

ASSIGNMENT

ON

Python programs

Submitted to

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Q1. Program to find the factorial of a number

```
>>> num = int(input("Enter a number: "))
Enter a number: 7
>>> factorial = 1
>>> if num < 0:
    print("factorial does not exist for negative numbers")
elif num == 0:
    print("The factorial of 0 is 1")
else:
    for i in range(1, num + 1):
        factorial = factorial*i
|

>>> print("The factorial of", num, "is", factorial)
The factorial of 7 is 5040
>>>
```

Q2. Generate Fibonacci series of N terms

```
>>> n = int(input("Enter the value of 'n': "))
Enter the value of 'n': 30
>>> n = int(input("Enter the value of 'n': "))
Enter the value of 'n': 5
>>> a=0
>>> b=1
>>> sum=0
>>> count=1
>>> print("Fibonacci Series: ", end = " ")
Fibonacci Series:
>>> while(count <= n):
    print(sum, end = " ")
    count += 1
    a = b
    b = sum
    sum = a + b

0 1 1 2 3
```

Q3. Find the sum of all items in a list

```
>>> sum=0
>>> li=[12,34,5,4,21]
>>> for val in range(0,len(li)):
    sum=sum+li[val]

>>> print("sum of all values in a given list:", sum)
sum of all values in a given list: 76
>>> |
```

Q4. Generate a list of four digit numbers in a given range with all their digits even and the number is a perfect square.

```
>>> def gen():
    n=0
    for k in range(1000,10000):
        num=str(k)
        values=int(k)
        number1=int(num[0])
        number2=int(num[1])
        number3=int(num[2])
        number4=int(num[3])
        if number1%2==0:
            if number2%2==0:
                if number3%2==0:
                    if number4%2==0:
                        for i in range(2,values):
                            if i*i==values:
                                print(values)

>>> gen()
4624
6084
6400
8464
>>> |
```

Q5. Display the given pyramid with step number accepted from user.

Eg: N=4

```
1
2 4
3 6 9
4 8 12 16
```

```
>>> def num():
    n=int(input("Enter the number : "))
    i=1
    for i in range(1,n+1):
        j=1
        for j in range(1,i+1):
            temp=i*j;
            print(temp,end=" ")
        print("")
```

```
>>> num()
Enter the number : 4
1
2 4
3 6 9
4 8 12 16
>>>
```

Q6.Count the number of characters (character frequency) in a string.

```
>>> def char_frq(str1):
    dict = {}
    for n in str1:
        keys = dict.keys()
        if n in keys:
            dict[n] += 1
        else:
            dict[n] = 1
    return dict

>>> print(char_frq('pathanamthitta'))
{'p': 1, 'a': 4, 't': 4, 'h': 2, 'n': 1, 'm': 1, 'i': 1}
>>> |
```

Q7. Add 'ing' at the end of a given string. If it already ends with 'ing', then add 'ly'

```
'''
>>> def add_string(str1):
    length = len(str1)
    if length > 2:
        if str1[-3:] == 'ing':
            str1 += 'ly'
        else:
            str1 += 'ing'
    return str1

>>> print(add_string('play'))
playing
>>> print(add_string('playing'))
playingly
>>>
```

Q8. Accept a list of words and return length of longest word.

```
>>> def longest_word(words_li):
    word_len = []
    for n in words_li:
        word_len.append((len(n), n))
    word_len.sort()
    return word_len[-1][0], word_len[-1][1]

>>> result =longest_word(["rose", "jasmine", "lotus"])
>>> print("Longest word: ",result[1])
Longest word:  jasmine
>>> print("Length of the longest word: ",result[0])
Length of the longest word:  7
>>> |
```

Q9. Construct following pattern using nested loop

```
*  
  
* *  
  
* * *  
  
* * * *  
  
* * * * *  
  
* * * *  
  
* * *  
  
* *  
  
*
```

```
n=5;  
for i in range(n):  
    for j in range(i):  
        print ('* ', end="")  
    print ('')  
  
for i in range(n,0,-1):  
    for j in range(i):  
        print ('* ', end="")  
    print ('')
```

```
= RESTART: C:\Users\Lenov  
.PY
```

```
*  
* *  
* * *  
* * * *  
* * * * *  
* * * * *  
* * * *  
* * *  
* *  
*  
>>> |
```

Q10. Generate all factors of a number

```

>>> n=int(input("enter n"))
enter n 4
>>> factors=[1]
>>> for i in range(2,n):
        if(n%i==0):
            factors.append(i)
            factors.append(n)

>>> print(factors)
[1, 2, 4]
>>>

```

Q11. Write lambda functions to find area of square, rectangle and triangle.

```

>>> s=int(input("enter the sides : "))
enter the sides : 4
>>> x=lambda a:a*a
>>> print(x(s))
16
>>> l=int(input("enter length : "))
enter length : 6
>>> b=int(input("enter breadth : "))
enter breadth : 3
>>>
>>> y=lambda l,b:l*b
>>> print(y(l,b))
18
>>> h=int(input("enter height of triangle : "))
enter height of triangle : 7
>>> bl=int(input("enter base of triangle : "))
enter base of triangle : 2
>>> z=lambda h,bl:(l*bl)/2
>>> print(z(h,bl))
6.0

```

Q12. From a list of integers, create a list removing even numbers.

```

>>> num = [5,7,20,11,18,25,4]
>>> num = [x for x in num if x%2!=0]
>>> print(num)
[5, 7, 11, 25]
>>> |

```
