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Python Programming - 2101CS405

Lab - 3

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for and while loop

01) WAP to print 1 to 10

In [ ]:
```
for i in range(1,11) :
    print(i)
```

02) WAP to print 1 to n

In [ ]:
```
n = int(input("Enter number"))
for i in range(1,n+1):
    print(i)
```

03) WAP to print odd numbers between 1 to n

In [ ]:
```
n = int(input("Enter number : "))
for i in range(1,n+1):
    if(i%2!=0):
        print(i)
```

04) WAP to print numbers between two given numbers which is divisible by 2 but not divisible by 3

In [ ]:
```
a = int(input("Enter starting number : "))
b = int(input("Enter Ending number : "))
for i in range(a,b+1):
    if(i%2==0 and i%3!=0):
        print(i)
```

05) WAP to print sum of 1 to n numbers

In [ ]:
```
n = int(input("Enter number : "))
sum = 0
for i in range(1,n+1):
    sum += i
print(sum)
```

06) WAP to print sum of series 1 + 4 + 9 + 16 + 25 + 36 + ...n

In [ ]:
```
n = int(input("Enter number : "))
sum = 0
for i in range(1,n+1):
    sum+=i*i
print(sum)
```

07) WAP to print sum of series 1 – 2 + 3 – 4 + 5 – 6 + 7 ... n

In [ ]:
```
n = int(input("Enter a number of terms : "))
sum = 0
for i in range(1, n+1):
 if(i%2 == 0):
     sum -= i
 else:
     sum += i

print(f"Sum of series 1 - 2 + 3 - 4 + 5 - 6 + 7 ... n = {sum}")
```

08) WAP to print multiplication table of given number.

In [ ]:
```
n=int(input("Enter number : "))
for i in range(1,11):
    print(f"{n} * {i} = {n*i}")
```

09) WAP to find factorial of the given number

In [ ]:
```
n = int(input("Enter number : "))
fect = 1
for i in range(1,n+1):
    fect = fect*i
print(fect)
```

10) WAP to find factors of the given number

In [ ]:
```
n = int(input("Enter number :  "))
for i in range(1,n+1):
    if(n%i==0):
        print(i)
```

11) WAP to find whether the given number is prime or not.

In [ ]:
```
n = int(input("Enter number : "))
count=0
for i in range(2,n+1):
    if(n%i==0):
        count+=1
if(count==1):
    print("prime")
else :
    print("not prime")
```

12) WAP to print sum of digits of given number

In [ ]:
```
n = int(input("Enter number : "))
sum = 0
digit = 0
while(n!=0):
    digit=n%10
    sum += digit
    n = n//10
print(sum)
```

13) WAP to check whether the given number is palindrome or not

In [ ]:
```
n = int(input("Enter number : "))
temp=n
rev=0
digit=0
while(n!=0):
    digit = n%10
    rev = (rev*10) + digit
    n=n//10
if(rev==temp):
    print(f"{temp} is palindrom")
else :
    print(f"{temp} is not palindrom")
```

01) WAP to check whether the given number is Armstrong or not.

In [ ]:
```
n = int(input("Enter a number : "))
temp = n
i = 0
while (temp != 0):
 i += 1
 temp //= 10
print(f"Number of digits = {i}")
```

02) WAP to find out prime numbers between given two numbers.

In [ ]:
```
def isPrime(n):
    flag=True

    for i in range(2,(n//2)+1):
        if(n%i==0):
            flag  = False
            break
    return flag
```

In [ ]:
```
a = int(input("Enter starting number :  "))
b = int(input("ENter ending number : "))
for i in range(a,b+1):
    if(isPrime(i)):
        print(f"{i}")
```

03) WAP to calculate x^y without using any function.

In [ ]:
```
x = int(input("Enter a number :  "))
y = int(input("Enter power of number :  "))
pow = 1
for i in range(1,y+1):
    pow=pow*x
print(f"{x}^{y} = {pow}")
```

04) WAP to check whether the given number is perfect or not.

[Sum of factors including 1 excluding number itself]

In [ ]:
```
n = int(input("ENter number :  "))
sum = 0
for i in range(1,(n//2)+1):
    if(n%i==0):
        sum+=i
if(sum==n):
    print("number is perfect")
else:
    print("Number is not perfect")
```

05) WAP to find the sum of 1 + (1+2) + (1+2+3) + (1+2+3+4)+...+ (1+2+3+4+....+n)

In [ ]:
```
def nsum(n):
    sum=0
    for i in range(1 , n+1):
        sum += i
    return sum
```

In [ ]:
```
n = int(input("ENter number of terms : "))
total = 0
for i in range(1,n+1):
    total+=nsum(i)
print(total)
```

06) WAP to print Multiplication Table up to n

In [ ]:
```
n = int(input("Enter number : "))
for i in range(1,11):
    print(f"{n} * {i} = {n*i}")
```

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Python Programming - 2101CS405

Lab - 4

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String

01) WAP to check given string is palindrome or not.

In [3]:
```
a=input("Enter any string :")
b=a[::-1]
if(a==b):
    print("Palindrome String")
else:
    print("Not a Palindrome")
```

```
Enter any string :aabbcbbaa
Palindrome String
```

02) WAP to reverse the words in given string.

In [1]:
```
a=input("Enter any string :")
b=a[::-1]
print(b)
```

```
Enter any string :vc
cv
```

In [ ]:

```
```

```
03) WAP to remove ith character from given string
```

In [2]:

```
a=input("Enter any string")
b=int(input("Enter index :"))
i=a[b]
c=a.replace(i,'')
print(c)
```

```
Enter any stringviral
Enter index :2
vial
```

In [ ]:

```
```

04) WAP to find length of String without using len function.

In [4]:

```
s=input("Enter string")
c=0
for i in s:
    c=c+1
print(c)
```

```
Enter stringabc
3
```

05) WAP to print even length word in string.

In [10]:

```
s=input("Enter string")
l=s.split(" ")
print(l)
for i in l:
    if len(i)%2==0:
        print(i)
```

```
Enter stringbbc aa cc
['bbc', 'aa', 'cc']
aa
cc
```

06) WAP to count numbers of vowels in given string.

In [18]:
```
s=input("Enter string")
c=0
for i in s:
    if(i=="a" or i=="e" or i=="i" or i=="o" or i=="u"):
        c=c+1
print(c)
```

```
Enter stringabcde
2
```

07) WAP to convert given array to string.

In [19]:
```
a=["a" ,"b" ,"c"]
s=""
for i in a:
    s=s+i
print(s)
```

```
abc
```

1. WAP to find out duplicate characters in given string.

In [21]:
```
s=input("Enter string")
for i in s:
    c=s.count(i)
    if(c>1):
        print(i)
```

```
Enter stringabcdb
b
b
```

02) WAP to capitalize the first and last character of each word in a string.

In [33]:
```
s=input("Enter String : ")
l=s.split(" ")
ans=""
for i in l:
    mid=i[1:len(i)-1]
    ans=ans+" "+i[0].upper()+mid+i[len(i)-1].upper()
print(ans)
```

```
Enter String : abc efg
 AbC EfG
```

03) WAP to find Maximum frequency character in String.

In [45]:
```
s=input("Enter String : ")
char={}
for i in s:
    if i in char:
        char[i]+=1
    else:
        char[i]=1
print(max(char, key=char.get))
```

```
Enter String : aabccccc
c
```

04) WAP to find Minimum frequency character in String.

In [47]:
```
s=input("Enter String : ")
char={}
for i in s:
    if i in char:
        char[i]+=1
    else:
        char[i]=1
print(min(char, key=char.get))
```

```
Enter String : abbbc bsada
c
```

05) WAP to check if a given string is binary string or not

In [43]:
```
s=input("Enter String :")
c=0
for i in s:
    if(i!="0" and i!="1"):
        print("Not binary")
        c=1
        break;
if(c==0):
    print("Binary")
```

```
Enter String :190
Not binary
```

In [ ]:

In [ ]:

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Python Programming - 2101CS405

Lab - 5

Name : Viral Chauhan

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list

01) WAP to find sum of all the elements in List.

In [1]:
```
lst = []
n = int(input("Enter number of elements : "))
sum=0
for i in range(0, n):
    e = int(input())
    sum+=e
    lst.append(e)
print(sum)
```

```
Enter number of elements : 4
1
2
3
4
10
```

02) WAP to find largest element in a List.

In [2]:
```
lst = []
n = int(input("Enter number of elements : "))
max=0
for i in range(0, n):
    e = int(input())
    if(e>max):
        max=e
    lst.append(e)
print(" Largest element  is ",max)
```

```
Enter number of elements : 3
22
34
66
 Largest element  is  66
```

03) WAP to split the List into two and append the first part to the end.

In [27]:
```
lst = []
n = int(input("Enter number of elements : "))
for i in range(0, n):
    e = int(input())
    lst.append(e)
l1=[]
l2=[]
for i in range(0,n):
    if(i<n//2):
        l1.append(lst[i])
    else:
        l2.append(lst[i])
print(l1)
print(l2)
ans=[]
for i in range(0,n):
    if(i<n//2):
        ans.append(l2[i])
    else:
        ans.append(l1[i-(n//2)])
print(ans)
```

```
Enter number of elements : 4
1
2
3
4
[1, 2]
[3, 4]
[3, 4, 1, 2]
```

04) WAP to interchange first and last elements in list entered by a user.

In [28]:
```
lst = []
n = int(input("Enter number of elements : "))
for i in range(0, n):
    e = int(input())
    lst.append(e)
temp=lst[0]
lst[0]=lst[n-1]
lst[n-1]=temp
print(lst)
```

```
Enter number of elements : 4
1
2
3
4
[4, 2, 3, 1]
```

05) WAP to interchange the elements on two positions entered by a user.

In [30]:
```
lst = []
n = int(input("Enter number of elements : "))
for i in range(0, n):
    e = int(input())
    lst.append(e)
a=int(input("Enter 1st position "))
b=int(input("Enter 2st position "))
temp=lst[a-1]
lst[a-1]=lst[b-1]
lst[b-1]=temp
print(lst)
```

```
Enter number of elements : 4
1
2
4
5
Enter 1st position 3
Enter 2st position 2
[1, 4, 2, 5]
```

06) WAP to reverses the list entered by user.

In [33]:
```
lst = []
n = int(input("Enter number of elements : "))
for i in range(0, n):
    e = int(input())
    lst.append(e)
lst.reverse()
print(lst)
```

```
Enter number of elements : 5
2
3
5
6
4
[4, 6, 5, 3, 2]
```

07) Python program to remove multiple elements from a list using list comprehension

In [2]:
```
lst = []
n = int(input("Enter number of elements : "))
for i in range(0, n):
    e = int(input())
    lst.append(e)
a=int(input("Enter element which you to delete :"))
ans=[i for i in lst if i%a!=0]
print(ans)
```

```
Enter number of elements : 6
1
2
3
4
5
6
Enter element which you to delete :2
[1, 3, 5]
```

08) Create a list from the specified start to end index of another list.

In [3]:
```
lst = []
n = int(input("Enter number of elements : "))
for i in range(0, n):
    e = int(input())
    lst.append(e)
a=int(input("Enter start index "))
b=int(input("Enter end index "))
i=a
ans=lst[a:b+1]

print(ans)
```

```
Enter number of elements : 5
1
2
3
4
5
Enter start index 2
Enter end index 4
[3, 4, 5]
```

09) Input comma separated elements, convert into list and print.

In [39]:
```
s=input("Enter coma separated elements for list :")
lst=s.split(",")
print(lst)
```

```
Enter coma separated elements for list1,2,3,4,5
['1', '2', '3', '4', '5']
```

01) WAP to count Even and Odd numbers in a List.

In [41]:
```
lst = []
even=0
odd=0
n = int(input("Enter number of elements : "))
for i in range(0, n):
    e = int(input())
    if(e%2==0):
        even+=1
    else:
        odd+=1
    lst.append(e)
print("Even = ",even, "  Odd = ",odd)
```

```
Enter number of elements : 4
1
2
3
4
Even =  2   Odd =  2
```

02) Python program to find N largest and smallest elements from the list

In [43]:
```
import heapq
lst = []
n = int(input("Enter number of elements : "))
for i in range(0, n):
    e = int(input())
    lst.append(e)
N=int(input("Enter value of N "))
largest = heapq.nlargest(N, lst)
smallest = heapq.nsmallest(N, lst)
print("Largest Elements = ",largest)
print("Smallest Elements = ",smallest)
```

```
Enter number of elements : 6
1
2
3
4
5
6
Enter value of N 2
Largest Elements =  [6, 5]
Smallest Elements =  [1, 2]
```

03) WAP to print duplicates from a list of integers

In [47]:
```
lst = []
n = int(input("Enter number of elements : "))
for i in range(0, n):
    e = int(input())
    lst.append(e)
a=set()
duplicate=set()
for i in lst:
    if i in a:
        duplicate.add(i)
    else:
        a.add(i)
print(duplicate)
```

```
Enter number of elements : 5
1
1
2
3
4
{1}
```

In [ ]:
```

```