

NAME: swetha.k  
ROLL NAME:235229143

1. Print the sum of current and previous number

```
In [1]: num=0
for i in range(1, 11):
    sum=num+i
    print(sum)
    num=i
```

1  
3  
5  
7  
9  
11  
13  
15  
17  
19

2. Write a program to accept characters till the user enters null and count number of times an alphabet (b, where b can be any alphabet) is entered

```
In [2]: var=list()
while True:
    value=input("enter the character:")
    if value=="":
        break
    else:
        var.append(value)
n=list(set(var))
print(n)
for i in n:
    print("count of {} is {}".format(i, var.count(i)))
```

enter the character:s  
enter the character:w  
enter the character:e  
enter the character:k  
enter the character:.  
enter the character:  
['e', '.', 's', 'w', 'k']  
count of e is 1  
count of . is 1  
count of s is 1  
count of w is 1  
count of k is 1

3. Use a loop to display elements from given list present at odd index positions

```
In [3]: list=[5,10,15,20,25,30]
        for i in range(1,len(list),2):
            print(list[i])
```

```
10
20
30
```

4. Write a program to calculate square and cube of all numbers from 1 to a given number

```
In [4]: m=int(input("enter the value for m:"))
        for num in range(1,m):
            square=num**2
            print("the square of the number is:",square)
            cube=num**3
            print("the cube of the number is:",cube)
```

```
enter the value for m:3
the square of the number is: 1
the cube of the number is: 1
the square of the number is: 4
the cube of the number is: 8
```

5. Write a program to display numbers divisible by both 3 and 9 from a list.

```
In [5]: print("the number divisible by 3 and 9 from the list is:")
        list=[2,3,5,7,9,25,27]
        for num in list:
            if num%3==0 and num%9==0:
                print(num)
```

```
the number divisible by 3 and 9 from the list is:
9
27
```

6. Implement a program that validates a password based on certain conditions. Prompt the user to enter a password and check if it meets the following requirements: at least 8 characters long, contains at least one uppercase letter, one lowercase letter, one digit, and one special character.

```
In [6]: length=lower=upper=digit=False
password=input("Enter the Password:")
if(len(password)>=8):
    length=True
    for char in password:
        if(letter.islower()):
            lower=True
        elif(letter.isupper()):
            upper=True
        elif(letter.isdigit()):
            digit=True
if length and lower and upper and digit:
    print("The password is valid ")
else:
    print("The password is Not valid" )
```

Enter the Password:swe  
The password is Not valid

7. Write a program that calculates the factorial of a given number. Prompt the user to enter a number and display its factorial.

```
In [7]: n=int(input("enter the number:"))
fact=1
if(n>=1):
    for i in range(1,n+1):
        fact=fact*i
print("factorial of the given number is:",fact)
```

enter the number:5  
factorial of the given number is: 120

8. Create a program that checks whether a given number is prime or not. Prompt the user to enter a number and display a message indicating whether the number is prime or not.

```
In [8]: a=int(input("enter the number:"))
n=0
for i in range(2,a//2+1):
    if(a%i==0):
        n=n+1
if(n<=0):
    print("the number is prime")
else:
    print("the number is not a prime")
```

enter the number:6  
the number is not a prime

9. Write a program that generates and prints the Fibonacci series up to a given number. The Fibonacci series is a sequence

of numbers where each number is the sum of the two preceding ones (starting from 0 and 1).

```
In [9]: n=int(input("enter the value of n:"))
a=0
b=1
sum=0
count=1
print("fibonacci series:",end=" ")
while(count<=n):
    print(sum,end=" ")
    count+=1
    a=b
    b=sum
    sum=a+b
```

enter the value of n:4  
fibonacci series: 0 1 1 2

10.Implement a program that converts temperatures from Celsius to Fahrenheit and vice versa. Prompt the user to enter a temperature and a unit (Celsius or Fahrenheit) and display the converted temperature.

```
In [12]: celsius1=float(input("Temperature value in degree Celsius:"))
Fahrenheit1= (celsius1*1.8)+32
print("The % 2f degree Celsius is equal to: %.2f Fahrenheit"%(celsius1, Fahrenheit1))
Fahrenheit2=float(input("Temperature value in degree Fahrenheit:"))
celsius2=(Fahrenheit2-32)/1.8
print("The %.2f degree Fahrenheit is equal to: %.2f Celcius"%(Fahrenheit2, celsius2))
```

Temperature value in degree Celsius:34  
The 34.000000 degree Celsius is equal to: 93.20 Fahrenheit  
Temperature value in degree Fahrenheit:65  
The 65.00 degree Fahrenheit is equal to: 18.33 Celcius

In [ ]: