

LAB II: PYTHON FUNDAMENTALS: LIST, DICTIONARIES, TUPLE, STRING, FILE HANDLING

Siksha 'O' Anusandhan (Deemed to be University),
Bhubaneswar

Branch:		Section:	
S. No.	Name	Registration No.	Signature

Marks: ____/10

Remarks:

Teacher's Signature

Objectives:

1. Write a program to accept some string from the keyboard and display its characters by index wise (both positive and negative index).
2. a. Demonstrate the following functions/methods which operate on strings in Python with suitable examples:
i) len() ii) strip() iii)rstrip() iv) lstrip() v) find() vi) rfind() vii) index() viii) rindex() ix) count() x) replace() xi) split() xii) join() xiii) upper() xiv) lower() xv) swapcase() xvi) title() xvii) capitalize() xviii) startswith() xix) endswith()
b. Write a Python program to extract all numbers from a string and calculate their sum.
3. Write a Python program to access each character of string in forward and backward direction by using while loop.
4. Write a Python program to perform basic encryption on a given string.

For example, replacing each character in a string with its equivalent character is as by shifting the character in alphabet sequence forward to the next 3 places in the English alphabets.
5. a) Demonstrate the following functions/methods which operate on lists in Python with suitable examples.
i) list() ii) len() iii) count() iv) index() v) append() vi) insert() vii) extend() viii) remove() ix) pop() x) reverse() xi) sort() xii) copy() xiii) clear()
(b) Define a function that eliminates the duplicate values in the list. Write a Python program that reads in ten integers, invokes the method, and displays the result.
6. Write a Python program to enter elements in an empty List of size 'n' and find the maximum number in the list.
7. Write a Python program to create a list of size N and store the random values in it and find the sum and average.
8. Input 10 integers from the keyboard into a list. The number to be searched is entered through the keyboard by the user. Write a Python program to find if the number to be searched is present in the list and if it is present, display the number of times it appears in the list.
9. Write a Python program that randomly fills in 0s and 1s into a 4-by-4 matrix, prints the matrix, and finds the first row and column with the most 1s. Here is a sample run of the program.
10. Write a Python program to enter name and percentage marks in a dictionary and display information on the screen.
11. Write a program to accept student name and marks from the keyboard and creates a dictionary. Also display student marks by taking student name as input.
12. Write a Python program to perform read and write operations on a file.
13. Write a Python program to reverse first n characters in a file.
14. Write a program that reads a file, breaks each line into words, strips whitespace and punctuation from the words, and converts them to lowercase.
15. Write a Python program to compute the number of characters, words and lines in a file.

Post Lab:

1. Write a Python program to check whether a string starts with vowel or not.
2. Check if the first and last numbers of a list is same or not. Take a pre-defined list in the code itself.
3. Consider the following program. Write the output.

```
f = open('PYTHON', 'w')  
description = ['we either choose the pain of discipline \n', 'or\n' 'the pain of regret\n']  
f.writelines(description)  
f.close()  
f = open('PYTHON', 'r')  
print(f.read())  
f.close()
```