Python - Daily Test 10 - 7-Feb-17 (Functions)

1. Write a program in Python for calculating time difference as below.

**Given the start time and end time of a race in the format hh:mm:ss. You task
is to print the time taken to complete the race in [hh:mm:ss]**

**You can initialize start time and end time in list. Implement logic in function by accepting start time and end time as arguments and return time
difference. Store time difference in list as [hours, mins, secs]**

Following is just an example, code should be generic. But can initialize starttime and endtime in list.

If, starttime = [13, 50, 45], endtime = [14, 55, 50]. The result should be, timediff = [1,5,5]

If, starttime = [13, 50, 45], endtime = [14, 45, 20]. The result should be, timediff = [0,54,35]

If, starttime = [13, 50, 45], endtime = [15, 00, 20]. The result should be, timediff = [1,9,35]

2. Write a program in Python to perform the following:

*** Accept a list or accept numbers and form into list or initialize list with few elements and name it as mylist. Accept a number from user say,
power.**

*** Pass this mylist and power to function called elements_power(). If the power is within the range of 1 to 5 it is ok, otherwise take it as 5. Assess each element of list and raise its element to the power. Return nothing from function.**

*** Print the list in main program.**

Ex: Just a sample code to be generic,

If mylist is [1, 2, 3, 4, 5] and power is 3 then mylist would be printed in main as [1, 8, 27, 64, 125]

3. Write a program in Python to perform product of complex numbers. Accept input as follows:

*** Accept first list from user, say list1**

*** Accept second list from user, say list2**

*** Both the lists (list1 and list2) to contain equal number of elements. Otherwise, throw an error and stop processing.**

*** Pass these lists to function (say complex_numbers_mult(list1, list2). The function need to perform multiplication and return result.**

*** Main program to print the result along with complex numbers with multiplication symbols as in input/output section.**

Input/Output:

Sample 1:

Enter List 1:[1, 2, 3, 4, 5]

Enter List 2:[1, 2, 3, 4, 5]

Complex numbers multiplication of (1+1j)*(2+2j)*(3+3j)*(4+4j)*(5+5j) is (-480-480j)

Sample 2:

Enter List 1:[1, 2, 3, 4, 5]

Enter List 2:[0, 0, 0, 0, 0]

Complex numbers multiplication of (1+0j)*(2+0j)*(3+0j)*(4+0j)*(5+0j) is (120+0j)

Explanation:

1) We are to multiply the 5 complex numbers and so (1+0i)*(2+0i)*(3+0i)*(4+0i)*(5+0i) we can see that answer is 120 + 0i.

2) Similarly for 2nd Testcase (1+1i)*(2+2i)*(3+3i)*(4+4i)*(5+5i) = -480 -480i

4. Write a program in Python to build the smallest number from user entered string.

Given a number N and string S of digits denoting a positive integer [N < sizeof(S)], build the lowest number possible by removing N digits from S, without changing their order.

Implement the functionality in function by accepting string and number and
return the smallest formed number.

NOTE: N should be less than length of (S).

Input

Enter Number of Digits: 4

Enter String: "1234567"

Output

The smallest number from "1234567" is 123

Input

Enter Number of Digits: 3

Enter String: "3435335"

Output

The smallest number from "3435335" is 3333

Input

Enter Number of Digits: 2

Enter String: "1034"

Output

The smallest number from "1034" is 03 (or 3)