item, price, and quantity. Write a function to calculate the total price and find the item with the highest individual total (price * quantity).**

7. **Create a book catalog as a list of dictionaries, with each dictionary containing title, author, and genre keys. Write a function to reorganize the catalog by genre into a new dictionary, where each genre is a key and the value is a list of book titles.**

8. **Create a dictionary to track student enrollments, where each course is a key and the value is a tuple containing the total number of spots and the enrolled student count. Write a function to identify courses that still have available spots.**

9. **Create a list of dictionaries representing users on a social media platform, where each dictionary includes username, followers, and following (both as lists of usernames). Write a function to find mutual followers between two users.**

10. **Create a dictionary to track museum exhibits, where each exhibit is represented by a dictionary containing name, room, and visitors (a list of tuples representing**

date and visitor count). Write a function to find the most visited exhibit and the busiest day for each exhibit.

11. Create a list of tuples representing an event schedule, where each tuple contains (event_name, start_time, end_time). Write a function to check if any events overlap based on their times.

12. Create a dictionary to represent each library member, where each member has name, borrowed_books (a list of tuples with title and due_date), and membership_type. Write a function to return overdue books and filter by membership type.

13. Create a list of tuples to track daily sales, where each tuple contains (product, quantity_sold, price_per_unit). Write a function to find the product with the highest sales revenue and summarize total revenue per product.

14. Create a dictionary to represent neighborhood residents, where each house number is a key and the value is a list of resident names. Write a function to return the house with the most residents and a sorted list of all unique residents.

15. Create a dictionary to store product reviews, where each product ID is a key and the value is a list of tuples representing (username, rating). Write a function to calculate the average rating for each product.

16. Create a dictionary to manage hotel reservations, where each reservation includes room_number, guest_name, and dates (a list of tuples with check_in and check_out). Write a function to check room availability on a specific date.

17. Create a dictionary to organize weekly meal plans, where each key is a day of the week, and the value is a list of tuples representing meal_time and meal. Write a function to return all unique meals planned for the week.

18. Create a dictionary to track customer purchase histories, where each customer's name is a key and the value is a list of tuples with item, date, and price. Write a function to calculate total spending for each customer and identify the top spender.

19. Create a dictionary to store real estate listings, where each listing includes location, price, and features (a list of strings). Write a function to filter listings based on a maximum price and a specific feature (e.g., "pool").

20. Create a recipe collection as a dictionary where each recipe name is a key, and the value is a list of tuples representing ingredient and quantity. Write a function to return all unique ingredients across all recipes and count how many times each ingredient is used.