ED5340:Data Science: Theory and practice

LAB 4: PART-1 :DICTIONARY AND FUNCTIONS

✔ Done

Opened: Wednesday, 14 February 2024, 1:30 AM
Due: Wednesday, 14 February 2024, 5:00 PM

1. Explore the use and syntax of common built-in functions:

- **range(),**
- **iter(),**
- **eval(),**
- **enumerate(),**
- **zip(),**
- **lambda,**
- **input(),**
- **map(),**
- **filter(),**
- **next()**
- **reduce()**

Include a short description and a practical code example for each, ensuring clarity through comments.

2. Write a Python function that sorts a dictionary based on the length of values.

Sample:

Input: {'lemon':'yellow','apple':'red'} output: {'apple':'red','lemon':'yellow'}

3. Develop a Python program that executes the following tasks with a user-provided string:

a. Prompt the user to input a string.

b. Create a dictionary from the string where each key is a unique alphabet character and the corresponding value is the frequency of that character's occurrence in the string.

c. Generate a sorted list of tuples from the dictionary based on character frequency (values).

d. Generate a sorted list of tuples from the dictionary based on the alphabet characters (keys).

e. Identify the three most frequently occurring characters. In the event of a frequency tie, prioritize characters in lexicographical order.

Your program should showcase proficiency in dictionary operations, sorting mechanisms, and handling of ties in frequency counts. Comment your code to outline the process and decisions made.

sample:

input = 'GOOGLE'

Here, the most repeated characters are G:2, O:2. But, L,E are occurring only a single time which is tied for the third position here, so here we take E as it comes first in the lexicographical order.

4. Write a function called lookup_student that takes a dictionary representing student records, where names are keys and roll numbers are values. The function should search for a specified student name and return the corresponding roll number if found; otherwise, it should return "Not Found"

Example:

records = { "Alice" : "AB111", "Bob" : "EE200", "David" : "XY333"}

print(lookup_student(records, "Bob")) : Should print "EE200"

print(lookup_student(records, "John")) : Should print "Not Found"

5. Given a list of integers, write a Python program to:

a) Find the frequency of each integer in the list and store the result in a dictionary.

b) Print the maximum integer and its frequency.

c) Remove duplicates from the list and print the new list without changing the order of elements. Do this operation without using the set data type.

d) Remove duplicates from the list and print the new list. Do this operation using the set data type.

Submission status

Submission status	Submitted for grading
	This assignment is not accepting submissions
Grading status	Graded
Time remaining	Assignment was submitted 8 mins 27 secs early
Last modified	Wednesday, 14 February 2024, 4:51 PM
File submissions	AM23M022_LAB4_PART1_14_02_2024.py 14 February 2024, 4:51 PM
Submission comments	Comments (0)

Feedback

Grade	10.00 / 10.00
Graded on	Monday, 3 June 2024, 8:57 AM

Graded by eM ed19b019 MISHMA MARIYAM RAJU

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LAB 4: PART-2: DICTIONARY AND FUNCTION ►