ED5340:Data Science: Theory and practice

LAB 3 PART 1: LIST, SET AND TUPLE

✔ Done

Opened: Wednesday, 7 February 2024, 1:30 PM
Due: Wednesday, 7 February 2024, 5:00 PM

1.Write a program (WAP) to implement the following operations on a collection of library books:

(a) Construct a catalog of books, with each book having an author's name, book title, ISBN number, publication year, and number of pages.

(b) Add a new book to the catalog, ensuring that the books are kept in ascending order based on the publication year.

(c) Locate a book by its ISBN number and delete the book's entry from the catalog.

(d) Insert a new book entry at the end of the catalog using the provided book information.

(e) Identify and remove any duplicate entries in the catalog, preserving only one copy of each book based on its ISBN number.

(f) Reorganize the entire catalog so that the books are sorted in descending order by the number of pages.

2. Write a program using list comprehension

a) To add the corresponding elements of two lists and print the new list.

b) To perform element wise multiplication of two lists and print the new list.

c) To create a list of the unique characters of a given string.

Eg: input = "hello" , output = ['h', 'e', 'l', 'o']

3. Using the zip function, WAP

a) To add the elements of 2 matrices (Define matrices as per your wish).

b) To perform element wise multiplication on 2 matrices.

4. List of List : Given a square matrix represented as a list of lists,

a) WAP to print the row sum, column sum and trace of the matrix

b) WAP to print the transpose of the matrix.

c) WAP to check whether the given matrix is symmetric or not.

d) WAP to check whether the Identity matrix (I) is positive definite or not by using Quadratic form method (x^T*I*x > 0), where x is any non zero vector.

5. List of Lists : WAP to remove sub lists from a given list of lists that contain an element outside a given range.

Example :

Input : [[3], [1, 3, 2], [0, 1, 9, 3, 5, 7], [9, 10], [13, 14, 16, 17]] Range: 1, 5

Output : [[3], [1, 3, 2]]

Explanation : If a sublist has a number that is other than 1, 2, 3, 4, 5, remove the sublist from the list of lists and print the remaining sublists as a lists of lists

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Submission status

Submission status	Submitted for grading
Grading status	Graded
Time remaining	Assignment was submitted 1 min 54 secs early
Last modified	Wednesday, 7 February 2024, 4:58 PM
File submissions	AM23M022_LAB3_07_02_2024.py 7 February 2024, 4:58 PM
Submission comments	Comments (0)

Feedback

Grade	10.00 / 10.00
Graded on	Monday, 3 June 2024, 8:48 AM
Graded by	eM ed19b019 MISHMA MARIYAM RAJU

◄ Class on 05/02

Jump to...

LAB 3 - PART2: LISTS, SET AND TUPLE ►