



Rollwala Computer Center

Introduction to Python Programing

Assignment 2

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Roll No : 21

Course : Master of Computer Application

Semester : 1st



30 Dec, 2021



1. Write a Python program to calculate the length of a string.

'''

1. Write a Python program to calculate the length of a string.

Name : Mer Sagar Roll No.: 21

Class : MCA sem-1 Year : 2021-22

'''

```
str = input("Enter a string: ")
```

```
# counter variable to count the character in a string
```

```
counter = 0
```

```
for s in str:
```

```
    counter = counter+1
```

```
print("Length of the input string is:", counter)
```

```
# using function : len(str)
```

```
print("Using Function Length of the input string is : ", len(str))
```

Output:

Enter a string: sagar

Length of the input string is: 5

Using Function Length of the input string is : 5

2. Write a Python program to get a string made of the first 2 and the last 2 chars from a given a string.

'''

Write Write a Python program to get a string made of the first 2 and the last 2 chars from a given a string.

Ex Input : beautiful Expected Output : beul

Name : Mer Sagar Roll No.: 21

Class : MCA sem-1 Year : 2021-22

'''

```
value = input("Enter a string: ")
```

```
if len(value) < 2 :
```

```
    print("Value is too sort...")
```

```
else:
```

```
    print(value[0:2]+value[-2:])
```

Output:

Enter a string: Mer sagar

Mear

3. Write a Python program to get a string from a given string

where all occurrences of its first char have been changed to '\$',
except the first char itself.

```
'''
```

Write a Python program to get a string from a given string
where all occurrences of its first char have been changed to '\$',
except the first char itself.

Ex Input : abracadabra Expected Output : abr\$c\$d\$br\$

```
Name : Mer Sagar      Roll No.: 21
Class : MCA sem-1     Year  : 2021-22
'''
```

```
str1 = input("Enter a string: ")
```

```
char = str1[0]
str1 = str1.replace(char, '$')
```

```
str1 = char + str1[1:]
print(str1)
```

Output:

Enter a string: abracbajbjda

abr\$cb\$bjd\$

4. Write a Python program to get a single string from two given strings, separated by a space and swap the first two characters of each string.

''' Write a Python program to get a single string from two given strings, separated by a space and swap the first two characters of each string.

Ex Input : st1=hello st2=world
Expected Output : st3=wollo herld

Name : Mer Sagar Roll No.: 21
Class : MCA sem-1 Year : 2021-22
'''

```
inpt_str = input("Enter a string: ")
```

```
x = inpt_str.split()    #split by " "
```

```
st1=x[0]      #type conversion list to string
st2=x[1]
```

```
new1=st1.replace(st1[:2], st2[:2]) #replace(old, new)
```

```
new2=st2.replace(st2[:2], st1[:2])
```

```
print(new1)
print(new2)
```

Output:

Enter a string: hello world

wollo

herld

5. Write a Python program to add 'ing' at the end of a given string (length should be at least 3). If the given string already ends with 'ing' then add 'ly' instead. If the string length of the given string is

less than 3, leave it unchanged.

'''

Ex Input : test Expected Output : testing
 If Input : testing Expected Output: testingly

Name : Mer Sagar Roll No.: 21
 Class : MCA sem-1 Year : 2021-22
 '''

```
inpt_str = input("Enter a string: ")
```

```
if (len(inpt_str)>3):
```

```
    if (inpt_str[-3:]=="ing"):
        print(inpt_str + "ly")
```

```
    else:
        print(inpt_str + "ing")
```

```
else:
    print("please enter at least 3 chracter string")
```

Output:

Enter a string: test

testing

6. Write a Python program to remove the nth index character from a nonempty string.

'''

Write a Python program to remove the nth index character from a nonempty string.

Name : Mer Sagar Roll No.: 21
 Class : MCA sem-1 Year : 2021-22
 '''

```
inpt_str = input("Enter a string: ")

ind= int(input("Enter Index : "))

new_str=""

if (len(inpt_str)>0):

    for i in range(0, len(inpt_str)):
        if(i != ind):
            new_str =new_str + inpt_str[i]

    print(new_str)

else:
    print("Empty String")
```

Output:

Enter a string: Mer sagar

Enter Index : 5

Mer sgar

7. Write a Python program to remove the characters which have odd index values of a given string.

'''

Write a Python program to remove the characters which have odd index values of a given string.

Name : Mer Sagar Roll No.: 21
Class : MCA sem-1 Year : 2021-22

```
'''

inpt_str = input("Enter a string: ")

new_str=""

if (len(inpt_str)>0):

    for i in range(0, len(inpt_str)):
        if(i%2==1):
            new_str =new_str + inpt_str[i]

    print(new_str)

else:
    print("Empty String")
```

Output:

```
Enter a string: mersagar
esgr
```

8. Write a Python script that takes input from the user in proper cause and displays that input back in upper and lower cases.

```
'''

Write a Python script that takes input from the user in proper cause and
displays that input back in upper and lower cases.

Name : Mer Sagar      Roll No.: 21
Class : MCA sem-1     Year  : 2021-22
'''

inpt_str = input("Enter a string: ")

upper_case= inpt_str.upper()
lower_case= inpt_str.lower()
```

```
print(upper_case)
print(lower_case)
```

Output:

Enter a string: Mer Sagar

MER SAGAR

mer sagar

9. Write a Python program to get the second largest number from a list.

```
'''
```

Write a Python program to get the second largest number from a list.

```
Name : Mer Sagar      Roll No.: 21
Class : MCA sem-1     Year  : 2021-22
'''
```

```
lst = []
```

```
n = int(input("Enter number of elements : "))
```

```
# iterating till the range
```

```
for i in range(0, n):
```

```
    ele = int(input("Enter value : "))
```

```
    lst.append(ele) # adding the element
```

```
print(lst)
```

```
lst.sort() # lst.sort(reverse=True)
```

```
print("The second largest element of the list is:", lst[-2])
```

Output:

Enter number of elements : 5

Enter value : 10

Enter value : 30

Enter value : 40

Enter value : 50

Enter value : 20

[10, 30, 40, 50, 20]

The second largest element of the list is: 40

10. Write a program to remove all the duplicate elements from list.

'''

Write a program to remove all the duplicate elements from list.

Name : Mer Sagar Roll No.: 21
Class : MCA sem-1 Year : 2021-22

'''

lst = []

n = int(input("Enter number of elements : "))

for i in range(0, n):
 ele = int(input("Enter value : "))

lst.append(ele)

print("Original List : ",end=" ")
print(lst)

```
print("Remove duplicate from List : ",end=" ")
print(list(set(lst)))
```

Output:

Enter number of elements : 5

Enter value : 10

Enter value : 20

Enter value : 30

Enter value : 20

Enter value : 10

Original List : [10, 20, 30, 20, 10]

Remove duplicate from List : [10, 20, 30]

11. Write a Python program to find the list in a list of lists whose sum of elements is the highest.

'''

Write a Python program to find the list in a list of lists whose sum of elements is the highest.

Name : Mer Sagar Roll No.: 21
Class : MCA sem-1 Year : 2021-22

'''

```
num = [[1,2,3], [4,5,6], [10,11,12], [7,8,9]]
print(max(num, key=sum))
```

Output:

```
[10, 11, 12]
```

12. Write a Python program to concatenate following dictionaries to create a new one.

```
d1={1:100, 2:200}
```

```
d2={3:300, 4:400}
```

```
d3={5:500, 6:600}.
```

```
'''
```

Write a Python program to concatenate following dictionaries to create a new one.

```
d1={1:100, 2:200}
```

```
d2={3:300, 4:400}
```

```
d3={5:500, 6:600}
```

```
Name : Mer Sagar
```

```
Roll No.: 21
```

```
Class : MCA sem-1
```

```
Year : 2021-22
```

```
'''
```

```
d1={1:100, 2:200}
```

```
d2={3:300, 4:400}
```

```
d3={5:500, 6:600}
```

```
d4={}
```

```
for ele in (d1,d2,d3):
```

```
    d4.update(ele)
```

```
print(d4)
```

Output:

```
{1: 100, 2: 200, 3: 300, 4: 400, 5: 500, 6: 600}
```

13. Write a Python program to check if a given key already exists in a dictionary.

```
'''
Write a Python program to check if a given key already exists in a
dictionary.
```

```
Name : Mer Sagar      Roll No.: 21
Class : MCA sem-1     Year  : 2021-22
'''
```

```
dict = {'a': 100, 'b':200, 'c':300}
```

```
inpt_key= input("Enter Key : ")
```

```
if inpt_key in dict:
    print("Present, ", end = " ")
    print("value =", dict[inpt_key])
else:
    print("Not present")
```

Output:

```
Enter Key : a
```

```
Present, value = 100
```

14. Write a Python program to remove duplicate values from Dictionary.

```
''' Write a Python program to remove duplicate values from Dictionary.
```

```
Name : Mer Sagar      Roll No.: 21
Class : MCA sem-1     Year  : 2021-22
'''
```

```
# initializing dictionary
```

```
test_dict = { 'first' : 10, 'second' : 15, 'thired' : 20, 'fourth' : 10, 'fifth' : 20}
```

```
# printing original dictionary
```

```
print("The original dictionary is : \n" + str(test_dict))
```

```
# Remove duplicate values in dictionary
```

```
# Using loop
```

```
temp = []
```

```
res = dict()
```

```
for key, val in test_dict.items():      #get key and values as tuple in list
```

```
    if val not in temp:
```

```
        temp.append(val)
```

```
        res[key] = val
```

```
# printing result
```

```
print("The dictionary after values removal : \n" + str(res))
```

Output:

The original dictionary is :

```
{'first': 10, 'second': 15, 'thired': 20, 'fourth': 10, 'fifth': 20}
```

The dictionary after values removal :

```
{'first': 10, 'second': 15, 'thired': 20}
```

15. Write a Python script to print a dictionary where the keys are numbers between 1 and 15 (both included) and the values are square of keys.

```
'''
```

Write a Python script to print a dictionary where the keys are numbers between 1 and 15 (both included) and the values are square of keys.

```
Name : Mer Sagar      Roll No.: 21
Class : MCA sem-1     Year : 2021-22
```

```
'''
```

```
d=dict()
```

```
for x in range(1,16):
```

```
    d[x]=x**2      # **for power
```

```
print(d)
```

Output:

```
{1: 1, 2: 4, 3: 9, 4: 16, 5: 25, 6: 36, 7: 49, 8: 64, 9: 81, 10: 100, 11: 121, 12: 144, 13: 169, 14: 196, 15: 225}
```

16. Write a program to determine frequency of number in a list of numbers.

```
'''
```

Write a program to determine frequency of number in a list of numbers.

```
Name : Mer Sagar      Roll No.: 21
Class : MCA sem-1     Year  : 2021-22
'''
```

```
lst=[5,10,15,20,25,30,15,10,10,5,20,30,30,30]
```

```
n=int(input("Enter the number : "))
```

```
print("The frequency of number ",n," is ",lst.count(n))
```

Output:

Enter the number : 20

The frequency of number 20 is 2

17. Write a Python program to find all prime numbers between given range using functions.

```
'''
```

Write a Python program to find all prime numbers between given range using functions.

```
Name : Mer Sagar      Roll No.: 21
Class : MCA sem-1     Year  : 2021-22
'''
```

```
def prime_num(start, end):  
  
    for num in range(start, end + 1):  
        # all prime numbers are greater than 1  
        if num > 1:  
            for i in range(2, num):  
                if (num % i) == 0:  
                    break  
            else:  
                print(num)  
  
start=int(input("Range Start From : "))  
end=int(input("Range End : "))  
  
print("Prime numbers between", start, "and", end, "are:")  
c=prime_num(start,end)
```

Output:

Range Start From : 20

Range End : 50

Prime numbers between 20 and 50 are:

23

29

31

37

41

43

47

18. Write a Python program to print all Armstrong numbers between given range using functions.'

Write a Python script that takes input from the user in proper cause and displays that input back in upper and lower cases.

Name : Mer Sagar Roll No.: 21
 Class : MCA sem-1 Year : 2021-22
 '''

```
def armstrong_num(start, end):

    for num in range(start, end + 1):

        # order of number
        order = len(str(num)) # number convert to string and
                               # find lenth of string

        # initialize sum
        sum = 0
        temp = num

        while temp > 0:
            digit = temp % 10
            sum += digit ** order
            temp //= 10

        if num == sum:
            print(num)

start=int(input("Range Start From : "))
end=int(input("Range End : "))

print("armstrong numbers between", start, "and", end, "are:")
armstrong_num(start,end)
```

Output:

Range Start From : 10

Range End : 1000

armstrong numbers between 10 and 1000 are:

153

370

371

407

9. Write a Python program to print all perfect numbers between given range using functions.

[perfect number is a positive integer that is equal to the sum of its positive divisor, excluding the number itself example 6 $3+2+1=6$].

'''

Write a Python program to print all perfect numbers between given range using functions.

Name : Mer Sagar Roll No.: 21
Class : MCA sem-1 Year : 2021-22
'''

```
def is_perfect_num(num):
```

```
    if num<1:
        return False
```

```
    sum=0
```

```
    for x in range(1,num):
```

```
        if num % x==0:           #if divisible by x then store in sum
            sum =sum + x
```

```
    return sum==num
```

```

start=int(input("Range Start From : "))
end=int(input("Range End : "))

print("Perfect numbers between %d and %d" %(start, end))

for i in range(start,end+1):

    if is_perfect_num(i):    #function call in if

        print(i, end=' ')

```

Output:

Range Start From : 10

Range End : 1000

Perfect numbers between 10 and 1000

28 496

20. Write a Python program to generate nth Fibonacci term using function.

```
'''
```

Write a Python program to generate nth Fibonacci term using function.

```

Name : Mer Sagar      Roll No.: 21
Class : MCA sem-1     Year  : 2021-22
'''

```

```

def recur_fibo(n):
    if n <= 1:
        return n
    else:
        return(recur_fibo(n-1) + recur_fibo(n-2))

```

```

nterms = int(input("Enter Number of Term you want to find : "))

lst = []

# check if the number of terms is valid

if nterms <= 0:
    print("Please enter a positive integer")
else:
    print("Fibonacci sequence:")
    for i in range(nterms):
        c=lst.append(recur_fibo(i))

print(lst)          # series

print(lst[nterms-1]) # n th term

```

Output:

Enter Number of Term you want to find : 5

Fibonacci sequence:

[0, 1, 1, 2, 3]

3

21. Write a python program to find twin prime numbers up to a range.

[ex 3,5 5,7 11,13 17,19 41,43] all are twin prime their number difference is 1]

'''

Write a python program to find twin prime numbers up to a range.
[ex 3,5 5,7 11,13 17,19 41,43] all are twin prime their number difference is 1]

Name : Mer Sagar Roll No.: 21
Class : MCA sem-1 Year : 2021-22

'''

```
def is_prime(num):  
    if num<2:  
        return False  
  
    for i in range(2,num):  
        if num % i==0:  
            return False  
    return True  
  
start=int(input("Start Range from : "))  
end= int(input("End Range : "))  
  
for i in range(start,end+1):  
  
    if(is_prime(i) and is_prime(i+2)):  
        print("%d,%d"%(i,i+2))
```

Output:

Start Range from : 10

End Range : 100

11,13

17,19

29,31

41,43

59,61

71,73

22. Write a Python program to sort a list of tuples using Lambda.

Original list of tuple:-

[('English',88),('Science',90),('Maths',97),('Socialsciences',82)]

Resultant tuple:-

[('Social sciences', 82), ('English', 88), ('Science', 90), ('Maths', 97)]

```
'''
Write a Python program to sort a list of tuples using Lambda.
Original list of tuple:-
[('English',88),('Science',90),('Maths',97),('Socialsciences',82)]
Resultant tuple:-
[('Social sciences', 82), ('English', 88), ('Science', 90), ('Maths', 97)]
'''
```

```
Name : Mer Sagar      Roll No.: 21
Class : MCA sem-1     Year  : 2021-22
'''
```

```
subject_marks = [('English', 88), ('Science', 90), ('Maths', 97), ('Social
sciences', 82)]
print("Original list of tuples:")
print(subject_marks)

subject_marks.sort(key = lambda x: x[1])

print("\nSorting the List of Tuples:")
print(subject_marks)
```

Output:

Original list of tuples:

[('English', 88), ('Science', 90), ('Maths', 97), ('Social sciences', 82)]

Sorting the List of Tuples:

[('Social sciences', 82), ('English', 88), ('Science', 90), ('Maths', 97)]

23. Write a Python program to filter a list of integers using Lambda

Original list of numbers:-

[1 , 2 , 3 , 4 , 5 , 6 , 7 , 8 , 9 , 10]

Result:-

Even number list:-

[2 , 4 , 6 , 8 , 10]

Odd number List:-

[1 , 3 , 5 , 7 , 9]

```
'''
Write a Python program to filter a list of integers using Lambda
Original list of numbers:-
[1 , 2 , 3 , 4 , 5 , 6 , 7 , 8 , 9 , 10]
```

```
Name : Mer Sagar      Roll No.: 21
Class : MCA sem-1     Year  : 2021-22
'''
```

```
nums = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
print("Original list of integers:")
print(nums)

print("\nEven numbers from list:")
even_nums = list(filter(lambda x: x%2 == 0, nums))
print(even_nums)

print("\nOdd numbers from list:")
odd_nums = list(filter(lambda x: x%2 != 0, nums))
print(odd_nums)
```

Output:

Original list of integers:

[1, 2, 3, 4, 5, 6, 7, 8, 9, 10]

Even numbers from list:

[2, 4, 6, 8, 10]

Odd numbers from list:

[1, 3, 5, 7, 9]