Geeky Shows YT Channel

for loops

range() functions

***range() function is used to generate a sequence of integers starting from zero, as default,increment by 1 by default , till j-1.**
Syntax:-
range(start,stop,stepsize)

In [1]:

```
range(10)          #range(j) = 0,1,2,3,4,5,.....j-1
```

Out[1]:

```
range(0, 10)
```

In [2]:

```
range(1,10)        #range(i,j) = i,i+1,i+2.....j-1
```

Out[2]:

```
range(1, 10)
```

In [3]:

```
print(range(1,10,2))     #range(i,j,k) = i,i+k,i+2k,i+3k.....j-1
```

```
range(1, 10, 2)
```

In [4]:

```
print(range(-1,-10,-2))      # -1,-3,-5,-7
```

```
range(-1, -10, -2)
```

In [5]:

```
print(range(1,0,-1))       # 10,9,8,7,6,5........1
```

```
range(1, 0, -1)
```

Rules:-

1. **all arguments must be integers,(+ve or -ve)**
2. **we can't pass strings, float point numbers,**
3. **step size can't be zero.**
4. **index starts from zero.**

In [6]:

```
a = range(5)
print(a[0])
print(a[1])
print(a[2])
print(a[3])
print(a[4])
```

```
0
1
2
3
4
```

In [7]:

```
a = range(1,5)
print(a[0])
print(a[1])
print(a[2])
print(a[3])
```

```
1
2
3
4
```

In [8]:

```
a = range(1,10,2)
print(a[0])
print(a[1])
print(a[2])
print(a[3])
            # range() function retruns an immutable sequence type, which behave as a list
.
```

```
1
3
5
7
```

In [9]:

```
list(range(5)) # we can convert an immutable sequence type(object) in list.
```

Out[9]:

```
[0, 1, 2, 3, 4]
```

In [10]:

```
a = range(-1,-10,-2)
print(a[0])
print(a[1])
print(a[2])
print(a[3])
```

```
-1
-3
-5
-7
```

In [11]:

```
a = range(5,0,-1)
print(a[0])
print(a[1])
print(a[2])
print(a[3])
print(a[4])
```

```
5
4
3
2
1
```

For LOOPS

***The for loop is used to iterate over elements of sequence such as strings,list,tuple etc.**

Syntax:- for var in sequence: statements Rest of the Code # for & in should be as it is., var and sequence can be changed.

In [12]:

```
str = "GeekyShows"
for i in str:
    print(i)
print("rest of the code")
                        # for loop str se ek character uthata hai phr usko i mai daalta
hai,
                        # phr i ko print karta hai , phr for loop wapis execute hota hai
,
                        # phr loop ek character utahata ,i mai daalta hai and i ko print
krta h,
                        # and it continious so on,till the characters ends.
```

```
G
e
e
k
y
S
h
o
w
s
rest of the code
```

In [13]:

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

```
0
1
2
3
4
```

In [14]:

```
a = range(5)
for i in a:
    print(i)
```

```
0
1
2
3
4
```

In [15]:

```
a = range(1,5)
for i in a:
    print(i)
```

```
1
2
3
4
```

In [16]:

```
a = range(1,10,2)
for i in a:
    print(i)
```

```
1
3
5
7
9
```

In [17]:

```
a = range(-1,-10,-2)
for i in a:
    print(i)
```

```
-1
-3
-5
-7
-9
```

In [18]:

```
a = range(10,0,-2)
for i in a:
    print(i)
```

```
10
8
6
4
2
```

using range () to iterate through string in for loop

- **but the problem is that range only iterate through integer, so we use:- len()**

In [19]:

```
str = "GeekyShows"
n = len(str)
for i in range(n):
    print(f'{i} = {str[i]}')
print("rest of the code")
```

```
0 = G
1 = e
2 = e
3 = k
4 = y
5 = S
6 = h
7 = o
8 = w
9 = s
rest of the code
```

In [20]:

```
str = "Geeky"
for i in range(len(str)):
    print(f'{i} = {str[i]}')
print("rest of the code")
```

```
0 = G
1 = e
2 = e
3 = k
4 = y
rest of the code
```

In [21]:

```
str = "Geeky"
for i in range(len(str)):
    print(f'{str[i]}')
print("rest of the code")
```

```
G
e
e
k
y
rest of the code
```

For loop with Else

- **The else statement will always get executed irrespective of loop execute or not**

In [22]:

```
st = "geeky"
for i in st:
    print(i)
else:
    print("else always gets executed")
print('rest of the code')
```

```
g
e
e
k
y
else always gets executed
rest of the code
```

In [23]:

```
st = ""
for i in st:
    print(i)
else:
    print("else always gets executed")
print('rest of the code')              # loop nhi challa, becoz their is no element presen
t to iterate
```

```
else always gets executed
rest of the code
```

Nested for Loop

***loop inside a loop is called nested loop**

Syntax:- for i in range(n): statement_1 ≡-≡-≡----- for j in range(y): |___\ Same Statement, can be written anywhere according to condition statement_2 | / statement_1 ----------

In [24]:

```
for i in range(2):
    print("outer loop"+" --",i)
```

```
    for j in range(3):
        print("inner loop   ", j)
else:
    print("else part")
print("rest of the code")
```

```
outer loop -- 0
inner loop    0
inner loop    1
inner loop    2
outer loop -- 1
inner loop    0
inner loop    1
inner loop    2
else part
rest of the code
```

In [25]:

```
for i in range(2):
    for j in range(3):
        print("inner loop   ", j)
    print("outer loop"+" --",i)
else:
    print("else part")
print("rest of the code")
```

```
inner loop    0
inner loop    1
inner loop    2
outer loop -- 0
inner loop    0
inner loop    1
inner loop    2
outer loop -- 1
else part
rest of the code
```

Break Statement

- **Break Statement is used to jump out of loop to process next statement in the program**

Syntax:- while condition: if(condition): break Rest of Code

Continue Statement

***continue statement is use in a loop to go back to the beginning of loop.**

Syntax:- while condition: if(condition): continue Rest of the Code

Break Statement examples

In [26]:

```
for i in range(10):
    if (i == 5):
        break
    print(i)
print("Rest Of the Code")
```

```
0
1
2
3
4
Rest Of the Code
```

In [27]:

```
for i in range(10):
    print(i)
    if (i == 5):
        break
print("Rest Of the Code")
```

```
0
1
2
3
4
5
Rest Of the Code
```

Continue Statement Examples

In [28]:

```
for i in range(10):
    if (i == 5):
        continue
    print(i)
print("Rest Of the Code")
        # continue statement code ko wapis upper loop ke paas bhej deta hai,it doesn't r
eset i value.
```

```
0
1
2
3
4
6
7
8
9
Rest Of the Code
```

In [29]:

```
for i in range(10):
    print(i)
    if (i == 5):
        continue
print("Rest Of the Code")
                        # yaha tum bol sakte ho ki bhai loop yaha pr infinite loop mai
kyu convert
                        # nhi hua,since print(i), ke baad humne continue likha hai toh
isko wapis
                       # upper jaana chahiye, actually yeh wapis upper gya, lekin koi f
aayda nhi hua,
                    # becoz ab range ki saari value iteraye ho gyi hai, and list khal;i
ho chuki hai.
```

```
0
1
2
3
4
5
6
7
8
9
Rest Of the Code
```

Pass Statement

***pass statement does nothing,it is used with if,else statements and loops.**

In [30]:

```
if 5 >2:
    pass
else:
    print("else is executed")
print("rest of the code")
```

```
rest of the code
```

In [31]:

```
if 5<2:
    pass
else:
    print("else is executed")
print("rest of the code")
```

```
else is executed
rest of the code
```

In [32]:

```
i = 1
while i<= 10:
    if(i==5):
        pass
    print(i)
    i+=1
print("rest of the code")
```

```
1
2
3
4
5
6
7
8
9
10
rest of the code
```

Accessing List Via For Loops(iterating through list)

In [33]:

```
a = [10,20,30,40,50]
print(a[0])
```

```
10
```

In [34]:

```
a = [10,20,30,40,50,"Aadil"]
for elements in a:
    print(elements)
```

```
10
20
30
40
50
Aadil
```

In [35]:

```
a = [10,20,-30,40,50,"Aadil"]
for i in range(len(a)):
    print(a[i])
```

```
10
20
-30
40
50
Aadil
```

In [36]:

```
a = [10,20,-30,40,50,"Aadil"]
n = len(a)
for i in range(n):
    print(a[i])
```

```
10
20
-30
40
50
Aadil
```

In [37]:

```
a = [10,20,-30,40,50,"Aadil"]
n = len(a)
for i in range(n):
    print(i,"=",a[i])
```

```
0 = 10
1 = 20
2 = -30
3 = 40
4 = 50
5 = Aadil
```

Accessing array using for loop

In [38]:

```
from array import *
```

In [39]:

```
stu_rol = ('i',[101,102,103,104,105])
# without index:-
for i in stu_rol:
    print(i)
```

```
i
[101, 102, 103, 104, 105]
```

In [40]:

```
stu_rol = ('i',[101,102,103,104,105])
# with index:-
for i in range(len(stu_rol)):
    print(i, stu_rol[i])
```

```
0 i
1 [101, 102, 103, 104, 105]
```

In [41]:

```
for i in stu_rol[1]:
    print(i)
```

```
101
102
103
104
105
```

Enumerate Function

In [46]:

```
lst=["bhindi","aloo","chopstick","chowmin"]

i = 1
for item in lst:
    if i%2 is not 0:                        # i%2!=0
        print(f'Jarvis pls buy {item}')
    i+=1
```

```
Jarvis pls buy bhindi
Jarvis pls buy chopstick
```

In [48]:

```
a = ['codewithharry',"t-series","mixer-grinder","pen"]
i = 0
for item in a:
    i = i + 1
    if i%2==0:
        print(item)
```

```
t-series
pen
```

In [44]:

```
lst=["bhindi","aloo","chopstick","chowmin"]
for index, item in enumerate(lst):
    if index%2==0:
        print(f"jarvis pls buy {item}")
```

```
jarvis pls buy bhindi
jarvis pls buy chopstick
```

In [49]:

```
a = ['codewithharry',"t-series","mixer-grinder","pen"]
for i, item in enumerate(a):
    if (i+1)%2==0:
        print(item)
```

```
t-series
pen
```