

Python Programming - 2101CS405

Lab - 3

```
In [ ]: Name : - Vora Yagnik Rajeshbhai  
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```

for and while loop

01) WAP to print 1 to 10

```
In [4]: for i in range (0,10):  
        print(i+1,end=",")
```

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

```
In [6]: i = 1  
        while(i<=10):  
            print(i,end=",")  
            i += 1
```

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

02) WAP to print 1 to n

```
In [7]: n = int(input("Enter value of N :"))  
  
        for i in range (0,n):  
            print(i+1,end=",")
```

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

```
In [15]: n = int(input("Enter value of N :"))  
         i = 1;  
         while(i<=10):  
             print(i,end=",")  
             i += 1;
```

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

03) WAP to print odd numbers between 1 to n

```
In [9]: n = int(input("Enter value of N :"))

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

1,3,5,7,9,

```
In [17]: n = int(input("Enter value of N :"))
i = 1
while(i<=n):
    if(i%2 != 0):
        print(i,end=",")
    i += 1;
```

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 [13]: start = int(input("Enter value of Start :"))
end = int(input("Enter value of End :"))

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

2,4,8,10,14,

```
In [18]: start = int(input("Enter value of Start :"))
end = int(input("Enter value of End :"))
i = start
while(i <= end):
    if(i%2 == 0 and i%3 != 0):
        print(i,end=",")
    i += 1
```

16,20,

05) WAP to print sum of 1 to n numbers

```
In [22]: n = int(input("Enter value of N :"))

sum = 0;

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

print(sum)
```

```
In [23]: n = int(input("Enter value of N :"))

sum = 0;
i = 1;
while(i<=n):
    sum += i;
    i += 1;

print(sum)
```

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

```
In [24]: n = int(input("Enter value of N :"))

sum = 0;

for i in range (1,n+1):
    sum += i**2

print(sum)
```

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```
In [26]: n = int(input("Enter value of N :"))

sum = 0;
i = 1
while(i<=n):
    sum += i**2
    i += 1
print(sum)
```

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07) WAP to print sum of series $1 - 2 + 3 - 4 + 5 - 6 + 7 \dots n$

```
In [37]: n = int(input("Enter value of N :"))

sum = 0;

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

-5

```
In [36]: n = int(input("Enter value of N :"))

sum = 0
i = 1
```

```

while(i<=n):
    if(i%2 == 0):
        sum -= i
    else:
        sum += i
    i += 1
print(sum)

```

-5

08) WAP to print multiplication table of given number.

In [40]: `n = int(input("Enter number : "))`

```

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

```

In [42]: `n = int(input("Enter number : "))`

```

i = 1
while(i<=10):
    print(n," x ",i," = ",n*i)
    i += 1

```

```

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 [43]: `n = int(input("Enter number : "))`

```

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

```

```
In [44]: n = int(input("Enter number : "))
i = 1
fact = 1
while(i<=n):
    fact *= i
    i += 1
print(fact)
```

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10) WAP to find factors of the given number

```
In [45]: n = int(input("Enter number : "))

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

1,2,3,6,

```
In [46]: n = int(input("Enter number : "))
i = 1
while(i<=n):
    if(n%i == 0):
        print(i,end=",")
    i += 1
```

1,3,5,15,

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

```
In [51]: n = int(input("Enter number : "))
flag = True
for i in range (2,n):
    if(n%i == 0):
        flag = False
if(flag):
    print(n," is Prime")
else:
    print(n," is not Prime")
```

23 is Prime

```
In [56]: n = int(input("Enter number : "))
i = 2
while(i<n):
    if(n%i == 0):
        print(n," is not Prime")
        break
    else:
        print(n," is Prime")
        break
```

12) WAP to print sum of digits of given number

```
In [62]: n = int(input("Enter number : "))
temp = n
sum = 0
while(temp > 0):
    digit = temp%10
    sum = sum + digit
    temp = temp // 10
print(sum)
```

15

```
In [67]: n = int(input("Enter number : "))
temp = n
sum = 0
for i in range(1,temp):
    if(temp>0):
        digit = temp%10
        sum = sum + digit
        temp = temp // 10
    else:
        break;
print(sum)
```

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

```
In [72]: n = int(input("Enter number : "))
temp = n
rev = 0
while(temp > 0):
    digit = temp%10
    rev = (rev*10) + digit
    temp = temp // 10
if(n == rev):
    print(n," is palindrome ")
else:
    print(n," is not palindrome ")
```

12345 is not palindrome

```
In [77]: n = int(input("Enter number : "))
temp = n
rev = 0
for i in range(1,temp):
    if(temp>0):
        digit = temp%10
        rev = (rev*10) + digit
        temp = temp // 10
    else:
```

```

        break;
    if(n == rev):
        print(n," is palindrome ")
    else:
        print(n," is not palindrome ")

```

12321 is palindrome

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

```

In [28]: n = int(input("Enter number : "))

s = len(str(n))
sum = 0
temp = n

while(temp > 0):
    digit = temp%10
    sum = sum + (digit**s)
    temp = temp //10

if(sum == n):
    print(n," is armstrong number")
else:
    print(n," is not armstrong number")

```

1634 is armstrong number

```

In [26]: n = int(input("Enter number : "))

s = len(str(n))
sum = 0
temp = n
for i in range(1,temp):
    if(temp > 0):
        digit = temp%10
        sum = sum + (digit**s)
        temp = temp //10
    else:
        break;

if(sum == n):
    print(n," is armstrong number")
else:
    print(n," is not armstrong number")

```

1356 is not armstrong number

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

```

In [5]: start = int(input("Enter Starting point :"))
end = int(input("Enter Ending point :"))

```

```

for i in range(start,end+1):
    flag = True
    for j in range (2,i):
        if(i%j == 0):
            flag = False;
    if(flag):
        print(i,end=",")

```

11,13,17,19,23,29,31,37,41,43,47,53,59,61,67,71,73,79,83,89,

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

```

In [6]: base = int(input("Enter Base value(X) : "))
        pow = int(input("Enter Power value(Y) : "))
        power = 1;
        for i in range (1,pow+1):
            power *= base
        print(power)

```

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

[Sum of factors including 1 excluding number itself]

```

In [50]: n = int(input("Enter Starting point :"))
        sum = 0
        for i in range(1,n):
            if(n%i == 0):
                sum += i
        if(sum == n):
            print(n, " is perfect number")
        else:
            print(n, " is not perfect number")

```

6 is perfect number

05) WAP to find the sum of $1 + (1+2) + (1+2+3) + (1+2+3+4) + \dots + (1+2+3+4+\dots+n)$

```

In [19]: n = int(input("Enter number : "))
        sum = 0
        temp = 0
        for i in range (1,n+1):
            sum += i*(i+1)/2
        print(sum)

```

1540.0

06) WAP to print Multiplication Table up to n

```

In [6]: n = int(input("Enter N : "))
        i = 1

```



```
while i<=n:
    j = 1
    while j<=n:
        print(i*j,end="\t")
        j += 1
    print()
    i += 1
```

1	2	3	4	5	6	7	8	9	10
2	4	6	8	10	12	14	16	18	20
3	6	9	12	15	18	21	24	27	30
4	8	12	16	20	24	28	32	36	40
5	10	15	20	25	30	35	40	45	50
6	12	18	24	30	36	42	48	54	60
7	14	21	28	35	42	49	56	63	70
8	16	24	32	40	48	56	64	72	80
9	18	27	36	45	54	63	72	81	90
10	20	30	40	50	60	70	80	90	100