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Python Programming - 2101CS405

Lab - 3

for and while loop

01) WAP to print 1 to 10

In [2]:
```
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 [4]:
```
n = int(input("Enter NO:"));
for i in range(1,n+1):
    print(i);
```

```
Enter NO:60
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
```

03) WAP to print odd numbers between 1 to n

In [9]:
```
a = int(input("Enter No(start):"));
b = int(input("Enter No(end):"));
for a in range(a,b):
    if(a%2 != 0):
        print(a);
```

```
Enter No(start):5
Enter No(end):50
5
7
9
11
13
15
17
19
21
23
25
27
29
31
33
35
37
39
41
43
45
47
49
```

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

In [8]:
```
a = int(input("Enter NO(start):"));
b = int(input("Enter NO(end):"));
for a in range(a,b):
    if(a%2 == 0 and a%3 != 0):
        print(a);
```

```
Enter NO(start):5
Enter NO(end):20
8
10
14
16
```

05) WAP to print sum of 1 to n numbers

In [12]:
```
n = int(input("Enter NO:"));
sum = 0;
for i in range(1,n+1):
    sum += i;
sum
```

```
Enter NO:5
```

Out[12]: 15

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

In [14]:
```
n = int(input("Enter NO:"))
sum = 0
for i in range(1,n+1):
    sum += i**2
sum
```

```
Enter NO:3
```

Out[14]: 14

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

In [16]:
```
n = int(input("Enter NO:"))
sum =0
for i in range(1,n+1):
    if(i%2!=0):
        sum += i
    else:
        sum -= i
sum
```

```
Enter NO:3
```

Out[16]: 2

08) WAP to print multiplication table of given number.

In [17]:
```
n = int(input("Enter NO:"))
for i in range(1,11):
    print(n,"x",i,"=",n*i)
```

```
Enter NO:10
10 x 1 = 10
10 x 2 = 20
10 x 3 = 30
10 x 4 = 40
10 x 5 = 50
10 x 6 = 60
10 x 7 = 70
10 x 8 = 80
10 x 9 = 90
10 x 10 = 100
```

09) WAP to find factorial of the given number

In [18]:
```
n = int(input("Enter NO:"))
mul = 1
for i in range(1,n+1):
    mul *= i
mul
```

```
Enter NO:5
```

Out[18]: 120

10) WAP to find factors of the given number

In [21]:
```
n = int(input("Enter NO:"))
for i in range(1,n+1):
    if(n%i == 0):
        print(i)
```

```
Enter NO:81
1
3
9
27
81
```

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

In [29]:
```
n = int(input("Enter NO:"))
flag = True
for i in range(2,int((n/2))+1):
    if(n%i ==0):
        flag = False
if(flag == False):
    print("Not Prime..")
else:
    print("Prime...")
```

```
Enter NO:8
Not Prime..
```

12) WAP to print sum of digits of given number

In [30]:
```
n = int(input("Enter NO:"))
sum = 0;
while(n != 0):
    sum += n%10
    n = int(n/10)
sum
```

```
Enter NO:123
```

Out[30]: 6

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

In [34]:
```
n = int(input("Enter NO:"))
temp = n
rev = 0
while(temp != 0):
    rem = temp%10
    rev = (rev*10) + rem
    temp = int(temp/10)
if(rev == n):
    print("palindrome")
else:
    print("Not palindrome")
```

```
Enter NO:1331
palindrome
```

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

In [55]:
```
n = int(input("Enter NO:"))
temp1 = temp2 =n
sum=0
count =0

while(temp1 != 0):
    rem = temp1%10
    count += 1
    temp1 = int(temp1/10)
while(temp2 != 0):
    sum += (temp2%10)**count
    temp2 = int(temp2/10)
if(n == sum):
    print("ArmStrong")
else:
    print("Not ArmStrong")
```

```
Enter NO:371
ArmStrong
```

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

In [74]:
```
start = int(input("Enter the lower bound: "))
stop = int(input("Enter the upper bound: "))

for val in range(start, stop):
  if val > 1:
    for i in range(2, val):
      if (val % i) == 0:
        break
    else:
      print(val)
```

```
Enter the lower bound: 2
Enter the upper bound: 20
2
3
5
7
11
13
17
19
```

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

In [86]:
```
x = int(input("Enter base:"));
y = int(input("Enter Power:"));
mul =1;
for i in range(1,y+1):
    mul *= x
mul
```

```
Enter base:2
Enter Power:10
```

Out[86]: 1024

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

[Sum of factors including 1 excluding number itself]

In [95]:
```
n = int(input("Enter NO:"));
flage = True;
sum = 0;
for i in range(1,n):
    if(n%i==0):
        sum += i;
if n == sum:
    print("Perfect");
else:
    print("Not Perfect")
```

```
Enter NO:8
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 [28]:
```
n = int(input("Enter NO:"));
sum = 0;
for i in range(1,n+1):
    for j in range(1,i+1):
        sum += j;
sum
```

```
Enter NO:6
```

Out[28]: 56

06) WAP to print Multiplication Table up to n

In [7]:
```
n = int(input("Enter No:"));
mul = 1;
for i in range(1,n+1):
    mul = n * i;
    print(n,"x",i,"=",mul);
```

```
Enter No:100
100 x 1 = 100
100 x 2 = 200
100 x 3 = 300
100 x 4 = 400
100 x 5 = 500
100 x 6 = 600
100 x 7 = 700
100 x 8 = 800
100 x 9 = 900
100 x 10 = 1000
100 x 11 = 1100
100 x 12 = 1200
100 x 13 = 1300
100 x 14 = 1400
100 x 15 = 1500
100 x 16 = 1600
100 x 17 = 1700
100 x 18 = 1800
100 x 19 = 1900
100 x 20 = 2000
100 x 21 = 2100
100 x 22 = 2200
100 x 23 = 2300
100 x 24 = 2400
100 x 25 = 2500
100 x 26 = 2600
100 x 27 = 2700
100 x 28 = 2800
100 x 29 = 2900
100 x 30 = 3000
100 x 31 = 3100
100 x 32 = 3200
100 x 33 = 3300
100 x 34 = 3400
100 x 35 = 3500
100 x 36 = 3600
100 x 37 = 3700
100 x 38 = 3800
100 x 39 = 3900
100 x 40 = 4000
100 x 41 = 4100
100 x 42 = 4200
100 x 43 = 4300
100 x 44 = 4400
100 x 45 = 4500
100 x 46 = 4600
100 x 47 = 4700
100 x 48 = 4800
100 x 49 = 4900
100 x 50 = 5000
100 x 51 = 5100
100 x 52 = 5200
100 x 53 = 5300
100 x 54 = 5400
100 x 55 = 5500
100 x 56 = 5600
100 x 57 = 5700
100 x 58 = 5800
100 x 59 = 5900
100 x 60 = 6000
100 x 61 = 6100
100 x 62 = 6200
100 x 63 = 6300
100 x 64 = 6400
100 x 65 = 6500
100 x 66 = 6600
100 x 67 = 6700
100 x 68 = 6800
100 x 69 = 6900
100 x 70 = 7000
100 x 71 = 7100
100 x 72 = 7200
100 x 73 = 7300
100 x 74 = 7400
100 x 75 = 7500
100 x 76 = 7600
100 x 77 = 7700
100 x 78 = 7800
100 x 79 = 7900
100 x 80 = 8000
100 x 81 = 8100
100 x 82 = 8200
100 x 83 = 8300
100 x 84 = 8400
100 x 85 = 8500
```

```
100 x 86 = 8600
100 x 87 = 8700
100 x 88 = 8800
100 x 89 = 8900
100 x 90 = 9000
100 x 91 = 9100
100 x 92 = 9200
100 x 93 = 9300
100 x 94 = 9400
100 x 95 = 9500
100 x 96 = 9600
100 x 97 = 9700
100 x 98 = 9800
100 x 99 = 9900
100 x 100 = 10000
```

In [ ]: