

Ramaiah Institute of Technology (Autonomous Institute, Affiliated to VTU)

**Department of Computer Science & Engineering**

**Data Visualization with Python Lab(CSL48)**

**USN:**

**Week #: 02**

**Semester:**

**Section:**

**Date:**

**Instructions:**

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* **Implement the following programs using python language.**

**Topic:** Functional Programming in Python: Introduction to functions ,lambda, map, filter, reduce,

and decorators, Higher-order functions.

**Programs:**

1. a. Write a Python function that takes two numbers as arguments and returns their sum.

b. Write a Python function that accepts a list of numbers and returns the maximum number

in the list.

1. a. Write a Python program using a lambda function to find the product of two numbers.

b. Write a Python program using a lambda function to sort a list of tuples based on the second element.

1. a. Write a Python program using map() to convert a list of strings into uppercase.

b. Write a Python program using map() to compute the square of each number in a given list.

4. a.Write a Python program using filter() to extract even numbers from a list.

b.Write a Python program using filter() to remove empty strings from a list.

5. a.Write a Python program using reduce() to find the maximum number in a list.

b.Write a Python program using reduce() to compute the product of all numbers in a given

list.

6. a.Write a Python decorator that prints "Before calling function" and "After calling function"

around the execution of any function.

b.Write a decorator that converts the output of a function to uppercase.

7. Write a Python program where a function returns a lambda function that multiplies a number

by a given factor.

8. Write a Python function that takes two functions as arguments and applies both functions to a

given value in sequence.