

Introduction to Computing using Python Laboratory(UE19CS102)

Week 8 – Programs on Lists and Strings

1	<p>Program to count number of characters (all), alphabets, digits & special charaters in a given string & print the same.</p> <p>Solution:</p> <pre>s=input("Enter a string") alpha=0; digit=0; special=0; low=up=0 for c in s: if(c.isalpha()): alpha+=1 if(c.isupper()): up+=1 else: low+=1 elif(c.isdigit()): digit+=1 else: special+=1 print("Total number of characters = ", alpha+digit+special, "\nNumber of alphabets = ",alpha,"\nNumber of upper case alphabets = ",up, "\nNumber of lower case alphabets = ",low, "\nNumber of digits = ",digit,"\nNumber of special characters = ",special)</pre>
2	<p>Write a Program to remove all occurrences of a number entered by the user in the given list.</p> <p>l1=[12,34,56,12,12,34]</p> <p>Sample input: enter the number: 12</p> <p>Sample output: 12 is present 3 times & is deleted from the list New list is [34, 56, 34]</p> <p>Solution:</p> <pre>l1=[12,34,56,12,12,34] num = int(input("enter the number: ")) c=0 if num in l1: c=l1.count(num) if(c>1): i=0 while(i<c): l1.remove(num)</pre>

	<pre> i+=1 else: l1.remove(num) else: print(num,"doesn't present in the list") if(c>=2): print(num," is present ",c,"times & is deleted from the list") print("New list is ",l1) elif(c==1): print(num," is present only once") </pre>
3	<p>Given a heterogenous list, create separate lists for different types of data. Write a program to achieve the same.</p> <p>Solution:</p> <pre> l1=["facebook",{23,89},{8.4,9.3},"watsapp",25,90, ("p","e","s"),45,.9,9.5,2,150,(78,56),[45,90,23],["pes","pesu"]] l_int=[];l_float=[];l_str=[];l_tuple=[];l_list=[];l_set=[] for i in l1: c=type(i) print(c) if(c==int): l_int.append(i) elif(c==float): l_float.append(i) elif(c==str): l_str.append(i) elif(c==tuple): l_tuple.append(i) elif(c==list): l_list.append(i) else: l_set.append(i) print("list of integers",l_int) print("list of floats",l_float) print("list of strings",l_str) print("list of lists",l_list) print("list of tuples",l_tuple) print("list of set",l_set) </pre>
4	<p>Given a list of strings, count and print the number of strings where the string length is 2 or more & the 1st & last characters are same.</p> <p>Solution:</p> <pre> list = ["abc","bbc", "madam", "dad","hi","pp"] count = 0 for word in list: if(len(word)>1 and word[0] == word[-1]): </pre>

	<pre> count+=1 print("Total number of strings are ",count) </pre>
5	<p>Write a program to find the second largest number in a list.</p> <p>Solution:</p> <pre> numbers=[1, 1, 1, 0, 0, 0, 2, -2, -2] if (len(numbers)<2): print("give a better list") if ((len(numbers)==2) and (numbers[0] == numbers[1])): print("give different numbers") dup_items = set() uniq_items = [] for x in numbers: if x not in dup_items: uniq_items.append(x) dup_items.add(x) uniq_items.sort() print(uniq_items[-2]) </pre>
6	<p>Write a program to display the smaller of the corresponding elements in the two lists. If the input lists have n elements each, the resulting list also have n elements.</p> <p>Sample input: l1 = [1, 75,-3, 0] l2 = [5, 45, 2, -1]</p> <p>Sample Output: [1, 45, -3, -1]</p> <p>Solution:</p> <pre> l1 = [10, 20, 15, 30] l2 = [1, 25, 17, 12] res = [] for i in range(len(l1)): if l1[i] < l2[i]: res.append(l1[i]) else: res.append(l2[i]) print(res) </pre>