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Python Programming - 2101CS405

Lab - 3

for and while loop

01) WAP to print 1 to 10

In [4]:
```
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 [5]:
```
n = int(input("Enter the value of n: "))
for i in range(1,n+1):
    print(i)
```

```
Enter the value of n: 15
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
```

03) WAP to print odd numbers between 1 to n

In [6]:
```
n = int(input("Enter the value of n = "))

print("Odd Numbers: ")
for i in range(1,n+1):
    if(i%2!=0):
        print(i)
```

```
Enter the value of n = 15
Odd Numbers:
1
3
5
7
9
11
13
15
```

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

In [7]:
```
a = int(input("Ente the Number 1: "))
b = int(input("Ente the Number 2: "))

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

```
Ente the Number 1: 15
Ente the Number 2: 30
16
20
22
26
28
```

05) WAP to print sum of 1 to n numbers

In [8]:
```
n = int(input("Enter the Number: "))

sum = 0
for i in range(1,n+1):
    sum+=i
print("Sum of 1 to",n,"=",sum)
```

```
Enter the Number: 9
Sum of 1 to 9 = 45
```

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

In [15]:
```
n = int(input("Enter the n: "))

sum = 0
for i in range(1,n+1):
    sum += i*i
print("Sum = ",sum)
```

```
Enter the n: 5
Sum =  55
```

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

In [86]:
```
n = int(input("Enter the n: "))

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

```
Enter the n: 5
Sum =  3
```

08) WAP to print multiplication table of given number.

In [41]:
```
n = int(input("Enter the n: "))

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

```
5 x 1 = 5
5 x 2 = 10
5 x 3 = 15
5 x 4 = 20
5 x 5 = 25
5 x 6 = 30
5 x 7 = 35
5 x 8 = 40
5 x 9 = 45
5 x 10 = 50
```

09) WAP to find factorial of the given number

In [17]:
```
n = int(input("Enter the n: "))

factorial = 1
for i in range(1,n+1):
    factorial *= i
print("Factorial of",n,"=",factorial)
```

```
Enter the n: 5
Factorial of 5 = 120
```

10) WAP to find factors of the given number

In [18]:
```
n = int(input("Enter the n: "))

for i in range(1,int(n/2+1)):
    if(n%i == 0):
        print(i,end=" ")
```

```
Enter the n: 36
1 2 3 4 6 9 12 18
```

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

In [30]:
```
n = int(input("Enter the n: "))

for i in range(2,int(n/2+1)):
    if(n%i == 0):
        print(n,"is a Not Prime Number.")
        break
else:
    print(n,"is a Prime Number.")

# n = int(input("Enter the n: "))

# flag = True
# for i in range(2,int(n/2+1)):
#     if(n%i == 0):
#         flag = False
#         break
# if(flag):
#     print(n,"is a Prime Number.")
# else:
#     print(n,"is a Not Prime Number.")
```

```
Enter the n: 13
13 is a Prime Number.
```

12) WAP to print sum of digits of given number

In [31]:
```
n = int(input("Enter the n: "))

sum = 0
while n>0:
    temp = int(n % 10)
    sum += temp
    n /= 10
print("Sum of Digit = ",sum)
```

```
Enter the n: 156
Sum of Digit =  12
```

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

In [68]:
```
n = int(input("Enter the n: "))

x = 0
i = n
while i > 0:
    x = (x*10)+(i%10)
    i = int(i/10)
if(x == n):
    print(n,"is Palindrome")
else:
    print(n,"is Not Palindrome")
```

```
Enter the n: 121
121 is Palindrome
```

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

In [7]:
```
n = int(input("Enter the Number: "))

arm = 0
x = n
while n>0:
    temp = int(n%10)
    arm += temp*temp*temp
    n /= 10
if(x == arm):
    print("Number is Armstrong")
else:
    print("Number is Not Armstrong")
```

```
Enter the Number: 153
Number is Armstrong
```

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

In [51]:
```
a = int(input("Enter the a: "))
b = int(input("Enter the b: "))

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

```
Enter the a: 5
Enter the b: 15
5 7 11 13
```

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

In [78]:
```
x = int(input("Enter the a: "))
y = int(input("Enter the b: "))

squre = x
for i in range(x,y+1):
    i = x
    squre *= i
print("x^y =",squre)
```

```
Enter the a: 2
Enter the b: 5
x^y = 32
```

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

[Sum of factors including 1 excluding number itself]

In [84]:
```
n = int(input("Enter the n: "))

perfect = 0
for i in range(1,int(n/2+1)):
    if(n%i == 0):
        perfect += i
if(perfect == n):
    print("Number is Perfect ")
else:
    print("Number is Not Perfect ")
```

```
Enter the n: 28
Number is Perfect
```

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

In [91]:
```
n = int(input("Enter the n: "))

sum = 0
for i in range(1,n+1):
    for j in range(1,i+1):
        sum += j
print("Sum = ",sum)
```

```
Enter the n: 4
Sum =  20
```

06) WAP to print Multiplication Table up to n

In [92]:
```
n = int(input("Enter the n: "))
end = int(input("Enter the End Point: "))

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

```
Enter the n: 5
Enter the n: 15
5 x 1 = 5
5 x 2 = 10
5 x 3 = 15
5 x 4 = 20
5 x 5 = 25
5 x 6 = 30
5 x 7 = 35
5 x 8 = 40
5 x 9 = 45
5 x 10 = 50
5 x 11 = 55
5 x 12 = 60
5 x 13 = 65
5 x 14 = 70
5 x 15 = 75
```