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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 [10]:
```
print("using for")
for i in range(1,11):
    print(i,end=" ")

print()
print("using while")
i=1
while i<=10:
    print(i,end=" ")
    i=i+1
```

```
using for
1 2 3 4 5 6 7 8 9 10
using while
1 2 3 4 5 6 7 8 9 10
```

02) WAP to print 1 to n

In [16]:
```
num=int(input("Enrer number"))
for i in range(1,num+1):
    print(i,end=" ")
```

```
Enrer number8
1 2 3 4 5 6 7 8
```

03) WAP to print odd numbers between 1 to n

In [17]:
```
n=int(input("Enter number: "))
for i in range(1,n+1):
    if i%2!=0:
        print(i,end=" ")
```

```
Enter number: 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 [18]:
```
num1=int(input("Enter first number"))
num2=int(input("Enter first number"))

for i in range(num1,num2+1):
    if i%2==0 and i%3!=0:
        print(i)
```

```
Enter first number10
Enter first number20
10
14
16
20
```

05) WAP to print sum of 1 to n numbers

In [22]:
```
n=int(input("Enter number "))
temp=0
for i in range(1,n+1):
    temp=temp+i
print(f"sum is {temp}")
```

```
Enter number 10
sum is 55
```

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

In [26]:
```
num=int(input("Enter number : "))
i=1
for i in range(1,num+1):
    if i==num:
        print(f"{i**2}",end="\n")
    else:
        print(f"{i**2}",end=" + ")
```

```
Enter number : 5
1 + 4 + 9 + 16 + 25
```

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

In [33]:
```
n=int(input("Enter number: "))
for i in range(1,n+1):
    if i==n:
        print(f"{i}",end="\n")
    else:
        if i%2==0:
            print(f"{i}",end=" + ")
        else:
            print(f"{i}",end=" - ")
```

```
Enter number: 6
1 - 2 + 3 - 4 + 5 - 6
```

08) WAP to print multiplication table of given number.

In [35]:
```
n=int(input("Enter number: "))
for i in range(1,11):
    print(f"{n} X {i} = {n*i}")
```

```
Enter number: 6
6 X 1 = 6
6 X 2 = 12
6 X 3 = 18
6 X 4 = 24
6 X 5 = 30
6 X 6 = 36
6 X 7 = 42
6 X 8 = 48
6 X 9 = 54
6 X 10 = 60
```

09) WAP to find factorial of the given number

In [37]:
```
n=int(input("Enter number: "))
fact=1
for i in range(1,n+1):
    fact=fact*i
print(f"factorial of {n} is {fact}")
```

```
Enter number: 5
factorial of 5 is 120
```

10) WAP to find factors of the given number

In [42]:
```
n=int(input("Enter number: "))
for i in range(1,(n//2)+1):
    if n%i==0:
        print(i,end=" ")
```

```
Enter number: 12
1 2 3 4 6
```

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

In [47]:
```
n=int(input("Enter number: "))
isPrime=True
for i in range(2,(n//2)+1):
    if n%i==0:
        isPrime=False
        break
if isPrime:
    print(f"{n} is prime")
else:
    print(f"{n} is not prime")
```

```
Enter number: 7
7 is prime
```

12) WAP to print sum of digits of given number

In [51]:
```
n=int(input("Enter number: "))
sum=0
while n!=0:
    digit=n%10
    sum=sum+digit
    n=n//10
print(f"sum of digit is {sum}")
```

```
Enter number: 1234
sum of digit is 10
```

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

In [55]:
```
n=int(input("Enter number: "))
cN=n
reverseNum=0
while n!=0:
    reverseNum=reverseNum*10+n%10
    n=n//10
if reverseNum==cN:
    print(f"{cN} is palindrome")
else:
    print(f"{cN} is not palindrome")
```

```
Enter number: 123
123 is not palindrome
```

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

In [68]:
```
import math
n=input("Enter number: ")
copyN=int(n)
noOfDigit=len(n)
sum=0
while int(n)!=0:
    temp=(int(n)%10)
    sum+=pow(temp,noOfDigit)
    n=(int(n)//10)
if sum==copyN:
    print(f"{copyN} is Armstrong")
else:
    print(f"{copyN} is not Armstrong")
```

```
Enter number: 1634
1634 is Armstrong
```

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

In [7]:
```
m=int(input("Enter number: "))
n=int(input("Enter number: "))
for i in range(m,n+1):
    for j in range(2,((i)//2)+1):
        if i%j==0:
            break
    else:
         print(i)
```

```
Enter number: 1
Enter number: 50
1
2
3
5
7
11
13
17
19
23
29
31
37
41
43
47
```

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

In [9]:
```
x=int(input("Enter number: "))
y=int(input("Enter number: "))
temp=1
for i in range(1,y+1):
    temp*=x
print(f"power of {x} and {y} is {temp}")
```

```
Enter number: 2
Enter number: 4
power of 2 and 4 is 16
```

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

[Sum of factors including 1 excluding number itself]

In [3]:
```
m = int(input("Enter number : "))
sum = 0

for i in range(1,(m//2)+1) :
    if m % i == 0 :
        sum += i

if sum == m :
    print(f"{m} is perfact!!")
else :
    print(f"{m} is not perfact!!")
```

```
Enter number : 6
6 is perfact!!
```

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

In [9]:
```
n = int(input("Enter the value of n: "))
total_sum = 0
current_sum = 0

for i in range(1, n + 1):
    current_sum += i
    total_sum += current_sum

print(f"The sum is: {total_sum}")
```

```
Enter the value of n: 3
The sum is: 10
```

06) WAP to print Multiplication Table up to n

In [7]:
```
m = int(input("Enter table number : "))
n = int(input("Enter number : "))

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

```
Enter table number : 12
Enter number : 20
12 X 1 = 12
12 X 2 = 24
12 X 3 = 36
12 X 4 = 48
12 X 5 = 60
12 X 6 = 72
12 X 7 = 84
12 X 8 = 96
12 X 9 = 108
12 X 10 = 120
12 X 11 = 132
12 X 12 = 144
12 X 13 = 156
12 X 14 = 168
12 X 15 = 180
12 X 16 = 192
12 X 17 = 204
12 X 18 = 216
12 X 19 = 228
12 X 20 = 240
```

In [ ]:
```

```