

Loop Statement

In [1]:

```
# Loops in python -> FOR LOOP and WHILE LOOP
```

```
s = "nikhil"  
for i in s:  
    print(i)
```

```
n  
i  
k  
h  
i  
l
```

In [2]:

```
s = "nikhil"  
for _ in s:  
    print(_)
```

```
n  
i  
k  
h  
i  
l
```

In [4]:

```
l=[1,2,3,4,5,6]  
for i in l:  
    print("list item",i,":",i)
```

```
list item 1 : 1  
list item 2 : 2  
list item 3 : 3  
list item 4 : 4  
list item 5 : 5  
list item 6 : 6
```

In [5]:

```
# implementing for loop using range f()
```

```
for i in range(0,5):  
    print(i)
```

```
0  
1  
2  
3  
4
```

In [13]:

```
# print factorial of a given no.  
  
n=int(input("Enter a no. :"))  
f=1  
if n==0 or n==1:  
    f=1  
else:  
    for i in range(1,n+1):  
        f*=i  
print("factorial of",n,":",f)
```

Enter a no. :7
factorial of 7 : 5040

In [14]:

```
n=int(input("Enter a no. :"))  
f=1  
for i in range(1,n+1):  
    f*=i  
print("factorial of",n,":",f)
```

Enter a no. :5
factorial of 5 : 120

```
#      Nesting of For loops
```

In [15]:

```
for i in range(0,4):  
    for j in range(0,5):  
        print("i:",i,"j:",j)
```

```
i: 0 j: 0  
i: 0 j: 1  
i: 0 j: 2  
i: 0 j: 3  
i: 0 j: 4  
i: 1 j: 0  
i: 1 j: 1  
i: 1 j: 2  
i: 1 j: 3  
i: 1 j: 4  
i: 2 j: 0  
i: 2 j: 1  
i: 2 j: 2  
i: 2 j: 3  
i: 2 j: 4  
i: 3 j: 0  
i: 3 j: 1  
i: 3 j: 2  
i: 3 j: 3  
i: 3 j: 4
```

In [4]:

```
n=int(input("Enter a no. :"))  
  
for i in range(1,11):  
    print(n,"X",i,"=",n*i)
```

Enter a no. :5

```
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 [5]:

```
n=int(input("Enter a no. :"))  
  
for i in range(2,n+1):  
    for j in range(1,11):  
        print(i,"X",j,"=",j*i)  
    print()
```

Enter a no. :3

```
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 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
```

In [3]:

```
n=int(input("Enter a no. :"))

for i in range(1,11):
    for j in range(2,n+1):
        print(j,"X",i,"=",j*i,end="")
        if j*i<=9:
            print(end=" | ")
        elif i==10:
            print(end=" | ")
        else:
            print(end=" | ")
    print()
```

Enter a no. :6

2 X 1 = 2		3 X 1 = 3		4 X 1 = 4		5 X 1 = 5		6 X 1 = 6	
2 X 2 = 4		3 X 2 = 6		4 X 2 = 8		5 X 2 = 10		6 X 2 = 12	
2 X 3 = 6		3 X 3 = 9		4 X 3 = 12		5 X 3 = 15		6 X 3 = 18	
2 X 4 = 8		3 X 4 = 12		4 X 4 = 16		5 X 4 = 20		6 X 4 = 24	
2 X 5 = 10		3 X 5 = 15		4 X 5 = 20		5 X 5 = 25		6 X 5 = 30	
2 X 6 = 12		3 X 6 = 18		4 X 6 = 24		5 X 6 = 30		6 X 6 = 36	
2 X 7 = 14		3 X 7 = 21		4 X 7 = 28		5 X 7 = 35		6 X 7 = 42	
2 X 8 = 16		3 X 8 = 24		4 X 8 = 32		5 X 8 = 40		6 X 8 = 48	
2 X 9 = 18		3 X 9 = 27		4 X 9 = 36		5 X 9 = 45		6 X 9 = 54	
2 X 10 = 20		3 X 10 = 30		4 X 10 = 40		5 X 10 = 50		6 X 10 = 60	

While loop

In [34]:

```
# while loop
# x=True
# while x:    # infinite loop
#     print(x)
c =0
while c<7:
    print(c)
    c+=1  # updation (increment/decrement) is important
```

0
1
2
3
4
5
6

Break and Continue Statement

In [38]:

```
# break statement terminates the loop if certain condition is fulfilled
per=[10,20,30,40,50,777,60,70]
for i in per:
    if i<100:
        print(i)
    else:
        break
print("End of program")
```

```
10
20
30
40
50
End of program
```

In [40]:

```
# Continue statement carry out(terminates) from the iteration if certain condition is fulfilled
per=[10,20,30,40,50,777,60,70]
for i in per:
    if i<100:
        print(i)
    else:
        continue
print("End of program")
```

```
10
20
30
40
50
60
70
End of program
```

In [43]:

```
per=[10,20,30,40,50,777,60,70]
for i in per:
    if i>100:
        print("wrong per ->",end=" ")
        print(i)
    else:
        print(i)
print("End of program")
```

```
10
20
30
40
50
wrong per -> 777
60
70
End of program
```

In [46]:

```
per=[10,20,30,40,50,777,60,70]
for i in per:
    if i>100:
        print("wrong per")
        continue
    print(i)
print("End of program")
```

```
10
20
30
40
50
wrong per
60
70
End of program
```

In [47]:

```
per=[10,20,30,40,50,777,60,70]
for i in per:
    if i>100:
        print("wrong per")
        break
    print(i)
print("End of program")
```

```
10
20
30
40
50
wrong per
End of program
```

Pass Statement

In [50]:

```
#pass
i=input("Enetr a value:")
if i<8:

else:
    print("Wrong value")
```

Cell In[50], line 5

else:

^

IndentationError: expected an indented block after 'if' statement on line 3

In [55]:

```
#pass
i=int(input("Enetr a value:"))
if i<8:
    pass
else:
    print("Wrong value")
```

Enetr a value:5

In [56]:

```
#pass
i=int(input("Enetr a value:"))
if i<8:
    pass
else:
    print("Wrong value")
```

Enetr a value:88
Wrong value

```
### FOR ELSE (it is a construct)
```

In [64]:

```
# when for loops condition is false then else part is executed

n=int(input("Enter a number:"))
for i in range(0,n-1):
    if n<=0:
        print(i)
    else:
        break
else:
    print("End of program")
```

Enter a number:-7
End of program

In []: