

# 字典

```
alien_0 = {'color': 'green', 'points': 5}
```

```
print(alien_0['color'])  
print(alien_0['points'])
```

```
green  
5
```

```
alien_0 = {'color' : 'green'}
```

```
print(alien_0['color'])
```

```
green
```

```
alien_0 = {'color': 'green', 'points': 5}
```

```
new_points = alien_0['points']  
print(f"You just earned {new_points} points!")
```

```
You just earned 5 points!
```

```
alien_0 = {'color': 'green', 'points': 5}
```

```
print(alien_0)
```

```
alien_0['x_position'] = 0  
alien_0['y_position'] = 25  
print(alien_0)
```

```
{'color': 'green', 'points': 5}  
{'color': 'green', 'points': 5, 'x_position': 0, 'y_position': 25}
```

```
alien_0 = {}
```

```
alien_0['color'] = 'green'  
alien_0['points'] = 5
```

```
print(alien_0)
```

```
{'color': 'green', 'points': 5}
```

```
alien_0 = {'color' : 'green', 'points' : 5}
print(f"The alien is {alien_0['color']}")

alien_0['color'] = 'yellow'
print(f"The alien is now {alien_0['color']}")
```

The alien is green  
The alien is now yellow

```
alien_0 = {'x_position' : 0, 'y_position' : 25, 'speed' : 'medium'}
print(f"Original x-position is {alien_0['x_position']}")

# alien_0['speed'] = 'fast'

if alien_0['speed'] == 'slow' :
    x_increment = 1
elif alien_0['speed'] == 'medium' :
    x_increment = 2
else :
    x_increment = 3

alien_0['x_position'] = alien_0['x_position'] + x_increment
print(f"New x-postion is {alien_0['x_position']}")
```

Original x-position is 0  
New x-postion is 3

```
alien_0 = {'color' : 'green', 'points' : 5}
print(alien_0)

del alien_0['points']
print(alien_0)
```

```
{'color': 'green', 'points': 5}
{'color': 'green'}
```

```
favourite_languages = {
    'jen' : 'python',
    'sarah' : 'c',
    'edward' : 'ruby',
    'phil' : 'python',
}
language = favourite_languages['sarah'].title()
print(f"Sarah's favourite language is {language}")
```

Sarah's favourite language is C

```
alien_0 = {'color' : 'green', 'speed' : 'slow'}
print(alien_0['points'])
```

```
-----
KeyError                                Traceback (most recent call last)
<ipython-input-23-79310b0ba42d> in <module>()
      1 alien_0 = {'color' : 'green', 'speed' : 'slow'}
----> 2 print(alien_0['points'])
```

KeyError: 'points'

```
alien_0 = {'color' : 'green', 'speed' : 'slow'}
point_value = alien_0.get('points', 'No point value assigned.')

print(point_value)
```

No point value assigned.

---

### 练习6-1

```
somewho = {
    'first_name' : 'Sam',
    'last_name' : 'Zhou',
    'age' : 18,
    'city' : 'KaiFeng',
}
print(somewho)
```

{'first\_name': 'Sam', 'last\_name': 'Zhou', 'age': 18, 'city': 'KaiFeng'}

### 练习6-2

```
somewho = {  
    'sam' : 10,  
    'Tom' : 23,  
    'jun' : 33,  
    'dicemy' : 1,  
    'T' : 8  
}  
print(somewho)
```

```
{'sam': 10, 'Tom': 23, 'jun': 33, 'dicemy': 1, 'T': 8}
```

### 练习6-3

```
print('略')
```

略

```
user_0 = {  
    'username' : 'efermi',  
    'first' : 'enrico',  
    'last' : 'fermi'  
}
```

```
for key, value in user_0.items():  
    print(f"\nkey:{key}")  
    print(f"Value:{value}")
```

```
Key:username  
Value:efermi
```

```
Key:first  
Value:enrico
```

```
Key:last  
Value:fermi
```

```
favourite_languages = {  
    'jen' : 'python',  
    'sarah' : 'c',  
    'edward' : 'ruby',  
    'phil' : 'python',  
}  
  
for name, language in favourite_languages.items():  
    print(f"{name.title()}'s favourite language is {language.title()}."
```

```
Jen's favourite language is Python.'  
Sarah's favourite language is C.'  
Edward's favourite language is Ruby.'  
Phil's favourite language is Python.'
```

```
for name in favourite_languages.keys():  
    print(name.title())
```

```
Jen  
Sarah  
Edward  
Phil
```

```
for value in favourite_languages.values() :  
    print(value.title())
```

```
Python  
C  
Ruby  
Python
```

```
names = []  
names = favourite_languages.values()  
print(names)
```

```
dict_values(['python', 'c', 'ruby', 'python'])
```

```
favourite_languages = {  
    'jen' : 'python',  
    'sarah' : 'c',  
    'edward' : 'ruby',  
    'phil' : 'python',  
    'sam' : 'c++',  
}  
  
friends = ['sarah', 'phil']  
for name in favourite_languages.keys() :  
    print(f"Hi, {name.title()}")  
  
    if name in friends :  
        language = favourite_languages[name]  
        print(f"\t{name.title()}, I see you love {language.title()}")
```

```
Hi, Jen
Hi, Sarah
    Sarah, I see you love C
Hi, Edward
Hi, Phil
    Phil, I see you love Python
Hi, Sam
```

```
favourite_languages = {
    'jen' : 'python',
    'sarah' : 'c',
    'edward' : 'ruby',
    'phil' : 'python',
    'sam' : 'c++',
}

if 'erin' not in favourite_languages :
    print("Erin, please take our poll!")
```

```
Erin, please take our poll!
```

```
for name in sorted(favourite_languages.keys()) :
    print(f"{name.title()}, thank you for taking the poll!")
```

```
Edward, thank you for taking the poll!
Jen, thank you for taking the poll!
Phil, thank you for taking the poll!
Sam, thank you for taking the poll!
Sarah, thank you for taking the poll!
```

```
for language in set(favourite_languages.values()):
    print(language)
```

```
ruby
c++
c
python
```

---

#### 练习6-4

```
print("略")
```

```
略
```

## 练习6-5

```
river = {  
    'changjiang' : 'henan',  
    'huanghe' : 'henan',  
    'yangzijiang' : 'wuhan',  
}  
  
for key, value in river.items() :  
    print(f"The {key} runs through {value}")
```

The changjiang runs through henan  
The huanghe runs through henan  
The yangzijiang runs through wuhan

```
for key in river.keys() :  
    print(key)
```

changjiang  
huanghe  
yangzijiang

```
for value in set(river.values()) :  
    print(value)
```

henan  
wuhan

## 练习6-6

```
names = ['jen', 'edward', 'tom', 'tobinmeng', 'sam', 'sarah', 'phil']  
  
for name in names :  
    if name in favourite_languages.keys() :  
        print(f"Think you {name}!")  
    else :  
        print(f"Come on {name}, join us!")
```

Think you jen!  
Think you edward!  
Come on tom, join us!  
Come on tobinmeng, join us!  
Think you sam!  
Think you sarah!  
Think you phil!

```
alien_0 = {'color' : 'green', 'points' : 5}
alien_1 = {'color' : 'yellow', 'points' : 10}
alien_2 = {'color' : 'red', 'points' : 15}

aliens = [alien_0, alien_1, alien_2]
for alien in aliens :
    print(alien)
```

```
{'color': 'green', 'points': 5}
{'color': 'yellow', 'points': 10}
{'color': 'red', 'points': 15}
```

```
aliens = []

for alien_number in range(30):
    new_alien = {'color' : 'green', 'point' : 5, 'speed' : 'slow'}
    aliens.append(new_alien)

for alien in aliens[:5]:
    print(alien)

print("...")

print(f"Total number of aliens : {len(aliens)}")
```

```
{'color': 'green', 'point': 5, 'speed': 'slow'}
{'color': 'green', 'point': 5, 'speed': 'slow'}
{'color': 'green', 'point': 5, 'speed': 'slow'}
{'color': 'green', 'point': 5, 'speed': 'slow'}
{'color': 'green', 'point': 5, 'speed': 'slow'}
...
Total number of aliens : 30
```

```
for alien in aliens[:3] :
    if alien['color'] == 'green':
        alien['color'] = 'yellow'
        alien['points'] = 10
        alien['speed'] = 'medium'

for alien in aliens[:5]:
    print(alien)
```

```
{'color': 'yellow', 'point': 5, 'speed': 'medium', 'points': 10}
{'color': 'yellow', 'point': 5, 'speed': 'medium', 'points': 10}
{'color': 'yellow', 'point': 5, 'speed': 'medium', 'points': 10}
{'color': 'green', 'point': 5, 'speed': 'slow'}
{'color': 'green', 'point': 5, 'speed': 'slow'}
```



```

pizza = {
    'crust' : 'thick',
    'toppings' : ['mushrooms', 'extra cheese'],
}

print(f"You ordered a {pizza['crust']}- crust pizza"
      "with the following toppings:")

for topping in pizza['toppings']:
    print('\t' + topping)

```

```

You ordered a thick- crust pizzawith the following toppings:
mushrooms
extra cheese

```

```

favourite_languages = {
    'jen' : ['python', 'ruby'],
    'sarah' : ['c'],
    'edward' : ['ruby', 'go'],
    'phil' : ['python', 'haskell'],
}

for name, languages in favourite_languages.items() :
    print(f"\n {name.title()}'s favourtie language are:")
    for language in languages:
        print(f"\t{language.title()}")

```

```

Jen's favourtie language are:
Python
Ruby

Sarah's favourtie language are:
C

Edward's favourtie language are:
Ruby
Go

Phil's favourtie language are:
Python
Haskell

```

```

users = {
    'aeinstein' : {
        'first' : 'albert',
        'last' : 'einstein',
        'location' : 'princeton',
    },
    'mcurie' : {
        'first' : 'marie',

```

```

        'last' : 'curie',
        'location' : 'paris',
    },
}

for username, user_info in users.items():
    print(f"\nUsername : {username}")
    full_name = f"{user_info['first']} {user_info['last']}"
    location = user_info['location']

    print(f"\tFull name : {full_name.title()}")
    print(f"\tLocation : {location.title()}")

```

```

Username : aeinstein
    Full name : Albert Einstein
    Location : Priceton

Username : mcurie
    Full name : Marie Curie
    Location : Paris

```

练习6-7 到 练习6-12 略

## 用户输入和while循环

```

message = input("Tell me something, and I will repeat it back to you:")
print(message)

```

```

Tell me something, and I will repeat it back to you:Hello world!
Hello World!

```

```

name = input("Please enter your name: ")
print(f"\nHello, {name}!")

```

```

Please enter your name: TobinMEng

Hello, TobinMEng!

```

```

prompt = "If you tell us who you are, we can personalize the messages you see."
prompt += "\nwhat is your first name?"

name = input(prompt)
print(f"\nHello, {name}!")

```

```

If you tell us who you are, we can personalize the messages you see.
what is your first name?TobinMEng

Hello, TobinMEng!

```

```
age = input("How old are you?")
```

```
How old are you?21
```

```
age
```

```
'21'
```

```
age >= 18
```

```
-----  
TypeError                                Traceback (most recent call last)  
<ipython-input-12-4ce6028355cc> in <module>()  
----> 1 age >= 18
```

```
TypeError: '>=' not supported between instances of 'str' and 'int'
```

```
age = int(age)  
age >= 18
```

```
True
```

```
height = input("How tall are you, in inches?")  
height = int(height)  
  
if height >= 48 :  
    print("\nYou're tall enough to ride!")  
else :  
    print("\nYou'll be able to ride when you're a little older.")
```

```
How tall are you, in inches?48
```

```
You're tall enough to ride!
```

4 % 3

1

5 % 3

2

6 % 3

0

7 % 3

1

```
number = input("Enter a number, and I'll tell you if it's even or odd: ")
number = int(number)

if number % 2 == 0 :
    print(f"\nThe number {number} is even.")
else :
    print(f"\nThe number {number} is odd.")
```

Enter a number, and I'll tell you if it's even or odd: 42

The number 42 is even.

### 练习7-1

```
car = input("What car would you borrow? ")
print(f"\nLet me see if I can find you a {car}.")
```

What car would you borrow? Subarn

Let me see if I can find you a Subarn.

### 练习7-2

```
number = input("How many people go with you? ")
number = int(number)
if number >= 8 :
    print("\nSorry, no free table.")
else :
    print("\nYes, please come in.")
```

How many people go with you? 10

Sorry, no free table.

### 练习7-3

```
number = input("Please enter a number: ")
number = int(number)

if number % 10 == 0 :
    print("\nYes.")
else :
    print("\nNo.")
```

Please enter a number: 20

Yes.

```
current_number = 1
while current_number <= 5 :
    print(current_number)
    current_number += 1
```

1  
2  
3  
4  
5

```
prompt = "\nTell me something and I will repeat it back to you: "
prompt += "\nEnter 'quit' to end the program."
message = ""
```

