Today's topics

- for loop
- iterables
- iter function
- range function
- next function
- control statements:break,continue and pass

What is for loop?

A for loop is used to repeat a block of code for each item in a sequence (like a list,string,tuple,etc.).

Basic Syntax:

for variable in sequence:

code block to execute

Common Uses

- iterating over elements in a list,tuple,set or dictionary
- repeating code a fixed number of times using range()
- processing string or files by line

In [1]:

```python
# usecase
print(1)
print(2)
print(3)
print(4)
```

```
1
2
3
4
```

ITERABLES / SEQUENCE

Definition:

An iterable in python is any object capable of returning its elements one at a time , allowing it to be used in a loop or with functions like iter() and next().

- list
- sets
- dictionaries
- str
- tuples

```
In [ ]: # syntax
        for variable in iterable:
            statements
```

```
In [4]: l1=['aqram','harsh','anushka','prince']
```

```
In [5]: # for loop
        for i in l1:
            print(i)
```

```
aqram
harsh
anushka
prince
```

```
In [6]: # sets
        s1={'timeless','tum hi ho','excuses',295,'lover'}
        s1
        for i in s1:
            print(i)
```

```
timeless
lover
excuses
tum hi ho
295
```

```
In [8]: # tuples
        t1=('gulab jamun','kaju katli','gulab jamun','gevar','laddu','imarti')
```

```
In [9]: for i in t1:
            print(i)
```

```
gulab jamun
kaju katli
gulab jamun
gevar
laddu
imarti
```

In [12]:

```python
# dictionaries
dict1={'name':'varsha',
       'course':'data analytics',
       'voice pitch':'very low',
       'age':21}
```

In [14]:

```python
for i,j in dict1.items():
    print(i,'\t\t',j)
```

```
name                  varsha
course                  data analytics
voice pitch                  very low
age                  21
```

In [16]:

```python
dict1.items()
```

Out[16]:

```
dict_items([('name', 'varsha'), ('course', 'data analytics'), ('voice pitch',
'very low'), ('age', 21)])
```

In [19]:

```python
# stringa
str1='anushka'
#str1[0]
#str1[1]

for i in str1:
    print(i)
```

```
a
n
u
s
h
k
a
```

In [21]:

```python
l1=['aqram','harsh','anushka','prince']

for i in l1:
    print(i) #--> string/nested loops
    for j in i:
        print(j)
```

```
aqram
a
q
r
a
m
harsh
h
a
r
s
h
anushka
a
n
u
s
h
k
a
prince
p
r
i
n
c
e
```

In [22]:

```python
# concept
for i in l1:
    # print(i)
    print('anshu')
```

```
anshu
anshu
anshu
anshu
```

In [23]:

```python
# problem statement
# 1-10
l1 = [1,2,3,4,5,6,7,8,9,10]
for i in l1:
    print(i)
```

```
1
2
3
4
5
6
7
8
9
10
```

In [28]:

```
# what if 1-100 or 1-1000,1-100000
# range function
# range(start,end,stepsize)
```

In [29]:

```
# typecasting
list(range(1,11))
```

Out[29]:

```
[1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
```

In [30]:

```
for i in range(0,101,10):

    #last value is step size in this case this is 10
    print(i)
```

```
0
10
20
30
40
50
60
70
80
90
100
```

In [31]:

```
for i in range(0,101,1):
    print(i)
```

```
0
1
2
3
4
5
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94
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96
97
98
99
100
```

In [32]:

```python
# 1 parameter
for i in range(5):
    print(i)
```

```
0
1
2
3
4
```

In [38]:

```
# iter function
l1=[20,31,42,34,55]
m=iter(l1)
```

In [39]:

```
# next function
print(next(m))
print(next(m))
print(next(m))
print(next(m))
print(next(m))
```

```
20
31
42
34
55
```

In [44]:

```
# pass
# continue
# break
for i in range (1,101):
    # future reference
    pass
```

In [45]:

```
# break
for i in range(1,6):
    print(i)
    if i==3:
        break
```

```
1
2
3
```

In [46]:

```
# continue
for i in range(1,6):
    if i==3:
        continue
    print(i)
    print('-'*20)
```

```
1
--------------------
2
--------------------
4
--------------------
5
--------------------
```

In [ ]:

```
```