

Enumerate() in Python

Often, when dealing with iterators, we also get a need to keep a count of iterations. Python eases the programmers' task by providing a built-in function `enumerate()` for this task.

`Enumerate()` method adds a counter to an iterable and returns it in the form of an enumerating object. This enumerated object can then be used directly for loops or converted into a list of tuples using the `list()` method.

```
enumerate(iterable, start=0)
```

Parameters:

Iterable: any object that supports iteration

Start: the index value from which the counter is to be started, by default it is 0

● Python3

```
#python
# Python program to
illustrate
# enumerate function
l1 = ["eat", "sleep", "repeat"]
s1 = "geek"

# creating enumerate objects
obj1 = enumerate(l1)
obj2 = enumerate(s1)

print ("Return
type:", type(obj1))
print (list(enumerate(l1)))
```

```
# changing start index to 2
from 0
print (list(enumerate(s1,2)))
```

Output:

```
Return type: < type 'enumerate' >
[(0, 'eat'), (1, 'sleep'), (2, 'repeat')]
[(2, 'g'), (3, 'e'), (4, 'e'), (5, 'k')]
```

Using enumerate in loops :

Enumerate function is just like the for function only with a couple of changes.

1. Instead of one iterator, the enumerate function takes two iterators. One points to the value of the list while the other points to the index of the list.
2. Enumerate function over a list is faster than the for function over the same list.
3. It is convenient to use in a situation where the index of the list is equally important as the value at that particular index.

```
# Python program to illustrate
# enumerate function in loops
l1 = ["eat","sleep","repeat"]

# printing the tuples in object directly
for ele in enumerate(l1):
    print (ele)
```

Output:

```
(0, 'eat')
(1, 'sleep')
(2, 'repeat')
```

```
lst = ['cat', 'bat', 'rat', 'mango', 'football']  
for index, value in enumerate(lst):  
    print('Index of iterator is ', index)  
    print('Value at given index is ', value)
```

```
Index of iterator is 0  
Value at given index is cat  
Index of iterator is 1  
Value at given index is bat  
Index of iterator is 2  
Value at given index is rat  
Index of iterator is 3  
Value at given index is mango  
Index of iterator is 4  
Value at given index is football
```