Darshan UNIVERSITY

योग: कर्मसु कौशलम्

Python Programming - 2101CS405

Lab - 3

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for and while loop

01) WAP to print 1 to 10

In [7]:
```
print("Using for loop")
for i in range(1,11):
    print(i)

print("\nUsing While loop")
j = 1
while j<11:
    print(j)
    j+=1
```

```
Using for loop
1
2
3
4
5
6
7
8
9
10

Using While loop
1
2
3
4
5
6
7
8
9
10
```

02) WAP to print 1 to n

In [9]:
```
n = int(input("Enter n: "))
for i in range(1, n+1):
    print(i)
```

```
1
2
3
4
5
6
```

03) WAP to print odd numbers between 1 to n

In [11]:
```
n = int(input("Enter n: "))
for i in range(1, n+1):
    if(not i%2==0):
        print(i)
```

```
1
3
5
7
```

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

In [12]:
```
m = int(input("Enter first number: "));
n = int(input("Enter second number: "));
for i in range(m, n+1):
    if(i%2==0 and i%3!=0):
        print(i)
```

```
8
10
14
16
```

05) WAP to print sum of 1 to n numbers

In [13]:
```
n = int(input("Enter n: "));
sum = 0;
for i in range(1, n+1):
    sum += i
print("Sum is: ",sum)
```

```
Sum is:  55
```

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

In [15]:
```
n = int(input("Enter n: "));
sum = 0;
for i in range(1, n+1):
    sum += i*i
print("Sum is: ",sum);
```

```
Sum is:  385
```

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

In [16]:
```
n = int(input("Enter n: "));
sum = 0;
for i in range(1, n+1):
    if i%2==0:
        sum -= i
    else:
        sum += i
print("Sum is: ", sum)
```

```
Sum is:  -5
```

08) WAP to print multiplication table of given number.

In [18]:
```
n = int(input("Enter n: "))
for i in range(1, 11):
    print(n,' x ', i,' = ', n*i)
```

```
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 [23]:
```
n = int(input("Enter n: "))
fac = 1;
for i in range(1, n+1):
    fac *= i
print("Factorial is: ",fac)
```

```
Factorial is:  120
```

10) WAP to find factors of the given number

In [26]:
```
n = int(input("Enter n: "))
for i in range(1, n+1):
    if n%i==0:
        print(i,end=", ")
```

```
1, 2, 3, 4, 6, 12,
```

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

In [76]:
```
n = int(input("Enter n: "))
isPrime = bool(True);
for i in range(2, n):
    if n%i==0:
        isPrime = False
        break
if isPrime:
    print("Number is prime ",n);
else:
    print("Number is not prime ", n);
```

```
Number is prime  5
```

12) WAP to print sum of digits of given number

In [51]:
```
n = int(input("Enter number: "))
sum = 0
while n!=0:
    sum += int(n%10)
    n //= 10
print("Sum of digits is: ", sum)
```

```
Sum of digits is:  15
```

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

In [55]:
```
n = int(input("Enter number: "))
reverseN = 0
forCheking = n
while n!=0:
    reverseN = (reverseN*10 + int(n%10))
    n //= 10
if reverseN==forCheking:
    print("Number is palindrome")
```

```
else:
    print("Number is not palindrome")
```

```
Number is palindrome
```

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

In [65]:
```
import math
n = int(input("Enter number: "))
noOfDigits=0
copy1 = n
copy2 = n
chekAram = 0
while n!=0:
    noOfDigits+=1;
    n //=10
while copy1!=0:
    chekAram += int(math.pow(int(copy1%10), noOfDigits))
    copy1//=10
if copy2 == chekAram:
    print("Number is Armstrong")
else:
    print("Number is not Armstrong")
```

```
Number is Armstrong
```

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

In [77]:
```
m = int(input("Enter m: "))
n = int(input("Enter n: "))

for i in range(m, n):
    isPrime = bool(True)
    for j in range(2, i):
        if i%j==0:
            isPrime = False
            break
    if isPrime:
        print(i, end=" ")
```

```
5 7 11 13 17
```

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

In [82]:
```
x = int(input("Enter x: "))
y = int(input("Enter y: "))
ans = 1
for i in range(1, y+1):
    ans *= x;
print("X resto y is: ",ans)
```

```
X resto y is:  216
```

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

[Sum of factors including 1 excluding number itself]

In [96]:
```
n = int(input("Enter number: "))
cheakAns = 0
for i in range(1, n):
    if n%i==0:
        cheakAns+=i
if cheakAns==n:
    print("Number is perfect")
else:
    print("Number is not perfect")
```

```
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 [98]:
```
n = int(input("Enter number: "))
sum = 0;
for i in range(1, n+1):
    for j in range(1, i+1):
        sum+=j
print("Sum is: ",sum)
```

```
Sum is:  35
```

06) WAP to print Multiplication Table up to n

In [101…
```
n = int(input("Enter number: "))
for i in range(1, n+1):
    print("\n ",i," Table")
    for j in range(1, 11):
        print(i,' x ',j, ' = ',i*j)
```

```
  1  Table
1  x  1  =  1
1  x  2  =  2
1  x  3  =  3
1  x  4  =  4
1  x  5  =  5
1  x  6  =  6
1  x  7  =  7
1  x  8  =  8
1  x  9  =  9
1  x  10  =  10

  2  Table
2  x  1  =  2
2  x  2  =  4
2  x  3  =  6
2  x  4  =  8
2  x  5  =  10
2  x  6  =  12
2  x  7  =  14
2  x  8  =  16
2  x  9  =  18
2  x  10  =  20

  3  Table
3  x  1  =  3
3  x  2  =  6
3  x  3  =  9
3  x  4  =  12
3  x  5  =  15
3  x  6  =  18
3  x  7  =  21
3  x  8  =  24
3  x  9  =  27
3  x  10  =  30

  4  Table
4  x  1  =  4
4  x  2  =  8
4  x  3  =  12
4  x  4  =  16
4  x  5  =  20
4  x  6  =  24
4  x  7  =  28
4  x  8  =  32
4  x  9  =  36
4  x  10  =  40

  5  Table
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 [ ]: