

Literate Programming

- It is a combination of both coding and documentation
- Order list
 1. Apssdc
 2. Cbit
 3. Svce
- Unorder list
 - ap
 - kadapa
 - ts
 - tn

muneiah.t@apssdc.in (<mailto:muneiah.t@apssdc.in>)

www.cbit.edu.in (<http://www.cbit.edu.in>)



```
In [1]: 1 print("Hello World")
        2
```

Hello World

Variables in Python

```
In [ ]: 1  #-->Single Line Commenting
        2  #-->Multiline Commenting """ """
        3  ''' this is also
        4  multiline Commenting '''
```

```
In [5]: 1  #int a=10 #This in the C-Lang/java/cPP
        2  x=4# In Python Integer var declaration
        3  type(x)
        4  print("the value of x is ",x)
```

the value of x is 4

```
In [10]: 1  b=3.4
        2  type(b)
        3  #floor value is =3
        4  #Ceil value is =4
        5  s="cbit"
        6  s
        7  type(s)
        8  #multi variable declaration
        9  a,b,c=3,5,8
       10  b
       11  print(a+c)
```

11

```
In [ ]: 1  #Data Types in py
        2  """int
        3  float
        4  string
        5  set
        6  list
        7  tuple
        8  dict"""
```

```
In [15]: 1  n=int(input("Enter the N value "))
        2  #type(n)
        3  result=n+4
        4  print(result)
```

Enter the N value 4
8

```
In [ ]: 1
```

```
In [16]: 1 #Task 1:
          2 #Perform the arthametic opatations
          3 a=int(input("Enter the First value: "))
          4 b=int(input("Enter the Second value: "))
          5
          6 print("addition of ",a,"and ",b,"is ",a+b)a
```

Enter the First value: 10
 Enter the Second value: 3
 addition of 10 and 3 is 13

```
In [20]: 1 a=input("Enter First Value")
          2 a=int(a)
          3 b=input("Enter Second Value")
          4 b=int(b)
          5 print(type(a),type(b))
          6 print("Addition of ",a,"and ",b,"is ",a+b)
```

Enter First Value10
 Enter Second Value20
 <class 'int'> <class 'int'>
 Addition of 10 and 20 is 30

```
In [21]: 1 person_name=str(input("Plese enter your name : "))
          2 print("Hello ..!\n ",person_name,"Welcome to python world")
```

Plese enter your name : vijay
 Hello ..!
 vijay Welcome to python world

```
In [24]: 1 #Task-2
          2 #f(x)=x+2x+x(7+x)+20
          3 # input=10
          4 #output:?
          5 Result-->f(10)=?
```

File "<ipython-input-24-b84bd56e1310>", line 5

Result-->f(10)=?

^

SyntaxError: invalid syntax

```
In [29]: 1 #task-2
          2 #x=10
          3 #f(x)=x+2x+x(7+x)+20
          4 # f(10)=10+2(10)+(10)(7+(10))+20
          5 x=int(input("Enter Your X value:"))
          6 expre=x+2*x+x*(7+x)+20
          7 print("f(",x,")=",expre)
```

Enter Your X value:30
 f(30)= 1220

```
In [31]: 1  # # Task -3
2  # x=2
3  # y=3
4  # f(x,y)=xy+x(2y)+3x+4xy+30
5  # input:
6  #      2 3
7  # output:
8  #      f(x,y)=?
9  #      f(2,3)=78
10 #      f(3,5)=144
11 x=int(input())
12 y=int(input())
13 expre=x*y+x*(2*y)+3*x+4*x*y+30
14 print("f(",x,y,")=",expre)
```

```
3
5
f( 3 5 )= 144
```

```
In [32]: 1  #Power
2  2**3
```

```
Out[32]: 8
```

```
In [33]: 1  #3.4
2  #-3
3  a=3.4
4
5  import math
6
7  math.floor(a)
```

```
Out[33]: 3
```

```
In [39]: 1  x=10
2  y=2
3  x//y
```

```
Out[39]: 5
```

```
In [44]: 1  #Conditional Stms
2          #1.if
3          #syntax
4  #      if(conda){
5          #..Stements      #other Launges
6  #      }
7  a=4
8  b=8
9  # if condition:
10 #      ...stmts
11 if a<b:
12     print("Yes")
13
```

```
In [45]: 1 #2.if ..else
2 #syntax
3 #     if condition:
4 #         ...stms
5 #     else:
6 #         ...stms
7 if a>b:
8     print("Yes")
9 else:
10    print("No")
11
12
```

No

```
In [48]: 1 # 3.if..elif..else
2 # 2
3 # 3
4 # 5
5 a=9
6 b=3
7 c=5
8 d=7
9 if(a>b):
10     if(a>c):
11         if(a>d):b
12             print("A is big")
13 elif(b>c):
14     if(b>d):
15         print("b is big")
16 elif(c>d):
17     print("c is Big")
18 else:
19     print("D is big")
```

A is big

Task-4 input:2019 output:not a leap year input:1900 output:Yes It is leap year

(year%400 or (year%100!=0) and (year%4==0))

Task-5 input: l=180 w=200 h=600 output:crop it input: l=180 w=180 h=180 output:Accepted input: l=180 w=120 h=500 output:Not Accepted

```
In [52]: 1 year=int(input(" "))
2 if (year%400==0 or (year%100!=0) and (year%4==0)):
3     print("Yes")
4 else:
5     print("No")
6
```

1900

No

In [56]:

```

1  # Task-5
2  # input:
3  #     l=180
4  #     w=200
5  #     h=600
6  # output:crop it
7  # input:
8  #     l=180
9  #     w=180
10 #     h=180
11 # output:Accepted
12 # input:
13 #     l=180
14 #     w=120
15 #     h=500
16 # output:Not Accepted
17 l=int(input())
18 w=int(input())
19 h=int(input())
20 if(l<=w and l<=h):
21     if(w==h):
22         print("Accepted")
23     else:
24         print("Crop it")
25 else:
26     print("not Accepted")

```

180

180

180

Accepted

In [60]:

```

1  #Control Statements #iteration
2      # For
3      #While
4  # for(datatype;Condition;increment/decre){
5  #     --Stms
6  # }
7      # for var member/range:
8      #     ...Stms
9      #     ...incre/decre..
10 #Generate the first 10 natural numbers sum
11 #1,2,3,,...10
12 for i in range(1,10+1):
13     print(i,end=" ")
14
15
16
17

```

1 2 3 4 5 6 7 8 9 10

```
In [65]: 1 #even number
2 count=0
3 for evenNum in range(0,100+1,2):
4     count=count+1
5     print(evenNum,end=" ")
6 print("\nTotal even numbers are :",count)
```

0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54
56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 100
Total even numbers are : 51

```
In [71]: 1 c=0
2 for i in range(0,101):
3     if i%2==0:
4         c+=1
5         print(i,end=" ")
6 print("\ntotal ",c)
7
8
```

0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54
56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 100
total 51

Task 6:

- Generate the all yeap years in range of 2000 to 2020

```
In [80]: 1 st=int(input())
2 en=int(input())
3 c=0
4 for year in range(st,en+1):
5     if (year%400==0 or (year%100!=0) and (year%4==0)):
6         c=c+1
7         print(year,end=" ")
8 print("\n Total years are :",c)
9
10
```

1900
2020
1904 1908 1912 1916 1920 1924 1928 1932 1936 1940 1944 1948 1952 1956 1960 1964
1968 1972 1976 1980 1984 1988 1992 1996 2000 2004 2008 2012 2016 2020
Total years are : 30

In [90]:

```

1  # input:20
2  # output:1,2,3,4,5 .....20
3  #      sum=?
4  n=int(input())
5  n_sum=0
6  e_sum=0
7  o_sum=0
8  for i in range(1,n+1):#--->start-1,end=n+1-->20
9      print(i,end=",")
10     n_sum=n_sum+i#0+1-->1
11     if(i%2!=1):# i%2==0
12         e_sum=e_sum+i
13     if(i%2!=0):#i%2==1
14         o_sum=o_sum+i
15 print("\nNatural numbers Sum=",n_sum)
16 print("Even Numbers sum=",e_sum)
17 print("Odd Numbers Sum=",o_sum)
18 if(n_sum==e_sum+o_sum):
19     print("You Did a Grate Job")
20 else:
21     print("You are the loser")
22

```

20

1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,

Natural numbers Sum= 210

Even Numbers sum= 110

Odd Numbers Sum= 100

You Done a Grate Job

In []:

```

1  Task-6
2  input:10
3  Explanation:1+10  2+9  3+8  4+7  .....
4  output:  11 11  11  11
5
6  Task:7
7  input:10
8  Explanation:1+2^2  2+3^2  3+4^2  .....
9  output:  5  11 19 ...
10
11 Task:8
12 input:10
13 Explanation: 10+(1^2+1)  9+(2^2+1)  8+(3^2)+1  7+(4^2)+1
14 output:12 14 18 24 28 ....
15

```



```
In [2]: 1 t=int(input("Enter the input value: "))
        2 i=1
        3 for i in range(i,t+1):
        4     result=i+t
        5     t=t-1
        6     print(result,end=" ")
```

Enter the input value: 20

21 21 21 21 21 21 21 21 21 21 21 21 21 21 21 21 21 21

```
In [11]: 1 n=int(input())
        2 tem=1
        3 for i in range(n,0,-1):
        4     print(i+tem,end=",")
        5     tem=tem+1 #temp+=1
```

20

21, 21, 21, 21, 21, 21, 21, 21, 21, 21, 21, 21, 21, 21, 21, 21, 21, 21,

```
In [13]: 1 c=1
        2 n=int(input())
        3 for i in range(2,n+1):
        4     expre=c+i**2
        5     c=c+1
        6     print(expre,end=" ")
```

10

5 11 19 29 41 55 71 89 109

```
In [19]: 1 n=int(input())
        2 n_sum=0
        3 for i in range(1,n+1):
        4     n_sum=n_sum+(i+(i+1)**2)
        5     print(i,"--->",i,"+", "(" ,i+1, "**2)=",i+(i+1)**2)
        6 print("sum=",n_sum)
```

10

1 ---> 1 + (2 **2)= 5
 2 ---> 2 + (3 **2)= 11
 3 ---> 3 + (4 **2)= 19
 4 ---> 4 + (5 **2)= 29
 5 ---> 5 + (6 **2)= 41
 6 ---> 6 + (7 **2)= 55
 7 ---> 7 + (8 **2)= 71
 8 ---> 8 + (9 **2)= 89
 9 ---> 9 + (10 **2)= 109
 10 ---> 10 + (11 **2)= 131
 sum= 560

```
In [20]: 1 n=int(input())
          2 t=1
          3 for i in range(n,0,-1):
          4     expre=i+(t**2)+1
          5     print(expre,end=" ")
          6     t+=1
```

10

12 14 18 24 32 42 54 68 84 102

```
In [ ]: 1
```

```
In [ ]: 1
```