Department of Computer Science and Engineering
PES University, Bangalore, India

Lecture Notes
Python for Computational Problem Solving
UE23CS151A

Lecture #35
Problem solving using dictionary

By,
Prof. Sindhu R Pai,
Anchor, PCPS - 2023
Assistant Professor
Dept. of CSE, PESU

Verified by,
PCPS Team - 2023

Programs on dictionary

Solutions are available in this link:

https://drive.google.com/file/d/1JXzIdbw3JWI8xhcb_YCD54MzLTWA7Pg9/view?usp=share_link

1. Create an empty dictionary. Add 5 elements to it by taking key and value as inputs from the user. Display the updated dictionary elements in separate lines in this format. Key ---> value

2. Create a dictionary having key as the number and value as the square of a number from 1 to n.

3. Create a dictionary with Student name as the key and marks as value by taking n inputs from the user. Find the class average.

4. d={'roshan': {'math':100,'phy':90,'chem':90}, 'dhruv': {'math':90,'phy':89,'chem':95}, 'alisha': {'math':95,'phy':95,'chem':93}, 'naveen': {'math':98,'phy':91,'chem':92} }

   Given the name, find the marks in both math and chem subjects. If name doesn't exist, display appropriate message.

   Find the class average in math, phy and chem. subjects. Store this in a dictionary and display it nicely line by line.

5. Count the occurrences of a every word in a sentence n="how much wood would a wood chuck chuck if a wood chuck could chuck wood".

6. List all the words that start with the same alphabet in a sentence entered by the user.

7. Create a dictionary with n employee details. The key - value pair represents an employee information such as employee grade and salary. Calculate the average salary of all the employees whose grade is A and B.

   Note: The user can give grade either in upper or lower case

8. Create a dictionary with student name as key and marks as values. Write a Python program that displays the names of all the students who obtained more than 80 in alphabetical order.

9. Write a program to count the number of vowels in a given string.

10. Create a dictionary called product having n product code and product price as the key-value pair. Write a Python program to find the highest and lowest price of the product and display (average) of both.

11. Given a list of books details in a file containing three words in each column – Language Author Book. Find the solution for the following questions
1. Find the number of books
2. Find the number of languages
3. Display the list of books in each language
4. Find the number of authors in each language
5. Find the list of authors in each language
6. Find number of books of each author
7. Find the list of books of each author
8. Find number of books of each author in each language
9. Find the list of books of each author in each language
10. Add two books to the given data with all the required details

12. Given the list of places in a text file in **state   city   place format** line by line, find the solution for the below questions
1. Find the number of unique states
2. List the set of places in each city
3. List the places, city wise in every state

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