PYTHON ASSIGNMENT-2

Roll No: 40   **Name: Akshit Trivedi**

Class: MCA-1   **Year: 2021-22**

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

INPUT:

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

 Name  : Akshit Trivedi          Roll No.: 40
 Class : MCA sem-1               Year    : 2021-22     Practical
Assignment-2
"""

str=input("Enter the String: ")

print("Entered String is: {0} and its length is:
{1}".format(str,len(str)))
#print("The length is : ",len(str))
```

OUTPUT:

```
Enter the String: Akshit
Entered String is: Akshit and its length is: 6
```

2 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

INPUT:

```
"""
2). 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  : Akshit Trivedi          Roll No.: 40
 Class : MCA sem-1               Year    : 2021-22     Practical
Assignment-2
"""
str=input("Enter the String: ")
print("Your Entered String is: ",str)
str=str[0:2]+str[-2:]
print("Output with First 2 & Last 2 Chars is: ",str)
```

OUTPUT:
```
Enter the String: beautiful
Your Entered String is:  beautiful
Output with First 2 & Last 2 Chars is:  beul
```

3 **Write a Python program to get a string from a given string where all occurrences of its first char have been changed to '$', except the first char itself.**
Ex Input : abracadabra   Expected Output : abr$c$dbr

INPUT:
```
"""
3). Write a Python program to get a string from a given string where all
occurrences of its first char have been changed to '$', except the first
char
itself.
Ex Input : abracadabra Expected Output : abr$c$d$br$

 Name  : Akshit Trivedi           Roll No.: 40
 Class : MCA sem-1                 Year    : 2021-22     Practical
Assignment-2
"""

str=input("Enter the String: ")
char=str[0]
str=str.replace(char, '$')
str=char+str[1:]
print("String with $: "+str)
```

OUTPUT:
```
Enter the String: abracadabra
String with $: abr$c$d$br$
```

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.**
INPUT:
```
"""
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.
Ex Input : st1=hello st2=world
Expected Output : st3=wollo herld
```

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Roll No: 40   **Name: Akshit Trivedi**

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```
 Name  : Akshit Trivedi          Roll No.: 40
 Class : MCA sem-1               Year    : 2021-22     Practical
Assignment-2
"""

single_str=input("Enter a String: ")
x=single_str.split()
st1=x[0]
st2=x[1]

print("String1 is: "+st1)
print("String2 is: "+st2)
temp=st1[0:2]
st1=st1.replace(st1[:2],st2[:2])
st2=st2.replace(st2[:2],temp)

st3=st1+ " " +st2
print("Combined String: "+st3)
```

OUTPUT:

```
Enter a String: hello world
String1 is: hello
String2 is: world
Combined String: 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

INPUT:

```
"""

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  : Akshit Trivedi         Roll No.: 40
Class : MCA sem-1              Year    : 2021-22     Practical
Assignment-2
"""
str=input("Enter the String: ")
if len(str)<=3:
    print("Your String: "+str)
elif (str[-3:]=='ing'):
    print("Your String: "+str+'ly')
else:
    print("Your String: "+str+'ing')
```

OUTPUT:
```
Enter the String: test
Your String: testing

Enter the String: testing
Your String: testingly
```

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

INPUT:
```
"""
6). Write a Python program to remove the nth index character from a
nonempty string.

Name  : Akshit Trivedi         Roll No.: 40
Class : MCA sem-1              Year    : 2021-22     Practical
Assignment-2
"""
str=input("Enter the String: ")
print("Your Entered String: "+str)
n=int(input("Enter Index: "))
first=str[0:n]
last=str[n+1:]
str=first+last
print("\nString after removing {0}th Index is: {1}".format(n,str))
```

OUTPUT:
```
Enter the String: akshit
Your Entered String: akshit

Enter Index: 3

String after removing 3th Index is: aksit
```

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

INPUT:
```
"""
7). Write a Python program to remove the characters which have odd index
values of a given string.

Name  : Akshit Trivedi          Roll No.: 40
Class : MCA sem-1               Year    : 2021-22      Practical
Assignment-2
"""

str=input("Enter the String: ")
print("Your Entered String: "+str)
odd=str[1::+2]
print("String with odd Index: "+odd)
```

OUTPUT:
```
Enter the String: akshit
Your Entered String: akshit
String with odd Index: kht
```

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

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

PYTHON ASSIGNMENT-2

Roll No: 40   **Name: Akshit Trivedi**
Class: MCA-1   **Year: 2021-22**

```
Name  : Akshit Trivedi          Roll No.: 40
Class : MCA sem-1               Year    : 2021-22     Practical
Assignment-2
"""

str=input("Enter the String: ")
print("Displaying String in Lower Case: {0}".format(str.lower()))
print("Displaying String in Upper Case: {0}".format(str.upper()))
```

OUTPUT:

```
Enter the String: Akshit
Displaying String in Lower Case: akshit
Displaying String in Upper Case: AKSHIT
```

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

INPUT:

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

Name  : Akshit Trivedi          Roll No.: 40
Class : MCA sem-1               Year    : 2021-22     Practical
Assignment-2
"""
lst=[]
n=int(input("How many elements you want to Enter: "))

for i in range(0,n):
    ele=int(input("Enter the Element {0}: ".format(i+1)))
    lst.append(ele)
print("\nEntered List is: ",lst)
lst.sort()
print("\nSorted List is: ",lst)
print("\n2nd Largest Number is: ",lst[-2])
```

OUTPUT:

```
How many elements you want to Enter: 5

Enter the Element 1: 8
```

```
Enter the Element 2: 66

Enter the Element 3: 4

Enter the Element 4: 22

Enter the Element 5: 1

Entered List is:  [8, 66, 4, 22, 1]

Sorted List is:  [1, 4, 8, 22, 66]

2nd Largest Number is:  22
```

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

INPUT:

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

Name  : Akshit Trivedi          Roll No.: 40
Class : MCA sem-1               Year    : 2021-22     Practical
Assignment-2
"""
lst=[]
n=int(input("How many elements you want to Enter: "))

for i in range(0,n):
    ele=int(input("Enter the Element {0}: ".format(i+1)))
    lst.append(ele)
lst.sort()
print("\nEntered List is: ",lst)
list1=list(set(lst))
list1.sort()
print("\nThe List after removing all the duplicates: ",list1)
```

OUTPUT:

```
How many elements you want to Enter: 5

Enter the Element 1: 1
```

```
Enter the Element 2: 2

Enter the Element 3: 1

Enter the Element 4: 3

Enter the Element 5: 5

Entered List is:  [1, 1, 2, 3, 5]

The List after removing all the duplicates:  [1, 2, 3, 5]
```

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

INPUT:
```
"""
11). Write a Python program to find the list in a list of lists whose sum
of elements is the highest.

Name  : Akshit Trivedi          Roll No.: 40
Class : MCA sem-1               Year    : 2021-22     Practical
Assignment-2
"""
lst = [[10,20,30], [41,51,61], [50,60,70], [100,80,90]]
print("\nList is: ",lst)
print("\n\nList with Highest Sum of Elements is: ",max(lst, key=sum))
```

OUTPUT:
```
List is:  [[10, 20, 30], [41, 51, 61], [50, 60, 70], [100, 80, 90]]

List with Highest Sum of Elements is:  [100, 80, 90]
```

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}

INPUT:
```
"""
 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}

Name  : Akshit Trivedi        Roll No.: 40
Class : MCA sem-1             Year    : 2021-22      Practical
Assignment-2
"""
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("New Dictionary is: ",d4)
```

OUTPUT:

New Dictionary is: {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.

INPUT:
```
"""
 13. Write a Python program to check if a given key already exists in a
     dictionary.

Name  : Akshit Trivedi        Roll No.: 40
Class : MCA sem-1             Year    : 2021-22      Practical
Assignment-2
"""
dict = {'akshit': 1, 'python':2, 'java':3}

enter_key= input("Enter Key : ")


if enter_key in dict:
    print("The Key is Present and the Value is:",dict[enter_key])
else:
```

```
    print("The Key is not Present")
```

OUTPUT:

Enter Key : akshit
The Key is Present and the Value is: 1

Enter Key : akki
The Key is not Present

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

INPUT:
```
"""
 14. Write a Python program to remove duplicate values from Dictionary.

Name  : Akshit Trivedi          Roll No.: 40
Class : MCA sem-1               Year    : 2021-22     Practical
Assignment-2
"""
my_dict = { 'a' : 10, 'b' : 15, 'c' : 20, 'd' : 10, 'e' : 20}

print("The Original Dictionary is : \n" + str(my_dict))

temp = []
new_dict={}    #new_dict = dict()
for key, val in my_dict.items():
    if val not in temp:
        temp.append(val)
        new_dict[key] = val

print("The dictionary after removing duplicate values : \n" +
str(new_dict))
```

OUTPUT:
The Original Dictionary is :
{'a': 10, 'b': 15, 'c': 20, 'd': 10, 'e': 20}
The dictionary after removing duplicate values :
{'a': 10, 'b': 15, 'c': 20}

PYTHON ASSIGNMENT-2

Roll No: 40   **Name: Akshit Trivedi**
Class: MCA-1   **Year: 2021-22**

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.

INPUT:
```
"""
 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.

Name  : Akshit Trivedi          Roll No.: 40
Class : MCA sem-1               Year    : 2021-22     Practical
Assignment-2
"""
square_dict=dict()
for x in range(1,16):
    square_dict[x]=x**2        #    **for power
print("\nSquare Dictionary is:\n",square_dict)
```

OUTPUT:
Square Dictionary is:
 {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.

INPUT:
```
"""
 16. Write a program to determine frequency of number in a list of
numbers.

Name  : Akshit Trivedi          Roll No.: 40
Class : MCA sem-1               Year    : 2021-22     Practical
Assignment-2
"""
lst=[1,2,3,4,1,2,1,4,3,6,5,7,8,9,5,2,3,6,9,7,8,2,3,1,4,5,6,8]
print("\nList is:\n"+str(lst))
num=int(input("Enter the number : "))
print("The frequency of number ",num," is ",lst.count(num))
```

PYTHON ASSIGNMENT-2

Roll No: 40   **Name: Akshit Trivedi**

Class: MCA-1   **Year: 2021-22**

OUTPUT:

List is:
[1, 2, 3, 4, 1, 2, 1, 4, 3, 6, 5, 7, 8, 9, 5, 2, 3, 6, 9, 7, 8, 2, 3, 1, 4, 5, 6, 8]

Enter the number : 9
The frequency of number 9 is 2

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

INPUT:
```
"""
 17. Write a program to determine frequency of number in a list of
numbers.

Name  : Akshit Trivedi          Roll No.: 40
Class : MCA sem-1               Year    : 2021-22      Practical
Assignment-2
"""
def prime_interval(start, end):

    for num in range(start, end + 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:")
prime_interval(start,end)
```

OUTPUT:

Range Start From : 1

Range End : 10
Prime numbers between 1 and 10 are:
2

3
5
7

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

INPUT:

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

Name  : Akshit Trivedi        Roll No.: 40
Class : MCA sem-1             Year    : 2021-22     Practical
Assignment-2
"""
def armstrong_num(start, end):
    for num in range(start, end + 1):

        order = len(str(num))
        sum = 0
        temp = num

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

        if num == sum:
            print(num)


start=int(input("Enter Starting Range : "))
end=int(input("Enter Ending Range : "))

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

OUTPUT:

Enter Starting Range : 100

Enter Ending Range : 1000

Armstrong numbers between 100 and 1000 are:

PYTHON ASSIGNMENT-2

Roll No: 40   **Name: Akshit Trivedi**
Class: MCA-1   **Year: 2021-22**

153
370
371
407

19. 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]

INPUT:

```python
"""
 19. 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]

Name  : Akshit Trivedi          Roll No.: 40
Class : MCA sem-1               Year    : 2021-22     Practical
Assignment-2
"""

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

def perfectnum():
    for num in range(start,end+1):
        sum=0

        for x in range(1,num):
            if num % x==0:               #if divisible by x then store in
sum
                sum =sum + x

        if (sum==num):
            print(num, end=' ')

print("Perfect numbers between %d and %d are:" %(start, end))
perfectnum()
```

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Roll No: 40   **Name: Akshit Trivedi**

Class: MCA-1   **Year: 2021-22**

OUTPUT:

Range Start From : 1

Range End : 100
Perfect numbers between 1 and 100 are:
6 28

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

INPUT:

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

Name  : Akshit Trivedi          Roll No.: 40
Class : MCA sem-1               Year    : 2021-22    Practical
Assignment-2
"""
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 Fibonnaci : "))

if nterms <= 0:
    print("Plese enter a positive integer")
else:
    print("Fibonacci Series:")
    for i in range(nterms):
        print(recur_fibo(i),end=" ")
```

OUTPUT:

Enter Number of Fibonnaci : 5
Fibonacci Series:
0 1 1 2 3

PYTHON ASSIGNMENT-2

Roll No: 40   **Name: Akshit Trivedi**

Class: MCA-1   **Year: 2021-22**

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

INPUT:

```
"""
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

Name  : Akshit Trivedi          Roll No.: 40
Class : MCA sem-1               Year    : 2021-22     Practical
Assignment-2
"""
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 : 1

End Range : 100
3,5
5,7
11,13
17,19
29,31
41,43

PYTHON ASSIGNMENT-2

Roll No: 40   **Name: Akshit Trivedi**
Class: MCA-1   **Year: 2021-22**

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

INPUT:
```
"""
 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)]

Name  : Akshit Trivedi          Roll No.: 40
Class : MCA sem-1               Year   : 2021-22      Practical
Assignment-2
"""
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)]

PYTHON ASSIGNMENT-2

Roll No: 40   **Name: Akshit Trivedi**

Class: MCA-1   **Year: 2021-22**

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]

INPUT:

```
"""
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]

Name  : Akshit Trivedi        Roll No.: 40
Class : MCA sem-1             Year    : 2021-22     Practical
Assignment-2
"""
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]