



# Python Dictionary 字典

賴璉錡

lclai.t11@o365.fcu.edu.tw

# Dictionary(字典)

- 與list一樣都是一種容器，可以用來存放不同資料型態的資料
- 每一個元素是以鍵 (Key) 及值 (Value) 構成。
- 由 `{ }` 符號將所有元素括起來

index	0	1	2	3	4	5	6	7
value	1	2	3	'a'	'b'	'c'	True	False

List

key	Nǎnê	Têl'	ágê	ǎđđsêşş	Gênđês
value	'Mike'	'0369'	..	'Mike'	'male'

Dictionary

# Dictionary(字典)特性

- Iterable (可疊代的)：可以透過Python迴圈來進行元素的讀取。
- Modifiable (可修改的)：可以透過Python提供的**方法**來對Dictionary的值進行修改。
- Key-Value pairs (鍵與值)：
  - **鍵(Key)**的資料型態通常我們使用**字串(str)**或**整數(int)**，而
  - **值(Value)**可以是**任何資料型態**。

# Dictionary - 建立

```
# 身高
height = {"Tom": 185, "Andy": 178}

# 水果
fruit = {0: "apple", 1: "orange", 3: "banana"}

print(height)
print(fruit)
```

```
{'Tom': 185, 'Andy': 178}
{0: 'apple', 1: 'orange', 3: 'banana'}
```

# Dictionary - 存取

- 使用 `[]` 符號，傳入鍵 (Key) 的名稱。

```
# 身高
height = {"Tom": 185, "Andy": 178}

# 水果
fruit = {0: "apple", 1: "orange", 3: "banana"}

print(height['Tom'])
print(fruit[0])
```

```
185
apple
```

## Practice14: Dict

- 新增一個dict
  - type()
  - 取值

```
# 身高
height = {"Tom": 185, "Andy": 178}

# 水果
fruit = {0: "apple", 1: "orange", 3: "banana"}

print(type(height))
print(height['Tom'])
print(fruit[0])
```

# Dictionary - KeyError

```
# 身高
height = {"Tom": 185, "Andy": 178}

print(height['Jerry'])
```

```
Traceback (most recent call last):
  File "C:/Users/se1ab/PycharmProjects/pythonProject/ex4-2.py", line 4, in <module>
    print(height['Jerry'])
KeyError: 'Jerry'
```

```
# 身高
height = {"Tom": 185, "Andy": 178}

name = 'jerry'
if name in height:
    print(height[name])
else:
    print(name, 'is not in dict')
```

```
jerry is not in dict
```

# Dictionary - for 迴圈

## 1. key

```
# 身高
height = {"Tom": 185, "Andy": 178}

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

```
Tom
Andy
```

## 2. item

```
# 身高
height = {"Tom": 185, "Andy": 178}

for e in height.items():
    print(e)
```

```
('Tom', 185)
('Andy', 178)
```

## 3. index, value

```
# 身高
height = {"Tom": 185, "Andy": 178}

for index, value in height.items():
    print(index, "的身高是", value)
```

```
Tom 的身高是 185
Andy 的身高是 178
```



# Dictionary - 新增

- 於 `[]` 符號中輸入要新增的鍵 (Key) 的名稱，並且指派一個值 (Value) 給它。

```
# 身高
height = {"Tom": 185, "Andy": 178}

height['Mary'] = 180

print(height)
```

```
{'Tom': 185, 'Andy': 178, 'Mary': 180}
```

# Dictionary - 修改

- 於 `[]` 符號中輸入鍵 (Key) 的名稱，並且指派要修改的值 (Value) 給它。

```
# 身高
height = {"Tom": 185, "Andy": 178}

height['Tom'] = 160

print(height)
```

```
{'Tom': 160, 'Andy': 178}
```

# Dictionary - 刪除

- 使用 `del` 指令，並且於 `[]` 符號中輸入要刪除的元素鍵 (Key) 名稱。

```
# 身高
height = {"Tom": 185, "Andy": 178}

del height['Tom']

print(height)
```

```
{'Andy': 178}
```

# Dictionary - keys() 、 values()

```
# 身高
height = {"Tom": 185, "Andy": 178}

print(height.keys())
for k in height.keys():
    print(k)

print(height.values())
for v in height.values():
    print(v)
```

```
dict_keys(['Tom', 'Andy'])
Tom
Andy
dict_values([185, 178])
Tom
Andy
```

## Practice15 - 電影評分平均

- 計算電影評分的平均
- `movies = {'Inception': 8.8, 'The Shawshank Redemption': 9.3, 'The Godfather': 9.2}`

```
The average score is 9.1
```

## Practice16: 原料計算

- 請計算出各個菜餚中原料使用的次數
- `dishes = {'Spaghetti Carbonara': ['pasta', 'eggs', 'onions', 'chicken'], 'Chicken Curry': ['chicken', 'coconut milk', 'curry powder', 'onions', 'eggs']}`

```
{'pasta': 1, 'eggs': 2, 'onions': 2, 'chicken': 2, 'coconut milk': 1, 'curry powder': 1}
```

## Practice17: 銷售計算

- 請計算出所有訂單中銷售的狀況，包含訂單的金額與各商品的銷售統計
- `orders = { "order1": { "customer": {"name": "Alice", "email": "alice@example.com"}, "items": [ {"product_name": "Item A", "quantity": 2, "price": 30}, {"product_name": "Item B", "quantity": 1, "price": 20} ] }, "order2": { "customer": {"name": "Bob", "email": "bob@example.com"}, "items": [ {"product_name": "Item A", "quantity": 1, "price": 30}, {"product_name": "Item C", "quantity": 3, "price": 25} ] }, }`

```
result = {  
  "order_price": [  
    {  
      "order1": 80  
    },  
    {  
      "order2": 105  
    }  
  ],  
  "item_salse": {  
    "Item A": 2,  
    "Item B": 1,  
    "Item C": 1  
  }  
}
```

## HW2:字詞出現次數

- 從 `HW2.py` 中計算
- 計算新聞字串中單字出現次數
- 分別印出以下字詞的出現次數
  - robots
  - weeds

```
['On', 'a', 'field', 'in', 'England,',  
{ 'On': 1, 'a': 5, 'field': 1, 'in': 5,  
robots 共出現 3 次  
weeds 共出現 2 次
```