

# Assignment for Advanced Tuple Techniques and Applications

## Instructions:

- Solve the following exercises related to advanced tuple techniques in Python.
- Write the solution code for each exercise.
- Include comments to explain your code where necessary.
- Test your functions with sample inputs to ensure correctness.
- Write the answers in a Python script file or a Jupyter Notebook.

## Exercises:

### **Tuple Packing and Unpacking:**

Explain the concept of tuple packing and unpacking in Python with examples.

### **Extended Unpacking with Multiple Rest:**

Discuss how extended unpacking with multiple rest works in Python. Provide an example scenario where this technique can be useful.

### **Named Tuples vs Regular Tuples:**

Compare and contrast named tuples and regular tuples in Python. What are the advantages of using named tuples over regular tuples?

### **Tuple Comprehensions with Condition:**

How are tuple comprehensions with conditions different from list comprehensions in Python? Provide an example of using a tuple comprehension with a condition.

### **Immutable Data Structures:**

Explain why immutability is an important property of tuples in Python. Discuss a scenario where using an immutable data structure like a tuple is preferred over a mutable data structure.