Python Assignment & Tutorial - III

Assignment Questions

1. A. Are lists mutable? If yes, what are various Python built-in List methods? Illustrate any 5 methods with examples. (or)

   B. Are dictionaries indexed? If no, explain any 5 built-in Dictionary methods with examples.

2. What is a nested list? Write a program to add two 3-D matrices using lists and print the result.

3. A. Compare a function, a fruitful function, and an anonymous function with an example for each.

   B. What is a lambda function? Describe its characteristics with an example.

4. What are the different types of arguments (or parameter passing) in Python functions? Justify with suitable examples.

5. What are Modules and Packages in Python?

   a. How to import specific attributes from a module into the current Namespace. Illustrate it with an appropriate code.

   b. Briefly describe and illustrate any two packages with an example program.

Tutorial Questions:

6. Define and compare the properties of a list, tuple, dictionary, and set.

7. What is list comprehension? Demonstrate it with an example program.

8. How to pass a list into a function? Explain with an example program.

9. What is recursion? Write a program to find the factorial of a given number using recursion.

10. What is PIP? Explain how to install packages using PIP with at least 2 examples.

List of Programs

1. Write a Python program to sort the given input strings.
2. Write a program to find the number of occurrences of a letter in a string using dictionaries.
3. Write a program to print the intersection of two lists without using list comprehension or sets.
4. Write a program with a recursive function to compute the sum of all elements in a list of lists.
   Sample input: [2,4, [3,6,7],[3,4]]   Result: 29
5. Write a Python program to read a word and print the number of letters, vowels, and percentage of vowels in the word using a dictionary.
6. Write a program to print all factors of a given number.
7. Write a Python program with a function that returns True if two lists have a common member.
8. Write a Python function to find and print the odd numbers from a given list.