Python training - lab 4

Data types

Description	Type name	Examples
NoneType	NoneType	`None`
Tuple	`tuple`	`(6, 'a')` `(23, True, 'abcd', [7, -8]), (6,)`
Set	`set`	`{'a', 5, 5.5}`

Dictionary	`dict`	`{`
		`  'd': 234,`
		`  56: 'abcd',`
		`  ('q', 8): True`
		`}`

None

```
# None is nothing, or null
a = None

# NoneType
type(a)

# b is None because print() doesn't return
anything
b = print('abcd')
```

tuple

```
# can contain any elements
t = ('abcd', 12, True)

print(t[1])     # can be accessed by index
t[1] = 'new'     # not possible to modify it
t.append('new') # not possible to add
t = ()      # empty tuple
t = (34,)  # tuple containing only one element
t[::-1] # reverse tuple
```

set

```
# can contain hashable elements:
# bool, int, float, str, tuple
# order not-deterministic
s = {'abcd', 12, True}

print(s[1])     # can't be accessed by index
s.add('new')    # add new element
s = set()     # empty set
s = {34}   # set containing only one element

for e in s:
   print(e)
```

dictionary

```
# keys must be hashable elements:
# values can be any type
# order not-deterministic
d = {23: 'abcd', ('a', True): {-6, 8}}

print(d[23]) # prints value of key 23
d['new'] = 55 # adds or modifies element
del d['new'] # deletes the element
d = {}     # empty dictionary
```

dictionary

```
for k in d:
   print(k, d[k])

d.items()
d.keys()

for k, v in d.items():
   print(k, v)
```

Operators

Operator	Explanation	Usage OK	Error
+	concatenate tuples	(23, 'abc') + ('a',)	(23, 'abc') + 5
*	multiply tuple	(23, 'abc') * 3	(23, 'abc') * 3.5
|	set reunion	{3, 5} | {5, 7}	
&	set intersection	{3, 5} & {5, 7}	
-	set disjunction/difference	{3, 5} - {5, 7}	
^	symmetric difference	{3, 5} ^ {5, 7}	
|	dictionary reunion	{2: 'abc', 4: 'Q'} | {'B': 67}	