서울사이버대학교 데이터리터러시 10주차 실습 코드

딕셔너리와 집합

- 자주 사용하는 딕셔너리 함수
  - keys()
  - values()
  - del: 삭제
- 자주 사용하는 집합 함수
  - add(): 원소 추가
  - remove(): 원소 삭제

In [1]:
```
a = {0: 10, 1: 20, 2: 30}
```

In [2]:
```
a
```

Out[2]:
```
{0: 10, 1: 20, 2: 30}
```

In [3]:
```
type(a)
```

Out[3]:
```
dict
```

In [4]:
```
a[0]
```

Out[4]:
```
10
```

In [5]:
```
b = {'a': 10, 'b': 20, 'c': 30}
```

In [6]:
```
b
```

Out[6]:
```
{'a': 10, 'b': 20, 'c': 30}
```

In [7]:
```
b['a']
```

Out[7]:
```
10
```

In [8]:
```
b['b']
```

Out[8]:
```
20
```

In [9]:
```
b['c']
```

Out[9]:
```
30
```

In [10]:
```
b.keys()
```

Out[10]:
```
dict_keys(['a', 'b', 'c'])
```

In [11]:
```
b.values()
```

Out[11]:
```
dict_values([10, 20, 30])
```

In [12]:
```
b['d'] = 4
```

In [13]:
```
b
```

Out[13]:
```
{'a': 10, 'b': 20, 'c': 30, 'd': 4}
```

In [14]:
```
b.keys()
```

Out[14]:
```
dict_keys(['a', 'b', 'c', 'd'])
```

In [16]:
```
b.values()
```

Out[16]:
```
dict_values([10, 20, 30, 4])
```

In [17]:
```
del b['c']
```

In [18]:
```
b
```

Out[18]:
```
{'a': 10, 'b': 20, 'd': 4}
```

In [19]:
```
b['e'] = [50, 60, 70]
```

In [20]:
```
b
```

Out[20]:
```
{'a': 10, 'b': 20, 'd': 4, 'e': [50, 60, 70]}
```

In [21]:
```
b['f'] = (100, 200)
```

In [22]:
```
b
```

Out[22]:
```
{'a': 10, 'b': 20, 'd': 4, 'e': [50, 60, 70], 'f': (100, 200)}
```

In [23]:
```
a = {1, 3, 5}
```

In [24]:
```
a
```

Out[24]:
```
{1, 3, 5}
```

In [25]:
```
type(a)
```

Out[25]:
```
set
```

In [26]:
```
a.add(7)
```

In [27]:
```
a
```

Out[27]:
```
{1, 3, 5, 7}
```

In [28]:
```
a.add(5)
```

In [29]:
```
a
```

Out[29]:
```
{1, 3, 5, 7}
```

In [30]:
```
a.remove(5)
```

In [31]:
```
a
```

Out[31]: {1, 3, 7}

In [32]:
```
1 in a
```

Out[32]: True

In [33]:
```
2 in a
```

Out[33]: False

In [34]:
```
2 not in a
```

Out[34]: True

In [35]:
```
1 not in a
```

Out[35]: False

In [36]:
```
b = {1, 2, 4, 6}
```

In [37]:
```
a
```

Out[37]: {1, 3, 7}

In [38]:
```
b
```

Out[38]: {1, 2, 4, 6}

In [39]:
```
a | b
```

Out[39]: {1, 2, 3, 4, 6, 7}

In [40]:
```
a
```

Out[40]: {1, 3, 7}

In [41]:
```
b
```

Out[41]: {1, 2, 4, 6}

In [42]:
```
ab = a | b
```

In [43]:
```
ab
```

Out[43]: {1, 2, 3, 4, 6, 7}

In [44]:
```
type(ab)
```

Out[44]: set

In [45]:
```
a & b
```

Out[45]: {1}

In [46]:
```
abc = a & b
```

In [47]:
```
abc
```

Out[47]: {1}

In [48]:
```
type(abc)
```

Out[48]: set

문자열

- 문자열에서의 연산
  - +: 이어붙이기
  - *: 반복하기
- 자주 사용하는 문자열 함수 1
  - strip(): 앞/뒤 공백 제거
  - split(): 문자열 분리
  - join(): 문자열 병합
- 자주 사용하는 문자열 함수 2
  - lower(): 알파벳 대문자를 소문자로
  - upper(): 알파벳 소문자를 대문자로
  - count(): 카운트

```
In [1]: a = '안녕'
```

```
In [2]: b = '하세요'
```

```
In [3]: a
```

```
Out[3]: '안녕'
```

```
In [4]: b
```

```
Out[4]: '하세요'
```

```
In [5]: a + b
```

```
Out[5]: '안녕하세요'
```

```
In [6]: a + a + b
```

```
Out[6]: '안녕안녕하세요'
```

```
In [7]: a * 2
```

```
Out[7]: '안녕안녕'
```

```
In [8]: a * 10
```

```
Out[8]: '안녕안녕안녕안녕안녕안녕안녕안녕안녕안녕'
```

```
In [9]: a * 2 + b
```

```
Out[9]: '안녕안녕하세요'
```

```
In [10]: c = a * 2 + b
```

```
In [11]: c
```

```
Out[11]: '안녕안녕하세요'
```

```
In [12]: c[0]
```

Out[12]: '안'

In [13]:
```
c[2:4]
```

Out[13]: '안녕'

In [14]:
```
c[2:]
```

Out[14]: '안녕하세요'

In [15]:
```
c[:4]
```

Out[15]: '안녕안녕'

In [16]:
```
for x in c:
    print(x)
```

```
안
녕
안
녕
하
세
요
```

In [17]:
```
d = 'Hello World!'
```

In [18]:
```
for x in d:
    print(x)
```

```
H
e
l
l
o

W
o
r
l
d
!
```

In [19]:
```
d.replace('Hello', 'Hi')
```

Out[19]: 'Hi World!'

In [20]:
```
d
```

Out[20]: 'Hello World!'

In [21]:
```
e = d.replace('Hello', 'Hi')
```

In [22]:
```
e
```

Out[22]: 'Hi World!'

In [23]:
```
a = '   안녕   '
```

In [24]:
```
a
```

Out[24]: '   안녕   '

In [25]:
```
b = '안녕'
```

In [26]:
```
a == b
```

Out[26]: False

In [27]:
```
a
```

Out[27]: '   안녕   '

In [28]:
```
a.strip()
```

Out[28]: '안녕'

In [29]:
```
a
```

Out[29]: '   안녕   '

In [30]:
```
a = a.strip()
```

In [31]:
```
a
```

Out[31]: '안녕'

In [32]:
```
a == b
```

Out[32]: True

In [33]:
```
b = '000-123-4567'
```

In [34]:
```
b.split('-')
```

Out[34]: ['000', '123', '4567']

In [35]:
```
b
```

Out[35]: '000-123-4567'

In [36]:
```
c = b.split('-')
```

In [37]:
```
c
```

Out[37]: ['000', '123', '4567']

In [38]:
```
c[0]
```

Out[38]: '000'

In [39]:
```
c[2]
```

Out[39]: '4567'

In [40]:
```
c[-1]
```

'4567'

Out[40]:

In [41]:
```
d = '빅데이터 머신러닝 인공지능'
```

In [42]:
```
d.split(' ')
```

Out[42]: ['빅데이터', '머신러닝', '인공지능']

In [43]:
```
d.split()
```

Out[43]: ['빅데이터', '머신러닝', '인공지능']

In [44]:
```
d
```

Out[44]: '빅데이터 머신러닝 인공지능'

In [45]:
```
e = d.split()
```

In [46]:
```
e
```

Out[46]: ['빅데이터', '머신러닝', '인공지능']

In [47]:
```
d = '빅데이터.머신러닝.인공지능'
```

In [48]:
```
d.split()
```

Out[48]: ['빅데이터.머신러닝.인공지능']

In [49]:
```
d.split('.')
```

Out[49]: ['빅데이터', '머신러닝', '인공지능']

In [50]:
```
d
```

Out[50]: '빅데이터.머신러닝.인공지능'

In [51]:
```
e = d.split('.')
```

In [52]:
```
e
```

Out[52]: ['빅데이터', '머신러닝', '인공지능']

In [53]:
```
''.join(e)
```

Out[53]: '빅데이터머신러닝인공지능'

In [54]:
```
e
```

Out[54]: ['빅데이터', '머신러닝', '인공지능']

In [55]:
```
' '.join(e)
```

Out[55]: '빅데이터 머신러닝 인공지능'

In [56]:
```
'-'.join(e)
```

'빅데이터-머신러닝-인공지능'

Out[56]:

In [57]:
```
e
```

Out[57]: ['빅데이터', '머신러닝', '인공지능']

In [58]:
```
f = '-'.join(e)
```

In [59]:
```
f
```

Out[59]: '빅데이터-머신러닝-인공지능'

In [60]:
```
a = 'Hello World!'
```

In [61]:
```
a
```

Out[61]: 'Hello World!'

In [62]:
```
a.lower()
```

Out[62]: 'hello world!'

In [63]:
```
a
```

Out[63]: 'Hello World!'

In [ ]:
```
a = a.lower()
```

In [64]:
```
a.upper()
```

Out[64]: 'HELLO WORLD!'

In [65]:
```
a
```

Out[65]: 'Hello World!'

In [66]:
```
b = a.upper()
```

In [67]:
```
b
```

Out[67]: 'HELLO WORLD!'

In [68]:
```
c = 'HelLo'
```

In [69]:
```
c
```

Out[69]: 'HelLo'

In [70]:
```
c.count('l')
```

Out[70]: 1

In [71]:
```
d = c.lower()
```

In [72]:
```
d
```

Out[72]: 'hello'

In [73]:
```
d.count('l')
```

Out[73]: 2

In [74]:
```
d.count('L')
```

Out[74]: 0

기타

- Counter
- 복사
- zip()
- enumerate()

In [1]:
```
from collections import Counter
```

In [2]:
```
a = 'a abc a ab abc a'
```

In [3]:
```
b = a.split()
```

In [4]:
```
b
```

Out[4]:
```
['a', 'abc', 'a', 'ab', 'abc', 'a']
```

In [5]:
```
c = Counter(b)
```

In [6]:
```
c
```

Out[6]:
```
Counter({'a': 3, 'abc': 2, 'ab': 1})
```

In [7]:
```
c.most_common()
```

Out[7]:
```
[('a', 3), ('abc', 2), ('ab', 1)]
```

In [8]:
```
c.most_common(1)
```

Out[8]:
```
[('a', 3)]
```

In [9]:
```
c.most_common(2)
```

Out[9]:
```
[('a', 3), ('abc', 2)]
```

In [10]:
```
d = dict(c.most_common())
```

In [11]:
```
d
```

Out[11]:
```
{'a': 3, 'abc': 2, 'ab': 1}
```

In [12]:
```
type(d)
```

Out[12]:
```
dict
```

In [13]:
```
d['a']
```

Out[13]:
```
3
```

In [14]:
```
d['ab']
```

Out[14]:
```
1
```

In [15]:
```
a = [10, 20, 30]
```

In [16]:
```
b = a
```

In [17]:
```
b
```

Out[17]: [10, 20, 30]

In [18]:
```
a
```

Out[18]: [10, 20, 30]

In [19]:
```
type(a)
```

Out[19]: list

In [20]:
```
type(b)
```

Out[20]: list

In [21]:
```
b[1] = 200
```

In [22]:
```
b
```

Out[22]: [10, 200, 30]

In [23]:
```
a
```

Out[23]: [10, 200, 30]

In [24]:
```
from copy import copy
```

In [25]:
```
a = [10, 20, 30]
```

In [26]:
```
b = a.copy()
```

In [27]:
```
b
```

Out[27]: [10, 20, 30]

In [28]:
```
b[1] = 200
```

In [29]:
```
b
```

Out[29]: [10, 200, 30]

In [30]:
```
a
```

Out[30]: [10, 20, 30]

In [31]:
```
a == b
```

Out[31]: False

In [32]:
```
c = {1: 100, 2: 200, 3: 300}
```

In [33]:
```
d = c
```

In [34]:
```
del c[1]
```

In [35]:
```
c
```

Out[35]: {2: 200, 3: 300}

In [36]:
```
d
```

Out[36]: {2: 200, 3: 300}

In [37]:
```
c == d
```

Out[37]: True

In [38]:
```
c = {1: 100, 2: 200, 3: 300}
```

In [39]:
```
d = c.copy()
```

In [40]:
```
del c[1]
```

In [41]:
```
c
```

Out[41]: {2: 200, 3: 300}

In [42]:
```
d
```

Out[42]: {1: 100, 2: 200, 3: 300}

In [43]:
```
c == d
```

Out[43]: False

In [44]:
```
e = {1, 3, 5}
```

In [45]:
```
f = e
```

In [46]:
```
e.remove(1)
```

In [47]:
```
e
```

Out[47]: {3, 5}

In [48]:
```
f
```

Out[48]: {3, 5}

In [49]:
```
e == f
```

Out[49]: True

In [50]:
```
e = {1, 3, 5}
```

In [51]:
```
f = e.copy()
```

In [52]:
```
e.remove(1)
```

In [53]:
```
e
```

Out[53]:
```
{3, 5}
```

In [54]:
```
f
```

Out[54]:
```
{1, 3, 5}
```

In [55]:
```
e == f
```

Out[55]:
```
False
```

In [56]:
```
a = 'abcd'
```

In [57]:
```
b = [1, 2, 3, 4]
```

In [58]:
```
for x in a:
    print(x)
```

```
a
b
c
d
```

In [59]:
```
for x in b:
    print(x)
```

```
1
2
3
4
```

In [60]:
```
for x, y in zip(a, b):
    print(x, y)
```

```
a 1
b 2
c 3
d 4
```

In [61]:
```
ab = dict(zip(a, b))
```

In [62]:
```
ab
```

Out[62]:
```
{'a': 1, 'b': 2, 'c': 3, 'd': 4}
```

In [63]:
```
type(ab)
```

Out[63]:
```
dict
```

In [64]:
```
abc = {'a': 1, 'b': 2, 'c': 3, 'd': 4}
```

In [65]:
```
ab == abc
```

Out[65]:
```
True
```

In [66]:
```
a
```

Out[66]:
```
'abcd'
```

In [ ]:
```

```

In [67]:
```
b
```

Out[67]:
```
[1, 2, 3, 4]
```

In [68]:
```
c = [10, 20, 30, 40]
```

In [69]:
```
for x, y, z in zip(a, b, c):
    print(x, y, z)
```

```
a 1 10
b 2 20
c 3 30
d 4 40
```

In [70]:
```
a
```

Out[70]:
```
'abcd'
```

In [71]:
```
for x in a:
    print(x)
```

```
a
b
c
d
```

In [72]:
```
for i, x in enumerate(a):
    print(i, x)
```

```
0 a
1 b
2 c
3 d
```

In [73]:
```
for i, x in enumerate(a, 10):
    print(i, x)
```

```
10 a
11 b
12 c
13 d
```

In [74]:
```
for i, x in enumerate(a, 1):
    print(i, x)
```

```
1 a
2 b
3 c
4 d
```

In [75]:
```
d = dict(enumerate(a, 1))
```

In [76]:
```
d
```

Out[76]:
```
{1: 'a', 2: 'b', 3: 'c', 4: 'd'}
```

In [77]:
```
e = ['홍길동', '홍길순', '아무개']
```

In [78]:
```
for i, x in enumerate(e, 1):
    print(i, x)
```

```
1 홍길동
2 홍길순
3 아무개
```

In [79]:
```
f = dict(enumerate(e, 1))
```

In [80]:
```
f
```

Out[80]:
```
{1: '홍길동', 2: '홍길순', 3: '아무개'}
```

In [81]:
```
type(f)
```

Out[81]:
```
dict
```

In [82]:
```
g = '빅데이터 머신러닝 인공지능'
```

In [83]:
```
h = dict(enumerate(g, 1))
```

In [84]:
```
h
```

Out[84]:
```
{1: '빅',
 2: '데',
 3: '이',
 4: '터',
 5: ' ',
 6: '머',
 7: '신',
 8: '러',
 9: '닝',
 10: ' ',
 11: '인',
 12: '공',
 13: '지',
 14: '능'}
```

In [85]:
```
g = '빅데이터 머신러닝 인공지능'.split()
```

In [86]:
```
g
```

Out[86]:
```
['빅데이터', '머신러닝', '인공지능']
```

In [87]:
```
h = dict(enumerate(g, 1))
```

In [88]:
```
h
```

Out[88]:
```
{1: '빅데이터', 2: '머신러닝', 3: '인공지능'}
```