ASSIGNMENT 1 - PYTHON

Q1. Explain the 3 differences between List and tuples.

Q2. You're a Data Scientist. You have assigned a task to perform. Create two lists l1 & l2, where l1 has values -> (1,2,3,4,5,6) and l2 has values -> (6,5,4,3,2,1). Compare the corresponding element values of both the lists and print "L1 element value is greater than L2 element value" if corresponding value from l1 is greater else print "L1 element value is less than L2 element value" if corresponding value from l1 is less than l2.

Q3. Write a Python user defined function that takes a list of numbers from user and returns a dictionary with the number as the key and its square as the value.

Q4. You work in a Company as a Analyst. The company officials want you to build a python based Calculator. Write code to create a user defined function named Calculator.

- User will pass 3 parameters in Calculator function – int1, int2, task
- The task string will be 'add', 'sub', 'mul', 'div'. Perform Addition, Subtraction, Multiplication and Division on the two numbers(int1, int2) respectively. Make sure the task parameter is case insensitive (meaning that even if user passes 'aDd' as command it should perform addition on two numbers).
- Define logics for addition, subtraction, multiplication and division in Calculator function that take in two numbers and return another number after performing their respective operations.

Eg: Calculator(2,5,ADD) should return 7
Calculator(7,1,SuB) should return 6

Q5 Write a Function to check if the year number is a leap year or not. Print all Leap Years of 21st Century.

Q6. Write a python code to print the following pattern.

1

1 2

1 2 3

1 2 3 4

1 2 3 4 5

Q7 Write a Python program to convert a list of tuples to dictionary?

Eg: I/P -- [("name","Virat"),("surname","Kohli"),("yob",1986)]
O/P -- {'name': 'Virat', 'surname': 'Kohli', 'yob': 1986}

Q8 . Write a Function to take a list from user and return 2 lists:

- 1st list should contain all even indexed numbers.
- 2nd list should contain all odd indexed numbers.

Q9. Create a function longest_word(sentence) that takes a sentence as input and returns the longest word in the sentence. If two or more words have the same length, return the first one.

Eg: longest_word("Python programming is fun") # Output: 'programming'

Q10. Write a Python program that takes a list and counts the frequency of each element using a dictionary. The keys of the dictionary should be the list elements, and the values should be the counts

Eg: I/P: [1, 2, 2, 3, 4, 4, 4, 5, 5]
o/p: {1: 1, 2: 2, 3: 1, 4: 3, 5: 2}