RAMAIAH
Institute of Technology

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:

- **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.
2. 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.
3. 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.