

# Python Programming

유용한 내장 클래스



권기웅



# 1. 문자열 - str

## 1.1 메소드 확인

```
Python 3.6.3 Shell
File Edit Shell Debug Options Window Help

Python 3.6.3 (v3.6.3:2c5fed8, Oct 3 2017, 18:11:49) [MS
Type "copyright", "credits" or "license()" for more
>>>

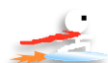
===== RESTART: D:/workspacePython/usefulClass.py (3.6.3) =====
>>> dir(str)
['__add__', '__class__', '__delattr__', '__getitem__', '__getiter__', '__len__', '__lt__', '__mod__', '__mul__', '__ne__', '__new__', '__reduce__', '__reduce_ex__', '__repr__', '__rmul__', '__setattr__', '__sizeof__', '__str__', '__subclasshook__', 'capitalize', 'casefold', 'center', 'count', 'encode', 'endswith', 'expandtabs', 'find', 'format', 'format_map', 'index', 'isalnum', 'isalpha', 'isascii', 'isdecimal', 'isdigit', 'isidentifier', 'islower', 'isnumeric', 'isprintable', 'isspace', 'istitle', 'isupper', 'join', 'ljust', 'lower', 'lstrip', 'maketrans', 'partition', 'replace', 'rstrip', 'split', 'splitlines', 'startswith', 'strip', 'swapcase', 'title', 'translate', 'upper']
>>>
```

## 1.2 대소문자 관련

```
Python 3.6.3 Shell
File Edit Shell Debug Options Window Help

Python 3.6.3 (v3.6.3:2c5fed8, Oct 3 2017, 18:11:49) [MS
Type "copyright", "credits" or "license()" for more
>>>

===== RESTART: D:/workspacePython/usefulClass.py (3.6.3) =====
>>> txt = "i am a Boy."
>>> print(txt.capitalize()) # 문장 대소문자 정리
>>> print(txt.upper()) # 대문자로
>>> print(txt.lower()) # 소문자로
>>> print(txt.swapcase()) # 대소문자 전환
>>> print(txt.title()) # 단어 첫글자 대문자로
```



## 1.3 찾기/바꾸기

```
Python 3.6.3 Shell
File Edit Shell Debug Options Window Help
Python 3.6.3 (v3.6.3:2c5fed8, Oct 3 2017, 18:11:49) [MSC v.1900 64 bit (AMD64)] on
Type "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:/workspacePython/usefulClass.py =====
2
1
-1
-1
you are a Boy.
>>>

usefulClass.py - D:/workspacePython/usefulClass.py (3.6.3)
File Edit Format Run Options Window Help
txt = "i am a Boy."

print(txt.count("a")) # a가 몇번 나오나
print(txt.count("a", 0, 5)) # 0~5번째 중에 a가 몇번 나오나

print(txt.find("boy")) # boy가 몇번째에 나오나
print(txt.find("girl")) # 못찾으면 -1

print(txt.replace("i am", "you are")) # i am을 찾아 you are로 바꾸기
```

## 1.4 확인하기

```
Python 3.6.3 Shell
File Edit Shell Debug Options Window Help
Python 3.6.3 (v3.6.3:2c5fed8, Oct 3 2017, 18:11:49) [MSC v.1900 64 bit (AMD64)] on
Type "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:/workspacePython/usefulClass.py =====
True
True
True
True
False
False
False
False
>>>

usefulClass.py - D:/workspacePython/usefulClass.py (3.6.3)
File Edit Format Run Options Window Help
txt = "i am a Boy."

print(txt.startswith("i am")) # i am으로 시작하나
print(txt.startswith("am", 2)) # 2번째 글자부터가 am으로 시작하나
print(txt.startswith(("i", "you"))) # i나 you로 시작하나
print(txt.endswith("y.")) # y.으로 끝나나

print(txt.isalnum()) # 알파벳 + 숫자만 있나
print(txt.isalpha()) # 알파벳만 있나
print(txt.islower()) # 소문자만 있나
print(txt.isdigit()) # 숫자만 있나
```

## 1.5 자르기

```
Python 3.6.3 Shell
File Edit Shell Debug Options Window Help
Python 3.6.3 (v3.6.3:2c5fed8, Oct 3 2017, 18:11:49) [MSC v.1900 64 bit (AMD64)] on
Type "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:/workspacePython/usefulClass.py =====
<class 'list'> ['i', 'am', 'a', 'Boy.']
<class 'list'> ['i', 'am', 'a', 'boy.']
>>>

usefulClass.py - D:/workspacePython/usefulClass.py (3.6.3)
File Edit Format Run Options Window Help
txt = "i am a Boy."
l = txt.split(" ") # 구분자로 분리
print(type(l), l)

txt2 = "i\nam\na\nboy."
l2 = txt2.splitlines() # 라인별 분리
print(type(l2), l2)
```



## 2. 숫자

### 2.1 내장함수

```
Python 3.6.3 Shell
File Edit Shell Debug Options Window Help
Python 3.6.3 (v3.6.3:2c5fed8, Oct 3 2017, 18:11:49) [MSC
Type "copyright", "credits" or "license()" for more inform
>>>
===== RESTART: D:/workspacePython/usefulClass.py (3.6.3)
3934.415
3434
-111
111
123
123.42
120.0
>>>

===== RESTART: D:/workspacePython/usefulClass.py (3.6.3)
File Edit Format Run Options Window Help
1 = [10, 30, 39, 123.415, 3434, -111, 409]

print(sum(1)) # 합
print(max(1)) # 최대값
print(min(1)) # 최소값

print(abs(1[5])) # 절대값
print(round(1[3])) # 소수 첫째자리에서 반올림
print(round(1[3], 2)) # 소수 셋째자리에서 반올림
print(round(1[3], -1)) # 일의 자리에서 반올림
```

### 2.2 math 모듈

```
Python 3.6.3 Shell
File Edit Shell Debug Options Window Help
Python 3.6.3 (v3.6.3:2c5fed8, Oct 3 2017, 18:11:49) [MSC
Type "copyright", "credits" or "license()" for more inform
>>>
===== RESTART: D:/workspacePython/usefulClass.py (3.6.3)
3.141592653589793
2.718281828459045
124
123
3628800
3.1622776601683795
>>>

===== RESTART: D:/workspacePython/usefulClass.py (3.6.3)
File Edit Format Run Options Window Help
import math

x = 10
y = 123.415

print(math.pi)
print(math.e)

print(math.ceil(y)) # 올림
print(math.floor(y)) # 내림
print(math.factorial(x)) # !
print(math.sqrt(x)) # 제곱근
```



## 2.3 random 모듈

```
Python 3.6.3 Shell
File Edit Shell Debug Options Window Help
Python 3.6.3 (v3.6.3:2c5fed8, Oct 3 2017, 18:11:49) [MSC v.1900 64 bit (AMD64)] c
Type "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:/workspacePython/usefulClass.py =====
0.03439763961812314
12.592807708197324
17
9.039575693816285
[8, 3, 7, 2, 9]
>>>
usefulClass.py - D:/workspacePython/usefulClass.py (3.6.3)
File Edit Format Run Options Window Help
import random
print(random.random()) # 0 ~ 0.99사이 난수
print(random.uniform(10, 20)) # 두 값 사이 난수
print(random.randint(10, 20)) # 두 값 사이 정수 난수
print(random.gauss(10, 5)) # 평균10, 표준편차5인 정규분포의 난수
print(random.sample(range(1, 10), 5)) # 1 ~ 10 중 중복없이 5개
```



# 3. 날짜

## 3.1 시간날짜

```
Python 3.6.3 Shell
File Edit Shell Debug Options Window Help
Python 3.6.3 (v3.6.3:2c5fed8, Oct 3 2017, 18:11:49) [MSC v.1900 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:/workspacePython/usefulClass.py =====
2017-11-17 23:29:40.708451
2017
11
17
23
29
40
708451
2001-01-02 03:04:05.000006
2001-11-02 03:04:05.000006
>>>
```

```
usefulClass.py - D:/workspacePython/usefulClass.py (3.6.3)
File Edit Format Run Options Window Help
import datetime

now = datetime.datetime.today() # 현재 시간날짜
print(now)

print(now.year)
print(now.month)
print(now.day)
print(now.hour)
print(now.minute)
print(now.second)
print(now.microsecond)

x = datetime.datetime(2001, 1, 2, 3, 4, 5, 6) # 특정 날짜시간
print(x)

y = x.replace(month = 11) # 변경
print(y)
```

## 3.2 시간날짜 계산

```
Python 3.6.3 Shell
File Edit Shell Debug Options Window Help
Python 3.6.3 (v3.6.3:2c5fed8, Oct 3 2017, 18:11:49) [MSC v.1900 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:/workspacePython/usefulClass.py =====
2017-11-17 23:39:47.747340
6530 days, 23:39:47.747340
2017-12-02 20:39:47.747340
>>>
```

```
usefulClass.py - D:/workspacePython/usefulClass.py (3.6.3)
File Edit Format Run Options Window Help
import datetime

now = datetime.datetime.today() # 현재 시간날짜
print(now)

x = datetime.datetime(2000, 1, 1)
print(now - x) # 2000년 1월 1일로부터 현재까지 얼마나 지났나

y = datetime.timedelta(days = 15, hours = -3) # 15일후, 3시간 전
# weeks, days, hours, minutes, seconds, microseconds 사용 가능
print(now + y) # now로 부터 15일후 3시간전
```

