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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 [9]:
```
for i in range(1,11):
    print(i);
```

```
1
2
3
4
5
6
7
8
9
10
```

02) WAP to print 1 to n

In [13]:
```
a = int(input('a:'))

for i in range(1,a):
    print(i)
```

```
a:15
1
2
3
4
5
6
7
8
9
10
11
12
13
14
```

03) WAP to print odd numbers between 1 to n

In [19]:
```
n = int(input('n:'))

for i in range(1,n,2):
    print(i,end = " ")
```

```
n:10
1 3 5 7 9
```

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

In [21]:
```
a = int(input('a:'))
b = int(input('b:'))

for x in range(a+1,b,1):
    if((x%2 == 0) and (x%3 != 0)):
        print(x)
```

```
a:10
b:20
14
16
```

05) WAP to print sum of 1 to n numbers

In [26]:
```
n = int(input('n:'))
sum = 0

for i in range(1,n):
    sum += i
    print(sum)
```

```
n:11
1
3
6
10
15
21
28
36
45
55
```

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

In [29]:
```
n = int(input())
sum = 0

for i in range(1,n):
    x = i*i
    sum += (i*i)
    print(x , end = " ")

print("=",sum)
```

```
6
1 4 9 16 25 = 55
```

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

In [33]:
```
n = int(input('n:'))
sum = 0

for i in range(1,n):
    if(i%2 == 0):
        sum -= i
    else:
        sum += i

print(sum)
```

```
n:11
-5
```

08) WAP to print multiplication table of given number.

In [34]:
```
n = int(input('n:'))
m = 1

for i in range(1,11):
    m = n*i;
    print(n,"*",i,"=",m)
```

```
n:11
11 * 1 = 11
11 * 2 = 22
11 * 3 = 33
11 * 4 = 44
11 * 5 = 55
11 * 6 = 66
11 * 7 = 77
11 * 8 = 88
11 * 9 = 99
11 * 10 = 110
```

09) WAP to find factorial of the given number

In [39]:
```
n = int(input('n:'))
mul = 1

for i in range(1,n+1):
    mul = mul*i

print(mul)
```

```
n:5
120
```

10) WAP to find factors of the given number

In [41]:
```
n = int(input('n:'))

for i in range(1,n+1):
    if(n%i == 0):
        print(i,end = " ")
```

```
n:6
1 2 3 6
```

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

In [5]:
```
n = int(input('n:'))
flag = 0

for i in range(2,int(n**(1/2)+1)):
    if(n%i == 0):
        flag = 1

if(flag == 0):
    print("Given Number Is Prime.")
else:
    print("Given Number Is Not Prime.")
```

```
n:51
Given Number Is Not Prime.
```

12) WAP to print sum of digits of given number

In [58]:
```
n = int(input('n:'))
sum = 0

while(n>0):
    sum = sum + n%10
    n = int(n/10)

print(sum)
```

```
n:526
13
```

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

In [66]:
```
n=int(input('n:'))
x = n
sum = 0

while(x>0):
    sum = sum*10 + x%10
    x = int(x/10)

print(sum)
if(sum == n):
    print('Given Number is Palindrome')
else:
    print('Given Number is Not Palindrome')
```

```
n:121
121
Given Number is Palindrome
```

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

In [79]:
```
n = int(input('n:'))
x = n
b = n
sum = 0
count = 0

while(n>0):
    n = int(n/10)
    count += 1

while(x>0):
    sum = sum + pow(x%10 , count)
    x = int(x/10)

if(sum == b):
    print("Given Number is Armstrong.")
else:
    print("Given Number is Not Armstrong.")
```

```
n:153
Given Number is Armstrong.
```

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

In [4]:
```
a = int(input('a:'))
b = int(input('b:'))

for i in range(a+1,b):
    if i>1:
        for j in range(2,(int(i**(1/2)))+1):
            if(i%j == 0):
                break
        else:
            print(i)
```

```
a:20
b:30
23
29
```

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

In [8]:
```
b = int(input('b:'))
p = int(input('p:'))
ans = int(1)

for i in range(p):
    ans = ans * b

print(f"{b}^{p} = {ans}")
```

```
b:2
p:3
2^3 = 8
```

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

[Sum of factors including 1 excluding number itself]

In [10]:
```
n = int(input('n:'))
sum = 0

for i in range(1,n):
    if(n%i == 0):
       sum += i

if(n == sum):
    print("Given Number is perfect Number.")
else:
    print("Given Number is not perfect Number.")
```

```
n:9
Given Number is not perfect Number.
```

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

In [17]:
```
n = int(input('n:'))
sum = 0

for i in range(n+1):
    for j in range(i+1):
        sum = sum + j

print(f"Sum = {sum}")
```

```
n:5
Sum = 35
```

06) WAP to print Multiplication Table up to n

In [11]:
```
n = int(input('n:'))

for i in range(1,11):
    print(f"{n}*{i} = {n*i}")
```

```
n:10
10*1 = 10
10*2 = 20
10*3 = 30
10*4 = 40
10*5 = 50
10*6 = 60
10*7 = 70
10*8 = 80
10*9 = 90
10*10 = 100
```

In [ ]:
```

```