인공지능프로그래밍

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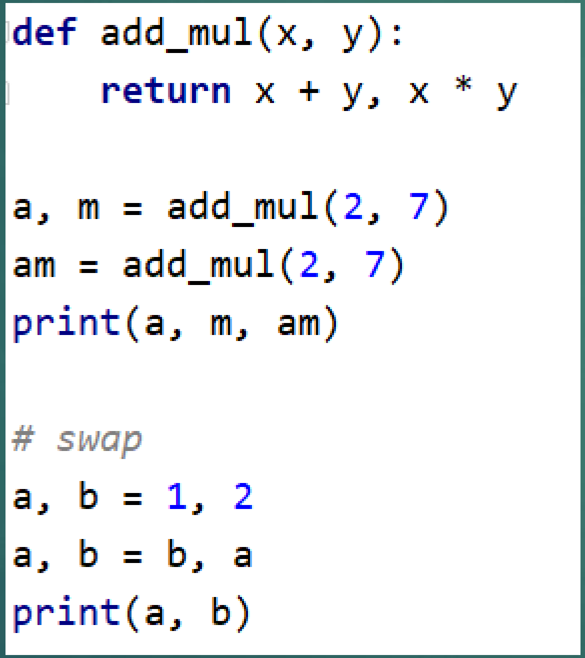
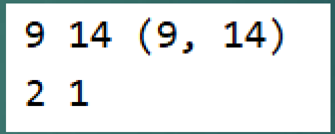
https://github.com/ggorr/Machine-Learning/tree/master/Python

16장. 더 많은 것들

16.1. 튜플 넘기기

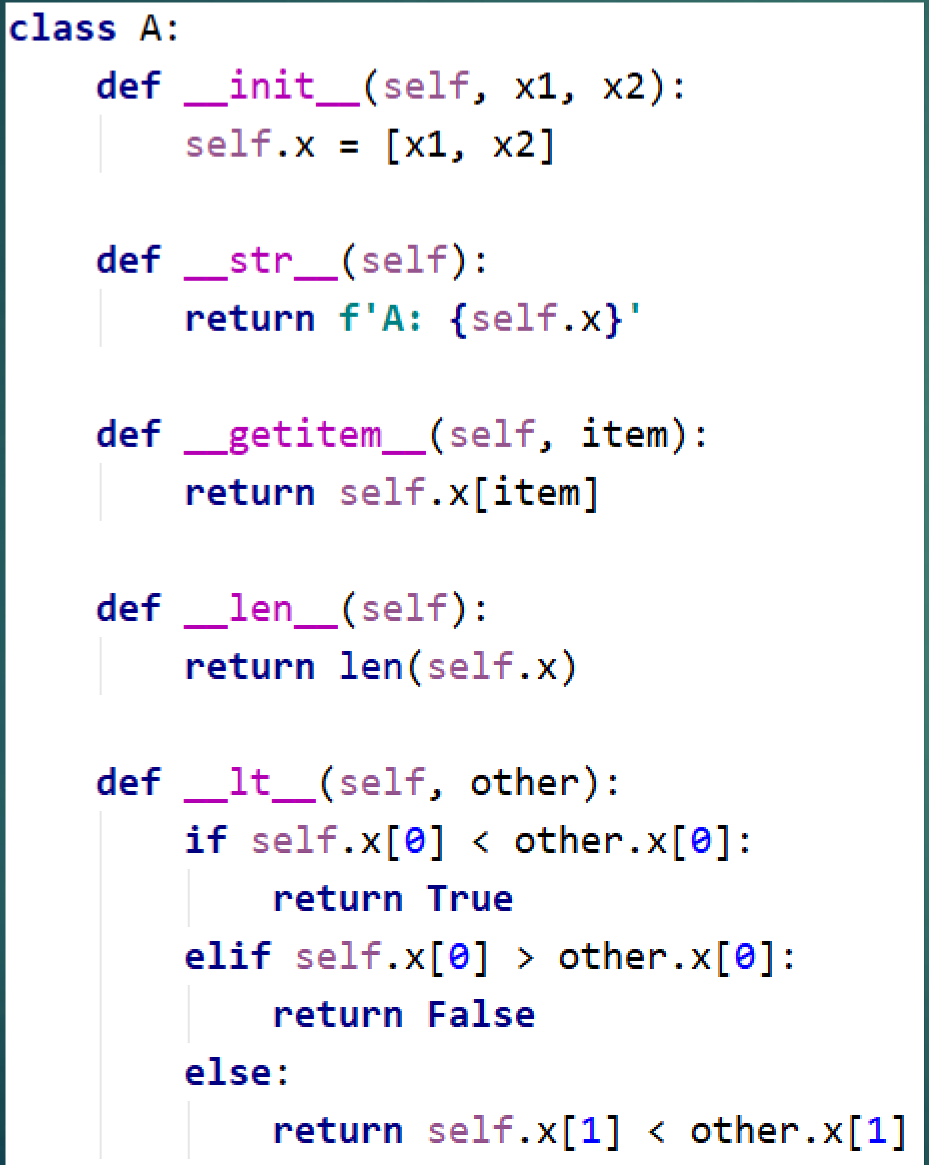


```python
def add_mul(x, y):
    return x + y, x * y

a, m = add_mul(2, 7)
am = add_mul(2, 7)
print(a, m, am)

# swap
a, b = 1, 2
a, b = b, a
print(a, b)
```

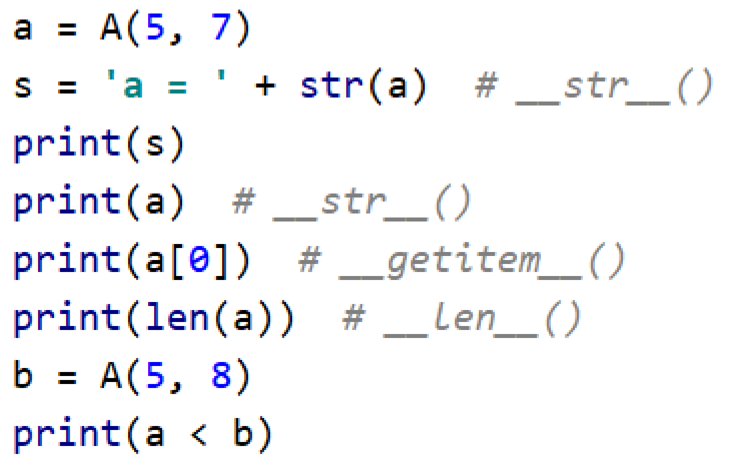


```
9 14 (9, 14)
2 1
```

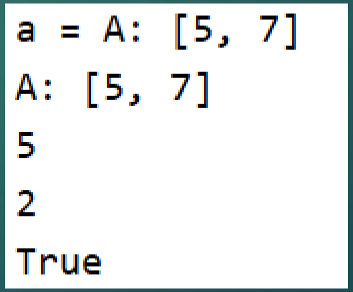
16.2. 특별한 메소드들



```python
class A:
    def __init__(self, x1, x2):
        self.x = [x1, x2]

    def __str__(self):
        return f'A: {self.x}'

    def __getitem__(self, item):
        return self.x[item]

    def __len__(self):
        return len(self.x)

    def __lt__(self, other):
        if self.x[0] < other.x[0]:
            return True
        elif self.x[0] > other.x[0]:
            return False
        else:
            return self.x[1] < other.x[1]
```

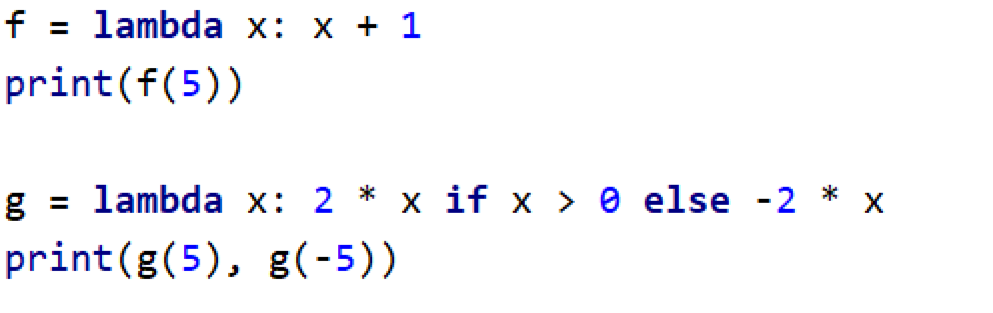


```python
a = A(5, 7)
s = 'a = ' + str(a)  # __str__()
print(s)
print(a)  # __str__()
print(a[0])  # __getitem__()
print(len(a))  # __len__()
b = A(5, 8)
print(a < b)
```

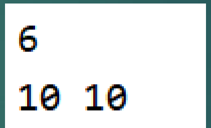


```
a = A: [5, 7]
A: [5, 7]
5
2
True
```

16.4. lambda 식

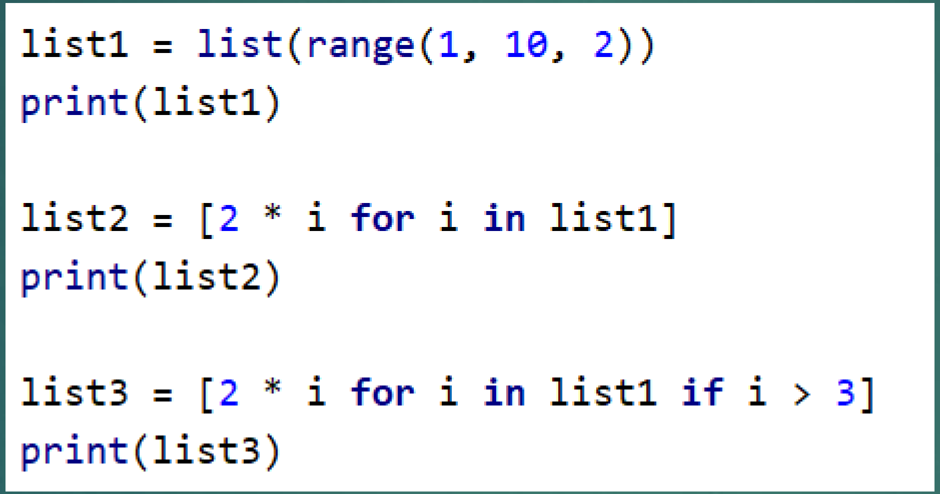


```python
f = lambda x: x + 1
print(f(5))

g = lambda x: 2 * x if x > 0 else -2 * x
print(g(5), g(-5))
```

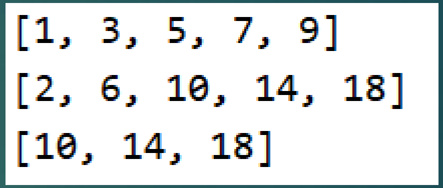


```
6
10 10
```

16.5. 리스트 축약(Comprehension)

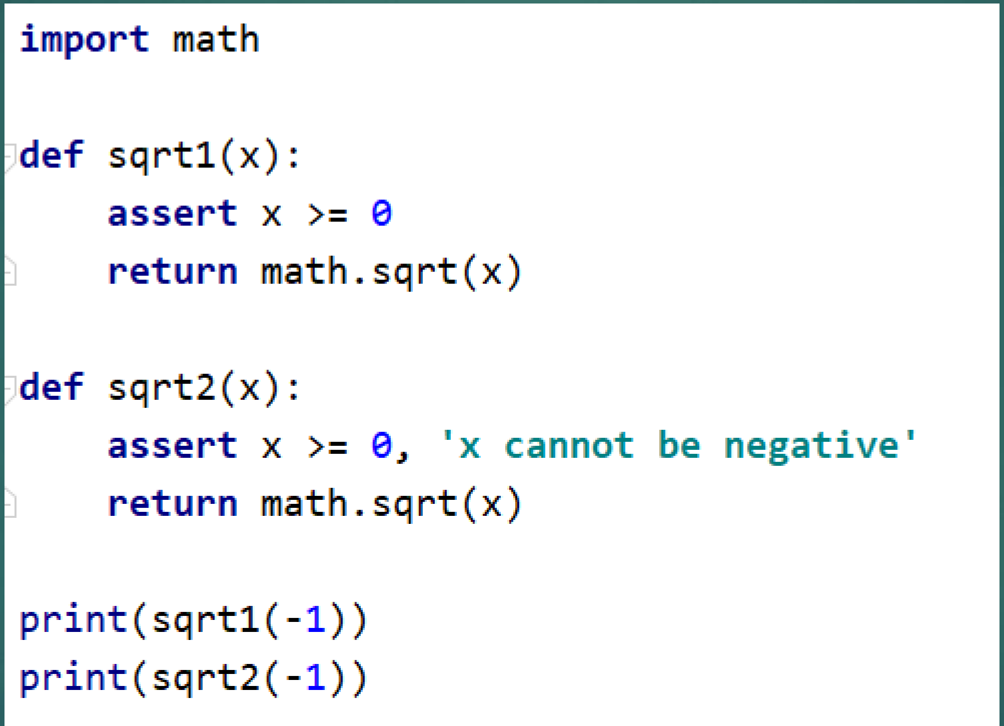


```python
list1 = list(range(1, 10, 2))
print(list1)

list2 = [2 * i for i in list1]
print(list2)

list3 = [2 * i for i in list1 if i > 3]
print(list3)
```



```
[1, 3, 5, 7, 9]
[2, 6, 10, 14, 18]
[10, 14, 18]
```

16.7. assert



```
import math

def sqrt1(x):
    assert x >= 0
    return math.sqrt(x)

def sqrt2(x):
    assert x >= 0, 'x cannot be negative'
    return math.sqrt(x)

print(sqrt1(-1))
print(sqrt2(-1))
```