

Full stack web development using python

map reduce filter



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Agenda

- ① map
- ② reduce
- ③ filter

map

map() function returns a map object (iterable) of the results after applying the given function to each item of a given iterable (list, tuple, etc.)

map(function, iterable)

```
l1 = [1, 2, 3, 4]
```

```
def Square(a)  
    return a*a
```

```
l2 = list(map(Square, l1))  
print(l2)
```

```
[1, 4, 9, 16]
```

reduce

The `reduce(function, iterable)` function is defined in `functools` module

Just like `map` function, argument function is applied to all the element of argument iterable in `reduce` method.

`map` returns an iterable, where as `reduce` returns an accumulated single value.

```
l1 = [1, 2, 3, 4]
```

```
def multiply(a, b):  
    return a * b
```

```
r = reduce(multiply, l1)  
print(r)
```

filter

The filter method filters a given iterable with the help of a function that tests each element in the iterable to be true or not

`filter (function, iterable)`

```
l1 = [2, 3, 5, 6, 7, 9, 11, 13, 15]
```

```
def checkPrime(n):
```

```
    for i in range(2, n):
```

```
        if n % i == 0:
```

```
            return False
```

```
    return True
```

```
filteredList = filter(checkPrime, l1)
```

```
print(filteredList)
```

```
[2, 3, 5, 7, 11, 13]
```