ED5340:Data Science: Theory and practice

Lab 5: Part 1- Functions and classes

✔ Done

Opened: Wednesday, 21 February 2024, 1:30 PM
Due: Wednesday, 21 February 2024, 5:00 PM

1. Write a program(WAP) using loops and recursion:

a) Factorial of n where n is a non negative integer.

b) For calculating the Nth Fibonacci number.

c) To calculate a^b where a>0, b>=0.

2. Query for 2 integers N and M from the user where 0<=N<=100 and 0<=M<=9. These will be the inputs to your function. Using recursion, compute the number of times the integer M occurs in all non-negative integers less than or equal to N.
example: For N=13 and M=1, count=6 (numbers 1,10,11,12,13).

3. Programs using lambda function.

a) Given a list of names, use `map` to create a list where each name is prefixed with "Hello, ".

- Example Input: `['Alice', 'Bob', 'Charlie']`
- Example Output: `['Hello, Alice', 'Hello, Bob', 'Hello, Charlie']`

b) Use `filter` and a `lambda` function to extract all even numbers from a given list.

- Example Input: `[1, 2, 3, 4, 5, 6]`
- Example Output: `[2, 4, 6]`

c) Use `reduce` and `lambda` to concatenate all strings in a given list.

- Example Input: `['Python', 'is', 'awesome']`
- Example Output: `'Pythonisawesome'`

4. Define a class Complex that defines a complex number with attributes real and imaginary (as we did in the class). Define operators for addition, subtraction, multiplication and division (Do with both operator overloading as well as without overloading). While printing the output, print in the form of complex number form like (a + ib) - 10 marks (1 mark each for each of the operations with and without operator overloading)

Edit submission | Remove submission

Submission status

Submission status	Submitted for grading
Grading status	Graded
Time remaining	Assignment was submitted 1 hour 11 mins early
Last modified	Wednesday, 21 February 2024, 3:48 PM
File submissions	AM23M022_LAB5_PART1_21_02_2024.py 21 February 2024, 3:48 PM
Submission comments	Comments (0)

Feedback

Grade	10.00 / 10.00
Graded on	Monday, 3 June 2024, 9:10 AM
Graded by	eM ed19b019 MISHMA MARIYAM RAJU

◄ CW2 - Class on 19/02/2024

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LAB 5: PART 2- FUNCTIONS AND CLASSES ►