Python_09

字串操作

字串的操作

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字串的建立

```python
#單引號
str_a = 'This is a sigle line string'
print(str_a)

#雙引號
str_b = "This is a sigle line string"
print(str_b)

#三個單引號
str_c = '''This is a multiple line string
This is a multiple line string
This is a multiple line string '''

print(str_c)

#三個雙引號
str_d ="""This is a multiple line string
This is a multiple line string
This is a multiple line string"""

print(str_d)
```

字串與轉義字元

- **轉義字元** \n , \t , \' , \\ , \r

```
#字串結合 \n
str_n = "This is first string.\nThis is second string.\nThis is third string."
print(str_n)

#字串結合 \t
str_t_n = "\tThis is first string.\n\tThis is second string.\n\tThis third string."
print(str_t_n)

#字串結合 \' or \"
str_n_sq = "\'This is first string.\'\n\'This is second string.\'\n\'This third string.\'"
print(str_n_sq)

#字串結合 \\
str_n_sq = "\\This is first string.\n\\This is second string.\n\\This third string."
print(str_n_sq)

#字串結合 \r
str_r = "This is first string.\rThis is second string.\rThis is third string."
print(str_r)
```

轉換成字串

```python
#數值轉字串
a = 100.05 ; b=20
print(a+b)
a = str(a)
#print(a+b)   #無法執行，要如何改?

#串列轉字串
a= [10,20,30]
print(str(a))

#值組轉字串
a= (10,20,30)
print(str(a))

#字典轉字串
dict_a = {0:'apple',1:'orange',2:'mango'}
print(str(dict_a))

#集合轉字串
set_a ={10,20,30}
print(str(set_a))
```

字串的連接與重複

```python
#字串連接
print("This is a " + "Python string.")

#字串重複
print("It's important! \n" *3 )

#數值與字串連接
a = 100.05 ; b=20
print('a='+str(a)+' b='+str(b))

#串列與字串連接
list_a= [10,20,30]
str_a =''
for item in list_a:
    str_a = str_a +' '+str(item)
    print(str_a)

#字典與字串連接與重複
dict_a = {0:'apple',1:'orange',2:'mango'}
for i in range(len(dict_a)):
    print("Item",i,":"+(" "+dict_a[i]))
```

字串的字元擷取與切片

• 使用 [ ] 與 [:]

```python
#字元擷取
str_t = "\'This is a Python string.\'"
for i in range(len(str_t)):
    print("str_t[",i,"] = ",str_t[i])

#序列切片 [:] [start:] [:end] [start:end] [start:end:step]

print(str_t[1:])
print(str_t[:10])
print(str_t[10:17])
print(str_t[17:])
print(str_t[:10]+str_t[17:])
print(str_t[::3])
```

字串分割與結合

```python
#使用 spilt()與空白分割字串成串列
str_t = "AA BB CC DD"
print(str_t.split())

#使用 spilt()與逗號分割字串成串列
str_p = "A,B,C,D"
print(str_p.split(','))

#使用 join()  把字串插入串列的間隔
L = ['DD','EE','FF']
print(','.join(L))
print('/'.join(L))
```

字串的大小寫與對齊方式

- lower() , upper() , rjust() , ljust() , center()
- title() , capitalize()

```python
#將字串轉成大寫或小寫
str_p = "alicE , joE , boB , kenT , zoeY"
print(str_p.lower())
print(str_p.upper())
print(str_p.title())

#將字串顯示為標題
str_t = "python is powerful and fast"
print(str_t.capitalize())

#字串的對其方式
str_s = "Hello"
print('\''+str_s.rjust(20)+'\'')
print('\''+str_s.ljust(20)+'\'')
print('\''+str_s.center(20)+'\'')
```

刪除字串首尾的字串

- strip() , lstrip(), rstrip()

```python
str_t = '     [Python is easy]     '

#刪除左右的空白
print('\''+str_t.lstrip()+'\'')
print('\''+str_t.rstrip()+'\'')
print('\''+str_t.strip()+'\'')

#沒有刪除空白，無法刪除左右特定字元
print(str_t.strip('[').strip(']'))

#刪除特地字元
str_m = str_t.strip().strip('[').strip(']')
print(str_m)
```

字串的尋找與取代

```python
str_p = 'Python is easy to learn, and simple to use.'

#尋找 特定字串
print(str_p.find('to'))
print(str_p.rfind('to'))

#統計 特定字串 出現的次數
print(str_p.count('to'))

#取代 特定字串
str_m = str_p.replace('to', '',str_p.count('to'))

# 特定字串  是否存在字串中
print("to" in str_m)
print(str_m)
print('to' not in str_m)

#是否以特定字串開始或結束
print(str_p.startswith('Python'))
print(str_p.endswith('.'))
```

字串的檢查

```python
def input_check(input_str):
    print('\n')
    print(input_str)
    print('is space: ', input_str.isspace())
    print('is a numberic or alpha : ', input_str.isalnum())
    print('is numberic', input_str.isnumeric())
    print('is decimal', input_str.isdecimal())
    print('is digit', input_str.isdigit())
    print('is alpha ', input_str.isalpha())
    print('is lower', input_str.islower())
    print('is upper', input_str.isupper())
    print('is title', input_str.istitle())
    print('is ascii', input_str.isascii())

input_check('ABC')
input_check('123456')
input_check('!!2344abc')
input_check('100.01')
input_check('')
input_check(' ')
```

單元作業

- 請將字串 "alice , joe , bob , kent , zoey" 變成字串"alicE ; joE ; boB ; kenT ; zoeY"