

國立北斗家商 109 學年度

Python  
學習檔案

班級：資一 1

座號：32

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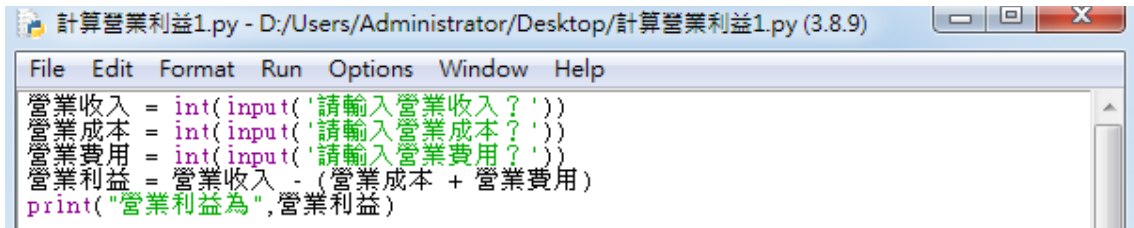
指導老師：江岳臻

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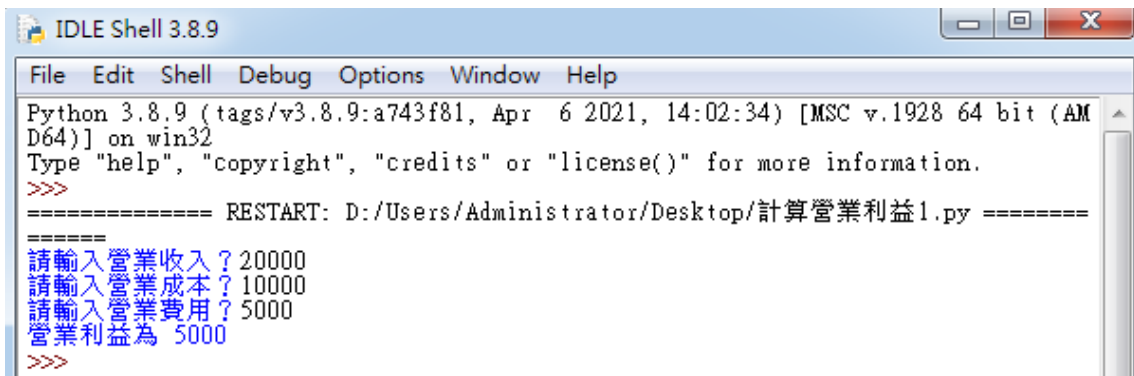
# 01 計算營業利益

程式碼：



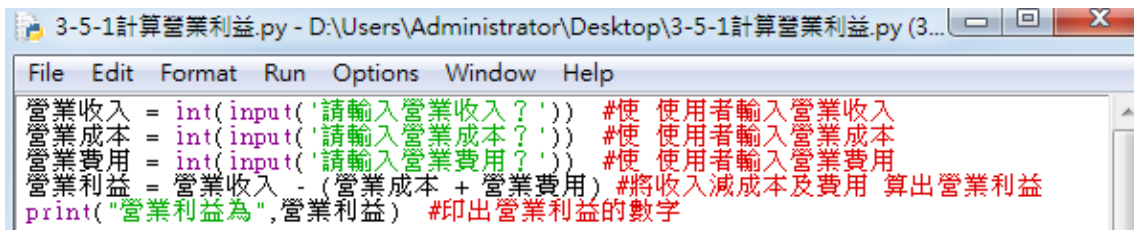
```
計算營業利益1.py - D:/Users/Administrator/Desktop/計算營業利益1.py (3.8.9)
File Edit Format Run Options Window Help
營業收入 = int(input('請輸入營業收入?'))
營業成本 = int(input('請輸入營業成本?'))
營業費用 = int(input('請輸入營業費用?'))
營業利益 = 營業收入 - (營業成本 + 營業費用)
print("營業利益為",營業利益)
```

執行結果：



```
IDLE Shell 3.8.9
File Edit Shell Debug Options Window Help
Python 3.8.9 (tags/v3.8.9:a743f81, Apr 6 2021, 14:02:34) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:/Users/Administrator/Desktop/計算營業利益1.py =====
=====
請輸入營業收入? 20000
請輸入營業成本? 10000
請輸入營業費用? 5000
營業利益為 5000
>>>
```

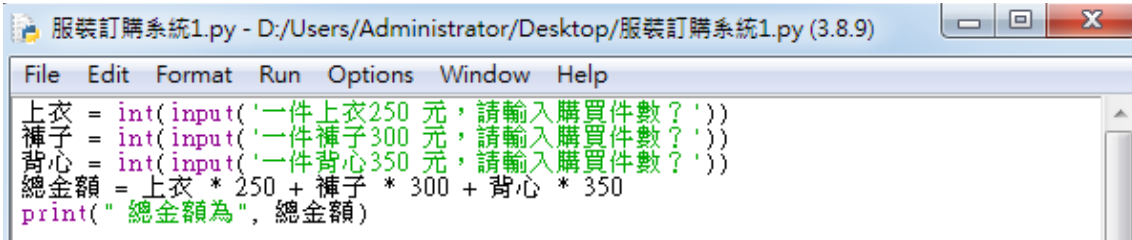
程式解說：



```
3-5-1計算營業利益.py - D:\Users\Administrator\Desktop\3-5-1計算營業利益.py (3...
File Edit Format Run Options Window Help
營業收入 = int(input('請輸入營業收入?')) #使 使用者輸入營業收入
營業成本 = int(input('請輸入營業成本?')) #使 使用者輸入營業成本
營業費用 = int(input('請輸入營業費用?')) #使 使用者輸入營業費用
營業利益 = 營業收入 - (營業成本 + 營業費用) #將收入減成本及費用 算出營業利益
print("營業利益為",營業利益) #印出營業利益的數字
```

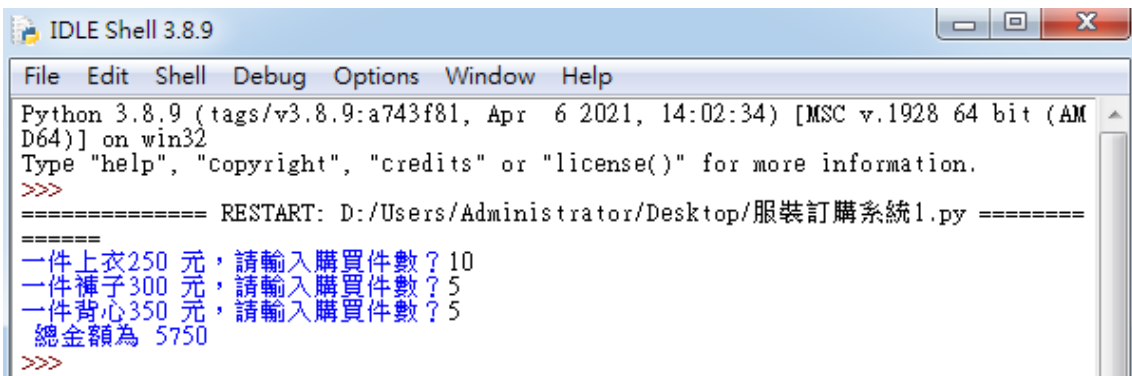
## 02 服裝訂購系統

程式碼：



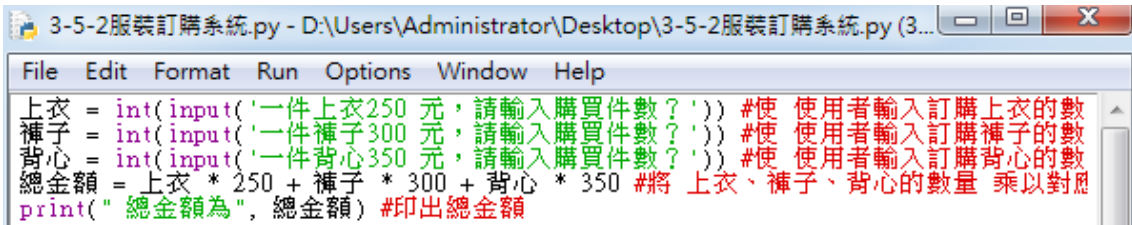
```
服裝訂購系統1.py - D:/Users/Administrator/Desktop/服裝訂購系統1.py (3.8.9)
File Edit Format Run Options Window Help
上衣 = int(input('一件上衣250 元，請輸入購買件數？'))
褲子 = int(input('一件褲子300 元，請輸入購買件數？'))
背心 = int(input('一件背心350 元，請輸入購買件數？'))
總金額 = 上衣 * 250 + 褲子 * 300 + 背心 * 350
print(" 總金額為", 總金額)
```

執行結果：



```
IDLE Shell 3.8.9
File Edit Shell Debug Options Window Help
Python 3.8.9 (tags/v3.8.9:a743f81, Apr 6 2021, 14:02:34) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:/Users/Administrator/Desktop/服裝訂購系統1.py =====
>>>
一件上衣250 元，請輸入購買件數？10
一件褲子300 元，請輸入購買件數？5
一件背心350 元，請輸入購買件數？5
總金額為 5750
>>>
```

程式解說：



```
3-5-2服裝訂購系統.py - D:\Users\Administrator\Desktop\3-5-2服裝訂購系統.py (3...
File Edit Format Run Options Window Help
上衣 = int(input('一件上衣250 元，請輸入購買件數？')) #使 使用者輸入訂購上衣的數
褲子 = int(input('一件褲子300 元，請輸入購買件數？')) #使 使用者輸入訂購褲子的數
背心 = int(input('一件背心350 元，請輸入購買件數？')) #使 使用者輸入訂購背心的數
總金額 = 上衣 * 250 + 褲子 * 300 + 背心 * 350 #將 上衣、褲子、背心的數量 乘以對應
print(" 總金額為", 總金額) #印出總金額
```

## 03 複利計算

程式碼：

```

複利計算.py - D:/Users/Administrator/Desktop/複利計算.py (3.8.9)
File Edit Format Run Options Window Help
本金 = float(input('請輸入本金?'))
年利率 = float(input('請輸入年利率?'))
第一年本利和 = 本金 * ( 1 + 年利率 * 0.01 )
第二年本利和 = 本金 * ( 1 + 年利率 * 0.01 ) ** 2
第三年本利和 = 本金 * ( 1 + 年利率 * 0.01 ) ** 3
print("第一年本利和為", 第一年本利和)
print("第二年本利和為", 第二年本利和)
print("第三年本利和為", 第三年本利和)
    
```

執行結果：

```

IDLE Shell 3.8.9
File Edit Shell Debug Options Window Help
Python 3.8.9 (tags/v3.8.9:a743f81, Apr 6 2021, 14:02:34) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:/Users/Administrator/Desktop/複利計算.py =====
=====
請輸入本金? 1000
請輸入年利率? 5
第一年本利和為 1050.0
第二年本利和為 1102.5
第三年本利和為 1157.6250000000002
>>> |
    
```

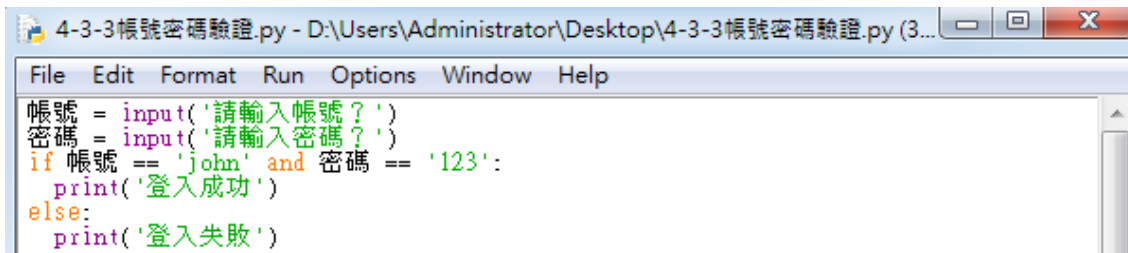
程式解說：

```

3-5-6複利計算.py - D:\Users\Administrator\Desktop\3-5-6複利計算.py (3.8.9)
File Edit Format Run Options Window Help
本金 = float(input('請輸入本金?')) #使 使用者輸入本金
年利率 = float(input('請輸入年利率?')) #使 使用者輸入年利率
第一年本利和 = 本金 * ( 1 + 年利率 * 0.01 ) #計算第一年的本利和
第二年本利和 = 本金 * ( 1 + 年利率 * 0.01 ) ** 2 #計算第二年的本利和
第三年本利和 = 本金 * ( 1 + 年利率 * 0.01 ) ** 3 #計算第三年的本利和
print("第一年本利和為", 第一年本利和) #印出第一年的本利和
print("第二年本利和為", 第二年本利和) #印出第二年的本利和
print("第三年本利和為", 第三年本利和) #印出第三年的本利和
    
```

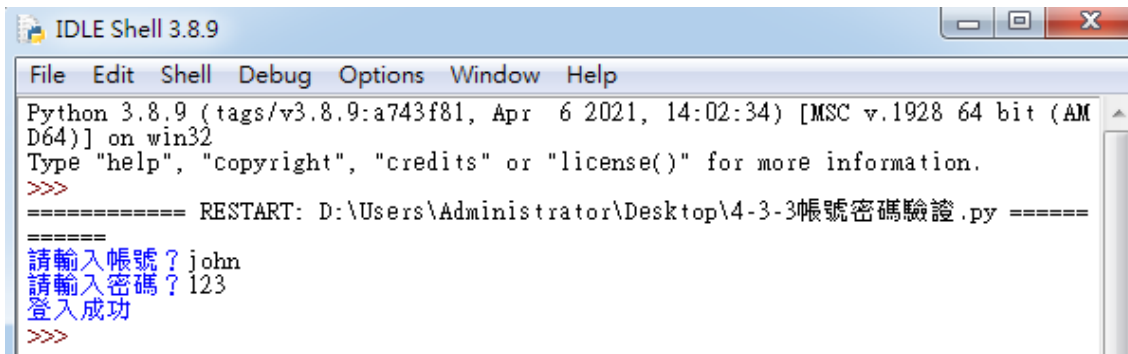
## 04 帳號密碼驗證

程式碼：



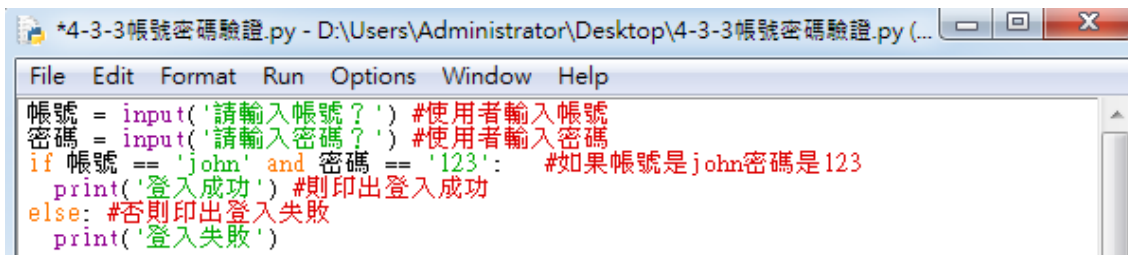
```
4-3-3帳號密碼驗證.py - D:\Users\Administrator\Desktop\4-3-3帳號密碼驗證.py (3...
File Edit Format Run Options Window Help
帳號 = input('請輸入帳號?')
密碼 = input('請輸入密碼?')
if 帳號 == 'john' and 密碼 == '123':
    print('登入成功')
else:
    print('登入失敗')
```

執行結果：



```
IDLE Shell 3.8.9
File Edit Shell Debug Options Window Help
Python 3.8.9 (tags/v3.8.9:a743f81, Apr 6 2021, 14:02:34) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:\Users\Administrator\Desktop\4-3-3帳號密碼驗證.py =====
=====
請輸入帳號? john
請輸入密碼? 123
登入成功
>>>
```

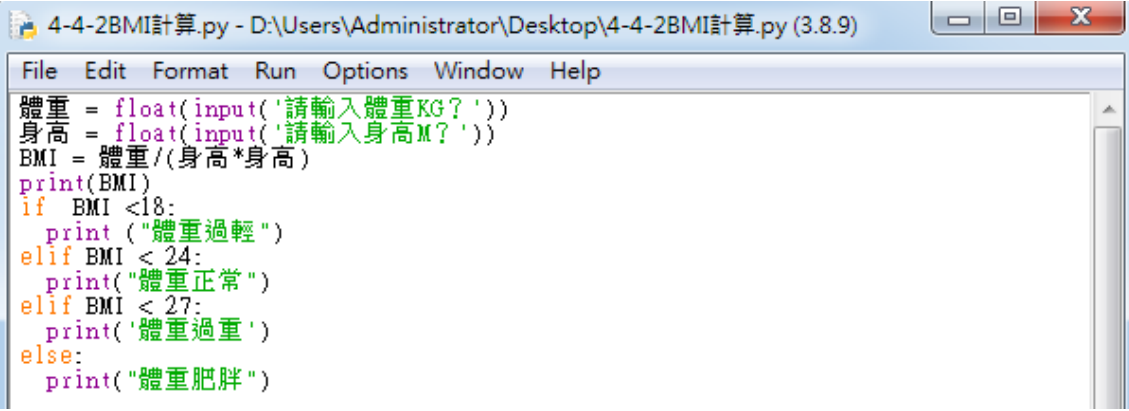
程式解說：



```
*4-3-3帳號密碼驗證.py - D:\Users\Administrator\Desktop\4-3-3帳號密碼驗證.py (...
File Edit Format Run Options Window Help
帳號 = input('請輸入帳號?') #使用者輸入帳號
密碼 = input('請輸入密碼?') #使用者輸入密碼
if 帳號 == 'john' and 密碼 == '123': #如果帳號是john密碼是123
    print('登入成功') #則印出登入成功
else: #否則印出登入失敗
    print('登入失敗')
```

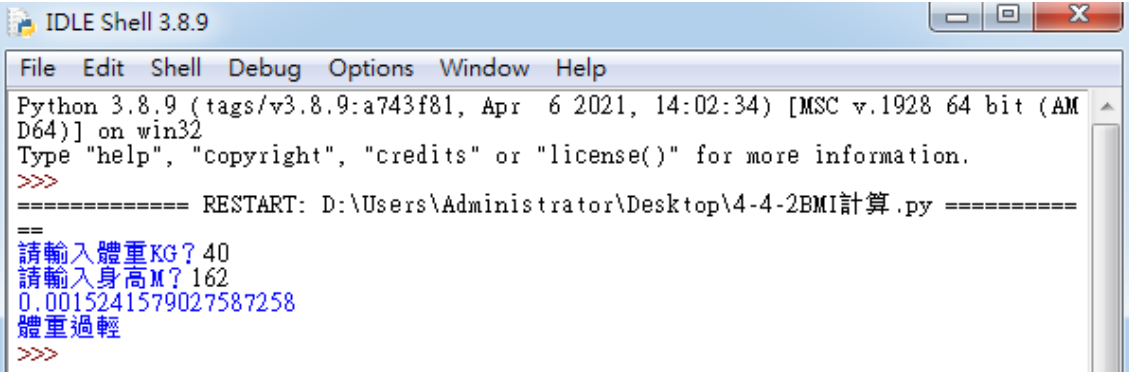
## 05 BMI 計算

程式碼：



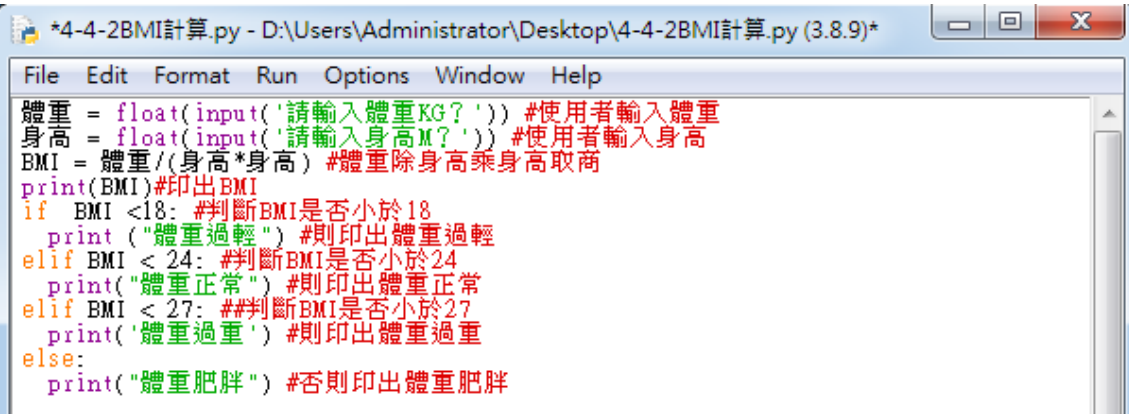
```
4-4-2BMI計算.py - D:\Users\Administrator\Desktop\4-4-2BMI計算.py (3.8.9)
File Edit Format Run Options Window Help
體重 = float(input('請輸入體重KG?'))
身高 = float(input('請輸入身高M?'))
BMI = 體重/(身高*身高)
print(BMI)
if BMI <18:
    print("體重過輕")
elif BMI < 24:
    print("體重正常")
elif BMI < 27:
    print('體重過重')
else:
    print("體重肥胖")
```

執行結果：



```
IDLE Shell 3.8.9
File Edit Shell Debug Options Window Help
Python 3.8.9 (tags/v3.8.9:a743f81, Apr 6 2021, 14:02:34) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:\Users\Administrator\Desktop\4-4-2BMI計算.py =====
==
請輸入體重KG? 40
請輸入身高M? 162
0.0015241579027587258
體重過輕
>>>
```

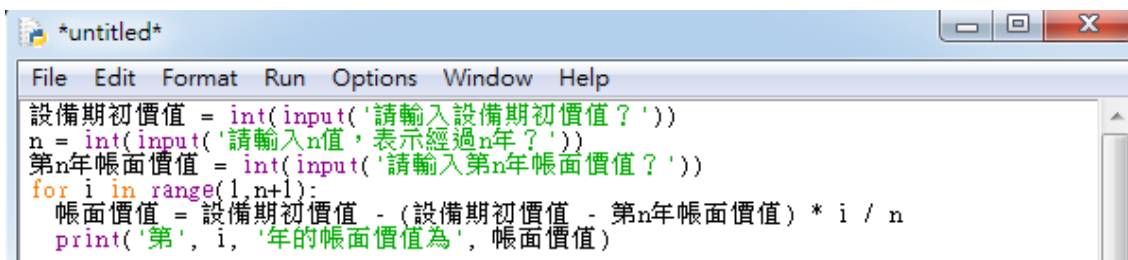
程式解說：



```
*4-4-2BMI計算.py - D:\Users\Administrator\Desktop\4-4-2BMI計算.py (3.8.9)*
File Edit Format Run Options Window Help
體重 = float(input('請輸入體重KG?')) #使用者輸入體重
身高 = float(input('請輸入身高M?')) #使用者輸入身高
BMI = 體重/(身高*身高) #體重除身高乘身高取商
print(BMI)#印出BMI
if BMI <18: #判斷BMI是否小於18
    print("體重過輕") #則印出體重過輕
elif BMI < 24: #判斷BMI是否小於24
    print("體重正常") #則印出體重正常
elif BMI < 27: ##判斷BMI是否小於27
    print('體重過重') #則印出體重過重
else:
    print("體重肥胖") #否則印出體重肥胖
```

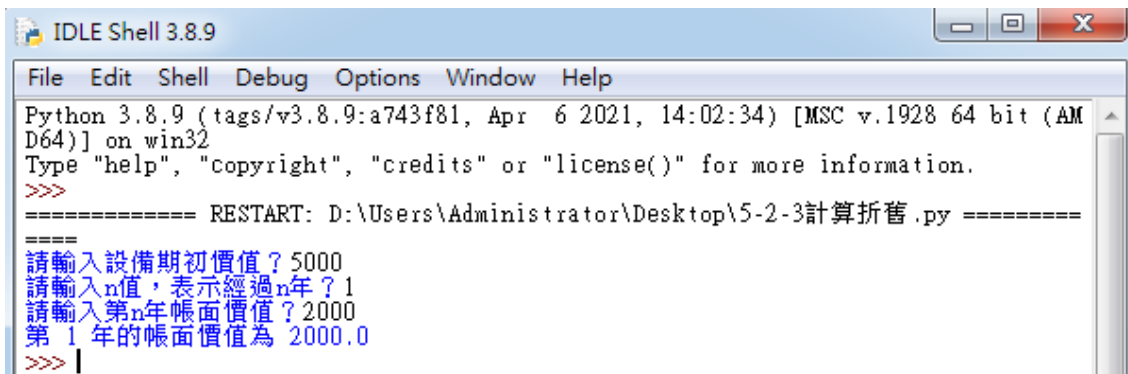
## 06 計算折舊

程式碼：



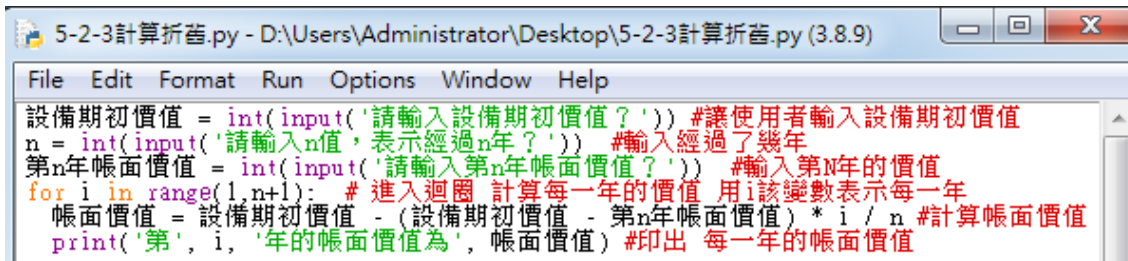
```
*untitled*
File Edit Format Run Options Window Help
設備期初價值 = int(input('請輸入設備期初價值?'))
n = int(input('請輸入n值,表示經過n年?'))
第n年帳面價值 = int(input('請輸入第n年帳面價值?'))
for i in range(1,n+1):
    帳面價值 = 設備期初價值 - (設備期初價值 - 第n年帳面價值) * i / n
    print('第', i, '年的帳面價值為', 帳面價值)
```

執行結果：



```
IDLE Shell 3.8.9
File Edit Shell Debug Options Window Help
Python 3.8.9 (tags/v3.8.9:a743f81, Apr 6 2021, 14:02:34) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:\Users\Administrator\Desktop\5-2-3計算折舊.py =====
=====
請輸入設備期初價值? 5000
請輸入n值,表示經過n年? 1
請輸入第n年帳面價值? 2000
第 1 年的帳面價值為 2000.0
>>> |
```

程式解說：

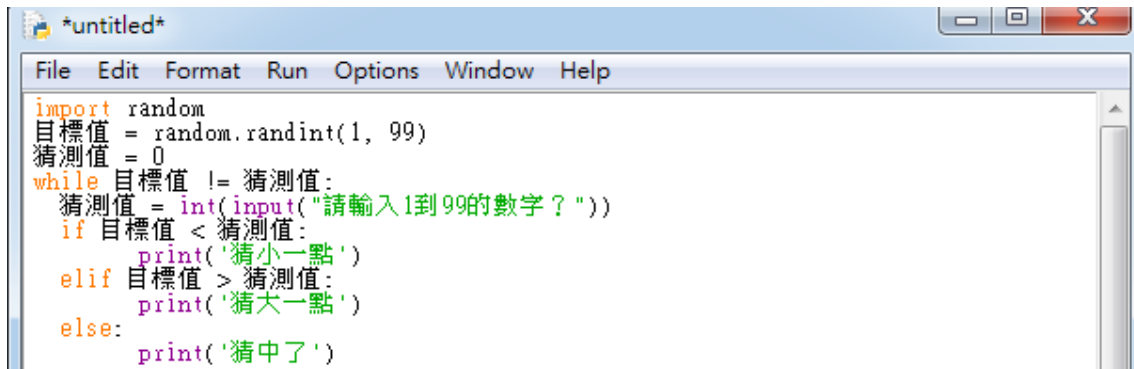


```
5-2-3計算折舊.py - D:\Users\Administrator\Desktop\5-2-3計算折舊.py (3.8.9)
File Edit Format Run Options Window Help
設備期初價值 = int(input('請輸入設備期初價值?')) #讓使用者輸入設備期初價值
n = int(input('請輸入n值,表示經過n年?')) #輸入經過了幾年
第n年帳面價值 = int(input('請輸入第n年帳面價值?')) #輸入第n年的價值
for i in range(1,n+1): # 進入迴圈 計算每一年的價值 用i該變數表示每一年
    帳面價值 = 設備期初價值 - (設備期初價值 - 第n年帳面價值) * i / n #計算帳面價值
    print('第', i, '年的帳面價值為', 帳面價值) #印出 每一年的帳面價值
```



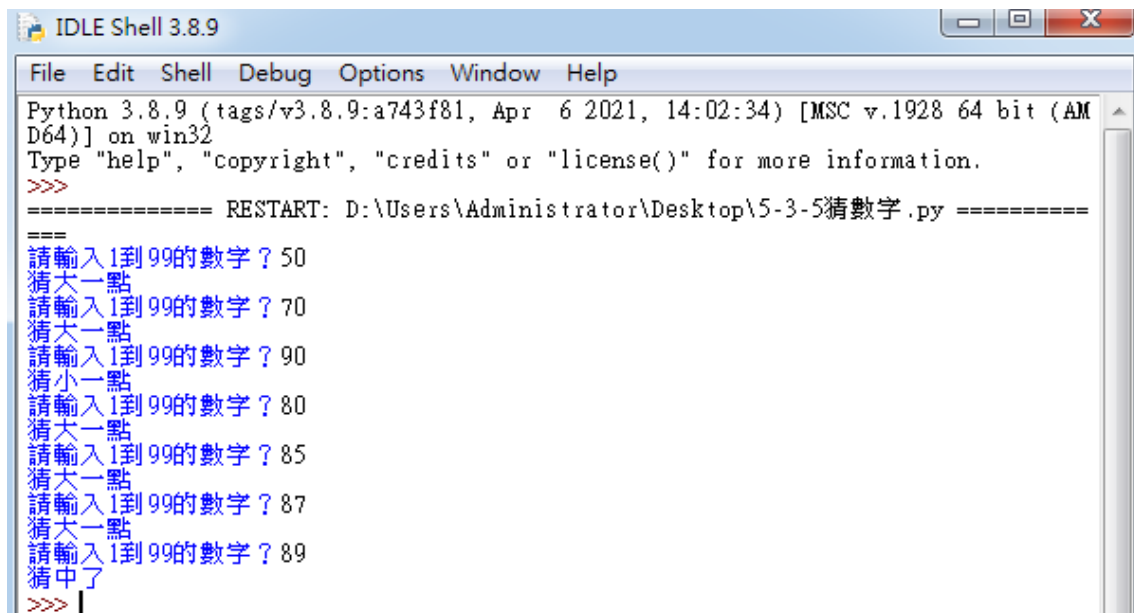
## 07 猜數字

程式碼：



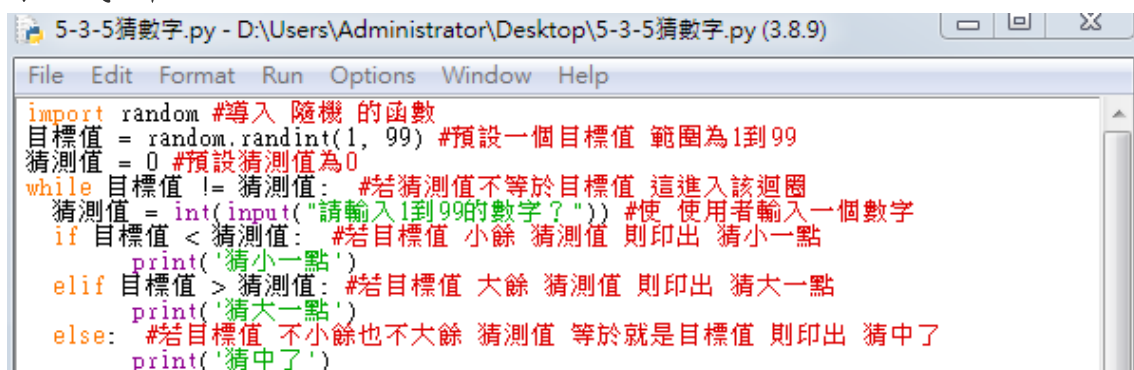
```
import random
目標值 = random.randint(1, 99)
猜測值 = 0
while 目標值 != 猜測值:
    猜測值 = int(input("請輸入1到99的數字?"))
    if 目標值 < 猜測值:
        print('猜小一點')
    elif 目標值 > 猜測值:
        print('猜大一點')
    else:
        print('猜中了')
```

執行結果：



```
Python 3.8.9 (tags/v3.8.9:a743f81, Apr 6 2021, 14:02:34) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:\Users\Administrator\Desktop\5-3-5猜數字.py =====
====
請輸入1到99的數字? 50
猜大一點
請輸入1到99的數字? 70
猜大一點
請輸入1到99的數字? 90
猜小一點
請輸入1到99的數字? 80
猜大一點
請輸入1到99的數字? 85
猜大一點
請輸入1到99的數字? 87
猜大一點
請輸入1到99的數字? 89
猜中了
>>> |
```

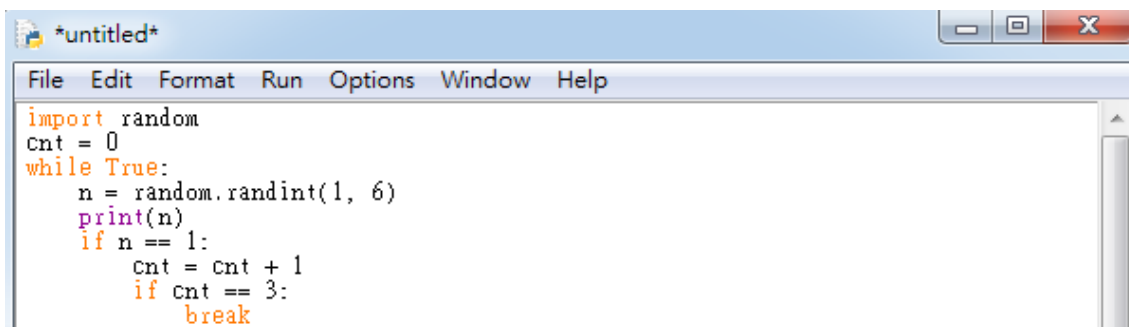
程式解說：



```
import random #導入 隨機 的函數
目標值 = random.randint(1, 99) #預設一個目標值 範圍為1到99
猜測值 = 0 #預設猜測值為0
while 目標值 != 猜測值: #若猜測值不等於目標值 這進入該迴圈
    猜測值 = int(input("請輸入1到99的數字?")) #使 使用者輸入一個數字
    if 目標值 < 猜測值: #若目標值 小餘 猜測值 則印出 猜小一點
        print('猜小一點')
    elif 目標值 > 猜測值: #若目標值 大餘 猜測值 則印出 猜大一點
        print('猜大一點')
    else: #若目標值 不小餘也不大餘 猜測值 等於就是目標值 則印出 猜中了
        print('猜中了')
```

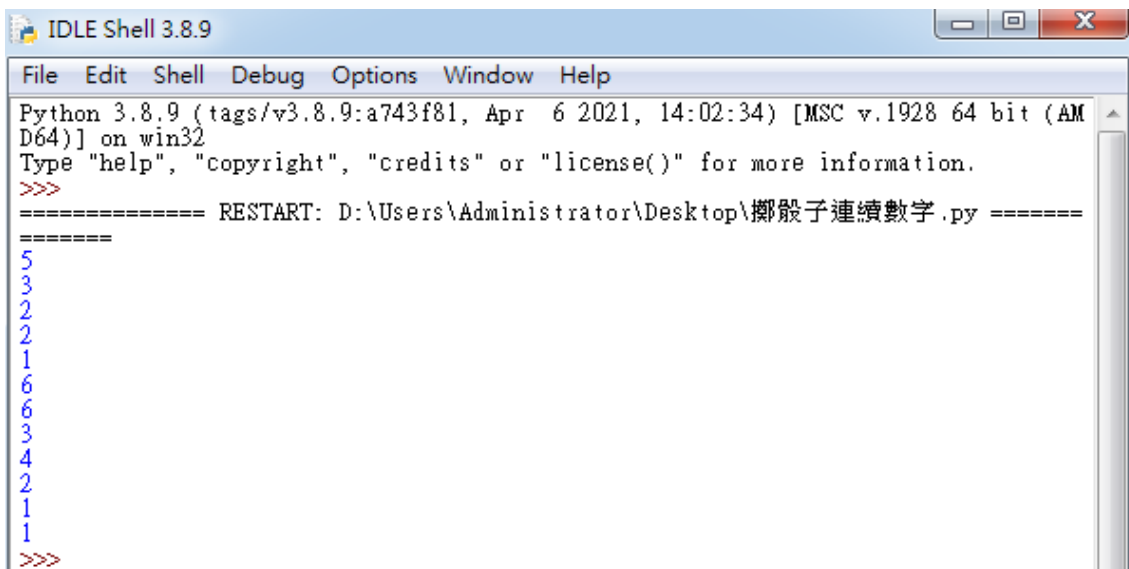
## 08 擲骰子連續數字

程式碼：



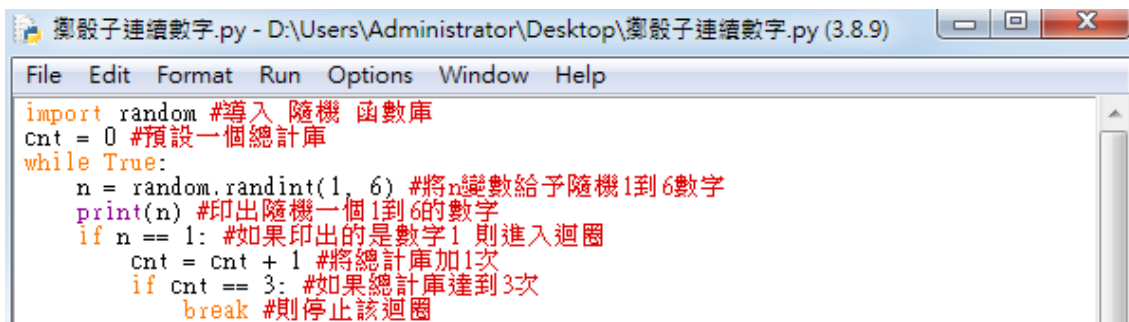
```
*untitled*
File Edit Format Run Options Window Help
import random
cnt = 0
while True:
    n = random.randint(1, 6)
    print(n)
    if n == 1:
        cnt = cnt + 1
        if cnt == 3:
            break
```

執行結果：



```
IDLE Shell 3.8.9
File Edit Shell Debug Options Window Help
Python 3.8.9 (tags/v3.8.9:a743f81, Apr 6 2021, 14:02:34) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:\Users\Administrator\Desktop\擲骰子連續數字.py =====
>>>
5
3
2
2
1
6
6
3
4
2
1
1
>>>
```

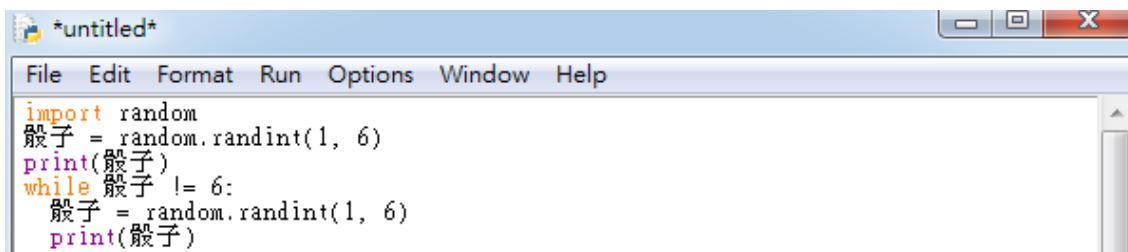
程式解說：



```
擲骰子連續數字.py - D:\Users\Administrator\Desktop\擲骰子連續數字.py (3.8.9)
File Edit Format Run Options Window Help
import random #導入 隨機 函數庫
cnt = 0 #預設一個總計庫
while True:
    n = random.randint(1, 6) #將n變數給予隨機1到6數字
    print(n) #印出隨機一個1到6的數字
    if n == 1: #如果印出的是數字1 則進入迴圈
        cnt = cnt + 1 #將總計庫加1次
        if cnt == 3: #如果總計庫達到3次
            break #則停止該迴圈
```

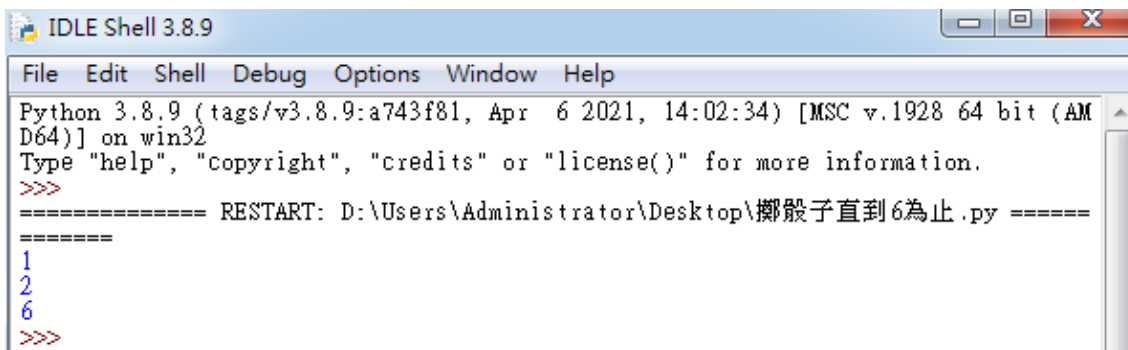
## 09 擲骰字直到 6 為止

程式碼：



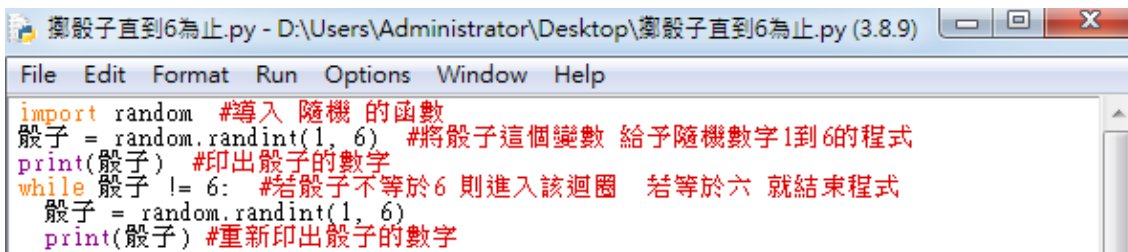
```
*untitled*
File Edit Format Run Options Window Help
import random
骰子 = random.randint(1, 6)
print(骰子)
while 骰子 != 6:
    骰子 = random.randint(1, 6)
    print(骰子)
```

執行結果：



```
IDLE Shell 3.8.9
File Edit Shell Debug Options Window Help
Python 3.8.9 (tags/v3.8.9:a743f81, Apr 6 2021, 14:02:34) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:\Users\Administrator\Desktop\擲骰子直到6為止.py =====
=====
1
2
6
>>>
```

程式解說：



```
擲骰子直到6為止.py - D:\Users\Administrator\Desktop\擲骰子直到6為止.py (3.8.9)
File Edit Format Run Options Window Help
import random #導入 隨機的函數
骰子 = random.randint(1, 6) #將骰子這個變數 給予隨機數字1到6的程式
print(骰子) #印出骰子的數字
while 骰子 != 6: #若骰子不等於6 則進入該迴圈 若等於六 就結束程式
    骰子 = random.randint(1, 6)
    print(骰子) #重新印出骰子的數字
```

# 10 計算找錢

程式碼：

```
File Edit Format Run Options Window Help
購買金額 = int(input('請輸入購買金額?'))
找錢 = 1000 - 購買金額
while 找錢 > 0:
    if 找錢 >= 500:
        print("需要1張500元")
        找錢 = 找錢 % 500
    elif 找錢 >= 100:
        print("需要",找錢//100,"張100元")
        找錢 = 找錢 % 100
    elif 找錢 >= 50:
        print("需要",找錢//50,"個50元")
        找錢 = 找錢 % 50
    elif 找錢 >= 10:
        print("需要",找錢//10,"個10元")
        找錢 = 找錢 % 10
    elif 找錢 >= 5:
        print("需要",找錢//5,"個5元")
        找錢 = 找錢 % 5
    else:
        print("需要",找錢,"個1元")
        找錢 = 0
```

執行結果：

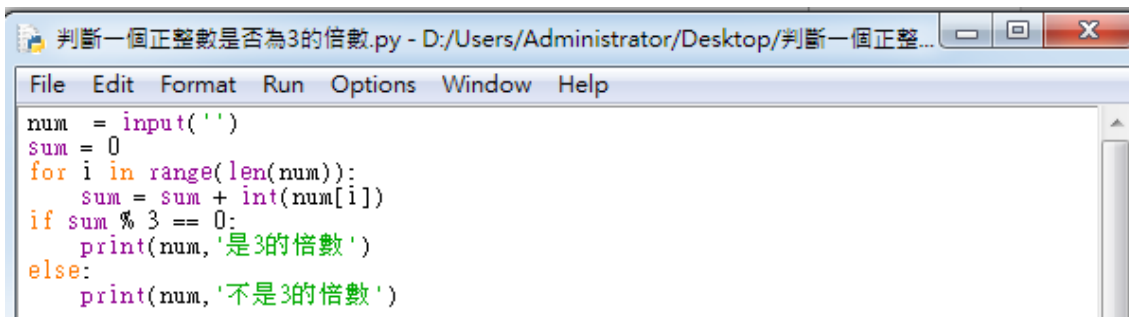
```
File Edit Shell Debug Options Window Help
Python 3.8.9 (tags/v3.8.9:a743f81, Apr 6 2021, 14:02:34) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:\Users\Administrator\Desktop\計算找錢.py =====
====
請輸入購買金額? 900
需要 1 張100元
>>>
```

程式解說：

```
購買金額 = int(input('請輸入購買金額?')) #讓使用者輸入購買金額
找錢 = 1000 - 購買金額 #假設最大值為一張千元 則用千元扣掉購買金額
while 找錢 > 0: # 找的錢要大於0元 才能進入下面的判斷
    if 找錢 >= 500: #若找錢大於或等於500元 則印出 需要一張500元
        print("需要1張500元")
        找錢 = 找錢 % 500 #印出後 將找錢除500 用%可以取餘數
    elif 找錢 >= 100: #若找錢大於或等於100元 則進入判斷
        print("需要",找錢//100,"張100元") #這裡將找錢整除100 取商數 可以得知需要幾
        找錢 = 找錢 % 100 #100元的判斷印出後 將找錢用%除 可以取餘數 在進入下一個判斷
    elif 找錢 >= 50:
        print("需要",找錢//50,"個50元")
        找錢 = 找錢 % 50
    elif 找錢 >= 10:
        print("需要",找錢//10,"個10元")
        找錢 = 找錢 % 10
    elif 找錢 >= 5:
        print("需要",找錢//5,"個5元")
        找錢 = 找錢 % 5
    else: #若找錢不到5元 這跳到該迴圈 使用1元找錢
        print("需要",找錢,"個1元")
        找錢 = 0 #計算完後 將找錢歸零
```

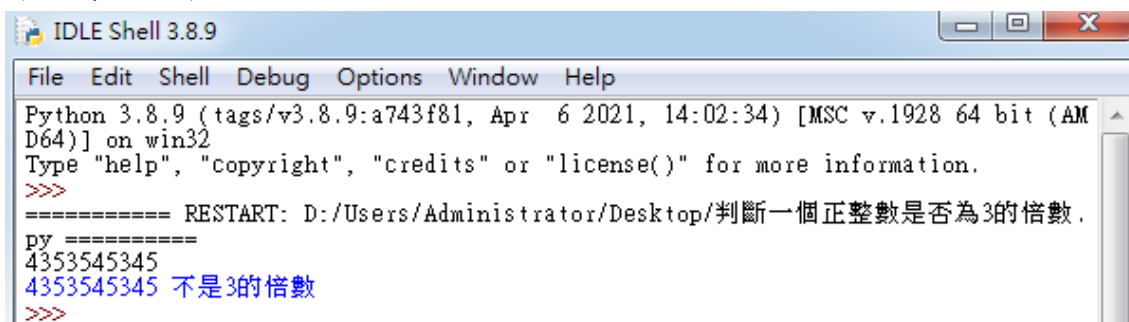
# 11 是否為 3 的倍數

程式碼：



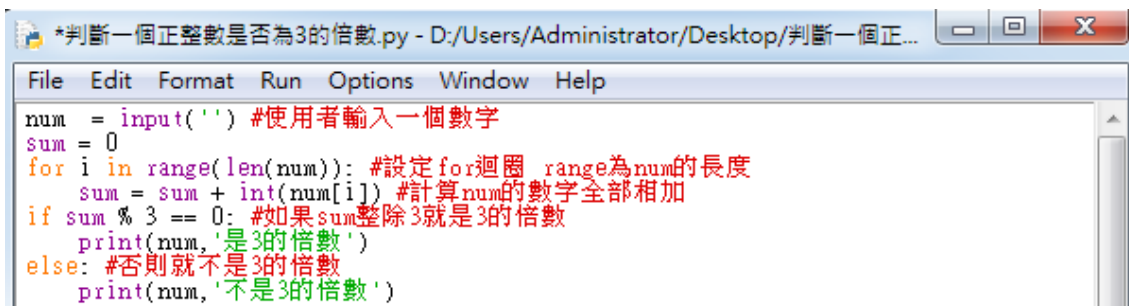
```
判斷一個正整數是否為3的倍數.py - D:/Users/Administrator/Desktop/判斷一個正整...
File Edit Format Run Options Window Help
num = input('')
sum = 0
for i in range(len(num)):
    sum = sum + int(num[i])
if sum % 3 == 0:
    print(num, '是3的倍數')
else:
    print(num, '不是3的倍數')
```

執行結果：



```
IDLE Shell 3.8.9
File Edit Shell Debug Options Window Help
Python 3.8.9 (tags/v3.8.9:a743f81, Apr 6 2021, 14:02:34) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:/Users/Administrator/Desktop/判斷一個正整數是否為3的倍數.py =====
4353545345
4353545345 不是3的倍數
>>>
```

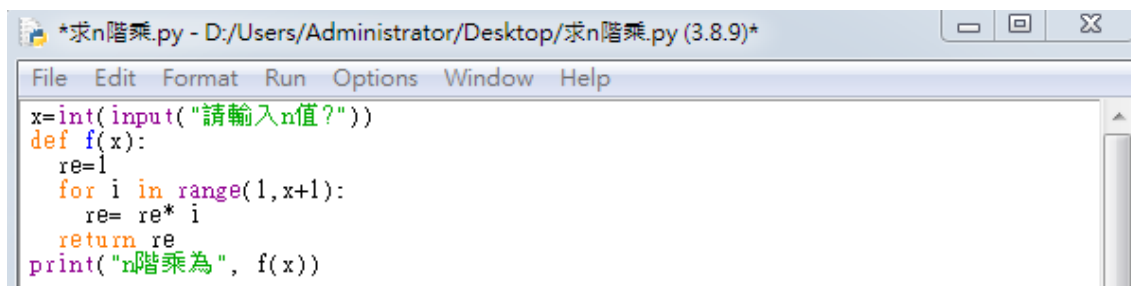
程式解說：



```
*判斷一個正整數是否為3的倍數.py - D:/Users/Administrator/Desktop/判斷一個正...
File Edit Format Run Options Window Help
num = input('') #使用者輸入一個數字
sum = 0
for i in range(len(num)): #設定for迴圈 range為num的長度
    sum = sum + int(num[i]) #計算num的數字全部相加
if sum % 3 == 0: #如果sum整除3就是3的倍數
    print(num, '是3的倍數')
else: #否則就不是3的倍數
    print(num, '不是3的倍數')
```

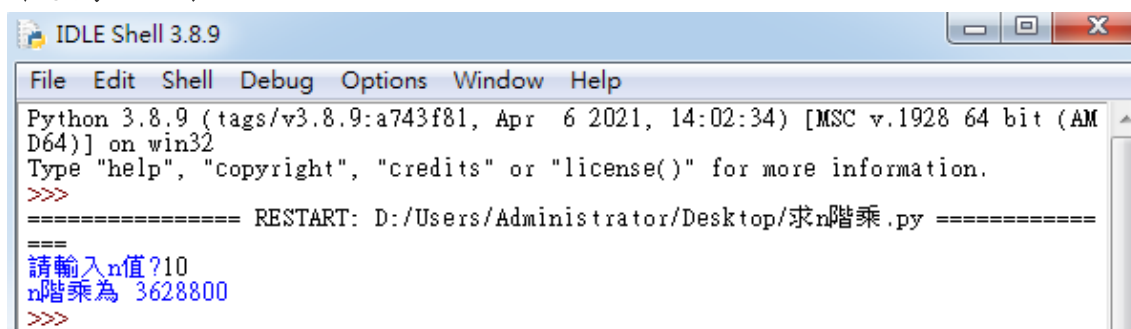
## 12 求 n 階乘

程式碼：



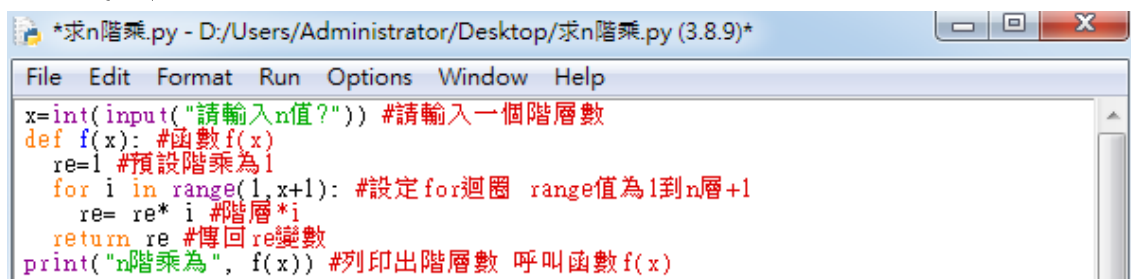
```
*求n階乘.py - D:/Users/Administrator/Desktop/求n階乘.py (3.8.9)*
File Edit Format Run Options Window Help
x=int(input("請輸入n值?"))
def f(x):
    re=1
    for i in range(1,x+1):
        re= re* i
    return re
print("n階乘為", f(x))
```

執行結果：



```
IDLE Shell 3.8.9
File Edit Shell Debug Options Window Help
Python 3.8.9 (tags/v3.8.9:a743f81, Apr 6 2021, 14:02:34) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:/Users/Administrator/Desktop/求n階乘.py =====
>>>
請輸入n值?10
n階乘為 3628800
>>>
```

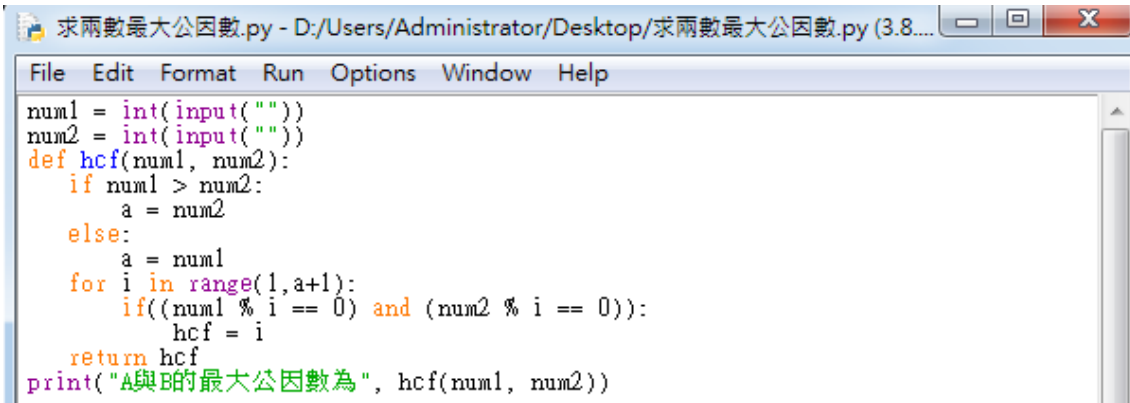
程式解說：



```
*求n階乘.py - D:/Users/Administrator/Desktop/求n階乘.py (3.8.9)*
File Edit Format Run Options Window Help
x=int(input("請輸入n值?")) #請輸入一個階層數
def f(x): #函數f(x)
    re=1 #預設階乘為1
    for i in range(1,x+1): #設定for迴圈 range值為1到n層+1
        re= re* i #階層*i
    return re #傳回re變數
print("n階乘為", f(x)) #列印出階層數 呼叫函數f(x)
```

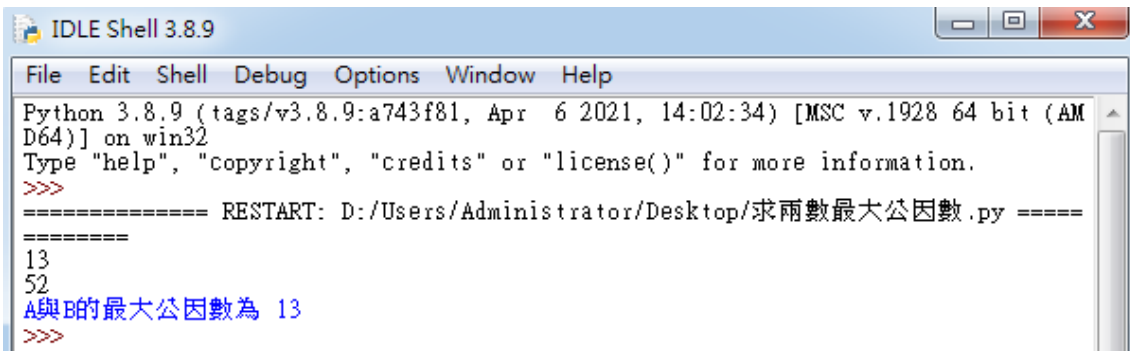
## 13 求兩數最大公因數

程式碼：



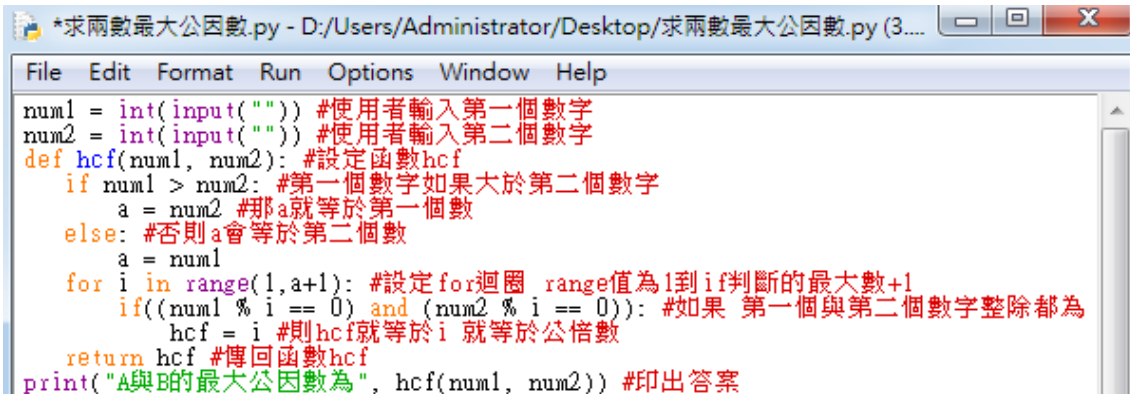
```
求兩數最大公因數.py - D:/Users/Administrator/Desktop/求兩數最大公因數.py (3.8...
File Edit Format Run Options Window Help
num1 = int(input(""))
num2 = int(input(""))
def hcf(num1, num2):
    if num1 > num2:
        a = num2
    else:
        a = num1
    for i in range(1,a+1):
        if((num1 % i == 0) and (num2 % i == 0)):
            hcf = i
    return hcf
print("A與B的最大公因數為", hcf(num1, num2))
```

執行結果：



```
IDLE Shell 3.8.9
File Edit Shell Debug Options Window Help
Python 3.8.9 (tags/v3.8.9:a743f81, Apr 6 2021, 14:02:34) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:/Users/Administrator/Desktop/求兩數最大公因數 .py =====
=====
13
52
A與B的最大公因數為 13
>>>
```

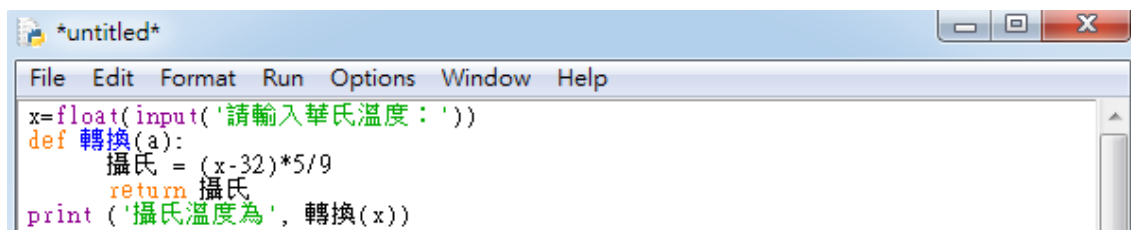
程式解說：



```
*求兩數最大公因數.py - D:/Users/Administrator/Desktop/求兩數最大公因數.py (3...
File Edit Format Run Options Window Help
num1 = int(input("")) #使用者輸入第一個數字
num2 = int(input("")) #使用者輸入第二個數字
def hcf(num1, num2): #設定函數hcf
    if num1 > num2: #第一個數字如果大於第二個數字
        a = num2 #那a就等於第一個數
    else: #否則a會等於第二個數
        a = num1
    for i in range(1,a+1): #設定for迴圈 range值為1到if判斷的最大數+1
        if((num1 % i == 0) and (num2 % i == 0)): #如果 第一個與第二個數字整除都為
            hcf = i #則hcf就等於i 就等於公倍數
    return hcf #傳回函數hcf
print("A與B的最大公因數為", hcf(num1, num2)) #印出答案
```

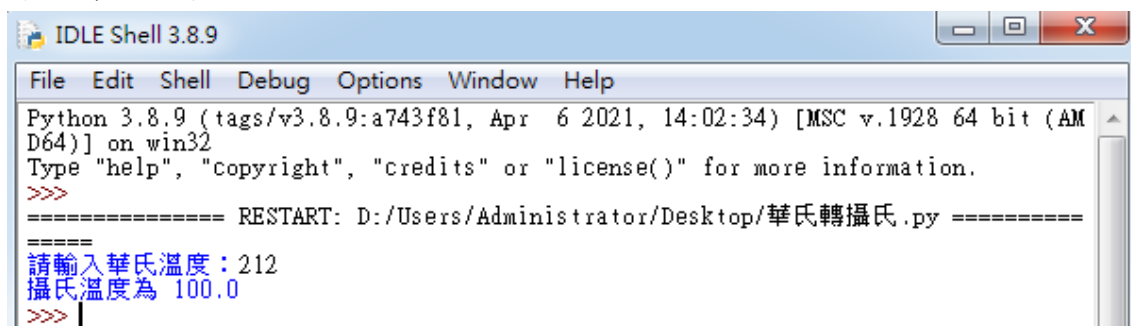
## 14 華氏轉攝氏

程式碼：



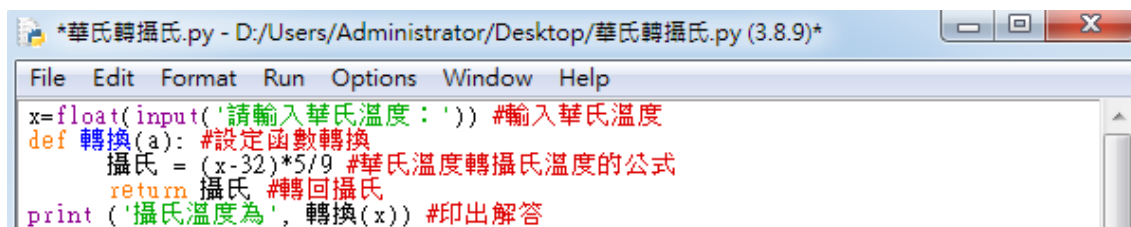
```
*untitled*
File Edit Format Run Options Window Help
x=float(input('請輸入華氏溫度：'))
def 轉換(a):
    攝氏 = (x-32)*5/9
    return 攝氏
print ('攝氏溫度為', 轉換(x))
```

執行結果：



```
IDLE Shell 3.8.9
File Edit Shell Debug Options Window Help
Python 3.8.9 (tags/v3.8.9:a743f81, Apr 6 2021, 14:02:34) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:/Users/Administrator/Desktop/華氏轉攝氏.py =====
=====
請輸入華氏溫度：212
攝氏溫度為 100.0
>>> |
```

程式解說：

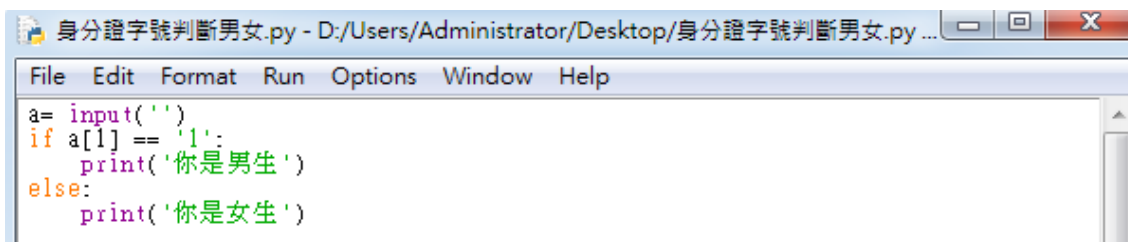


```
*華氏轉攝氏.py - D:/Users/Administrator/Desktop/華氏轉攝氏.py (3.8.9)*
File Edit Format Run Options Window Help
x=float(input('請輸入華氏溫度：')) #輸入華氏溫度
def 轉換(a): #設定函數轉換
    攝氏 = (x-32)*5/9 #華氏溫度轉攝氏溫度的公式
    return 攝氏 #轉回攝氏
print ('攝氏溫度為', 轉換(x)) #印出解答
```



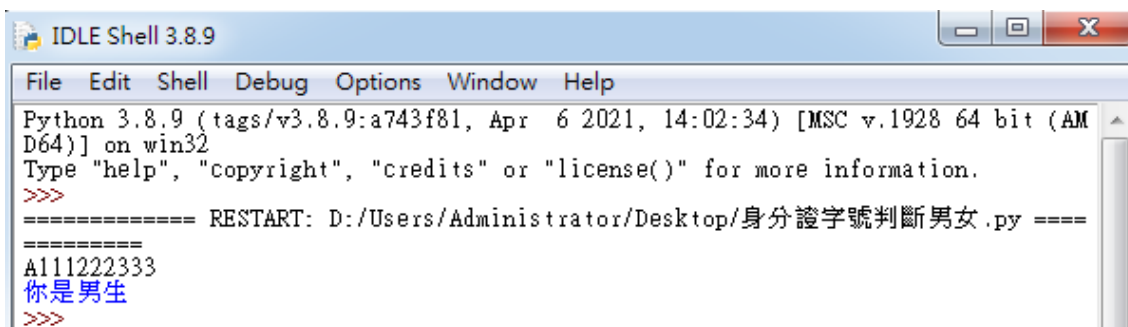
## 15 身分證字號判斷男女

程式碼：



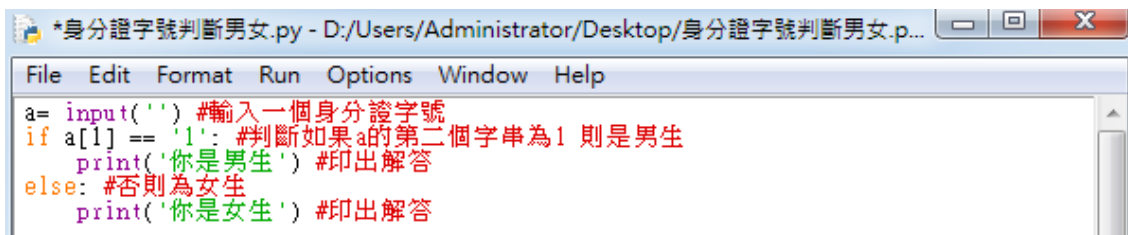
```
身分證字號判斷男女.py - D:/Users/Administrator/Desktop/身分證字號判斷男女.py ...
File Edit Format Run Options Window Help
a= input('')
if a[1] == '1':
    print('你是男生')
else:
    print('你是女生')
```

執行結果：



```
IDLE Shell 3.8.9
File Edit Shell Debug Options Window Help
Python 3.8.9 (tags/v3.8.9:a743f81, Apr 6 2021, 14:02:34) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:/Users/Administrator/Desktop/身分證字號判斷男女 .py =====
>>>
A111222333
你是男生
>>>
```

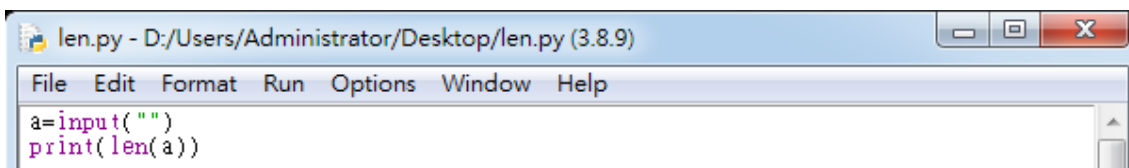
程式解說：



```
*身分證字號判斷男女.py - D:/Users/Administrator/Desktop/身分證字號判斷男女.p...
File Edit Format Run Options Window Help
a= input('') #輸入一個身分證字號
if a[1] == '1': #判斷如果a的第二個字串為1 則是男生
    print('你是男生') #印出解答
else: #否則為女生
    print('你是女生') #印出解答
```

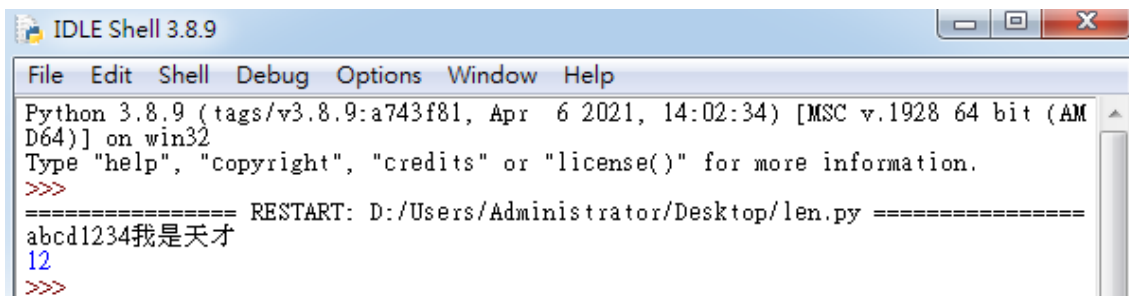
## 16-1 len

程式碼：



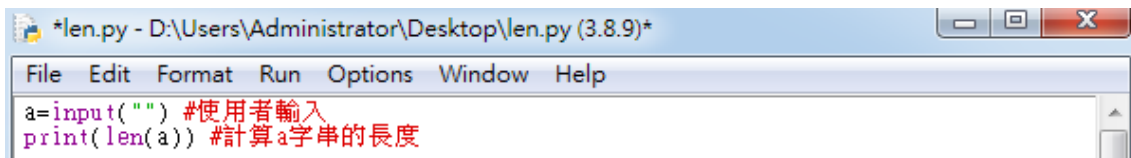
```
len.py - D:/Users/Administrator/Desktop/len.py (3.8.9)
File Edit Format Run Options Window Help
a=input("")
print(len(a))
```

執行結果：



```
IDLE Shell 3.8.9
File Edit Shell Debug Options Window Help
Python 3.8.9 (tags/v3.8.9:a743f81, Apr 6 2021, 14:02:34) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:/Users/Administrator/Desktop/len.py =====
abcd1234我是天才
12
>>>
```

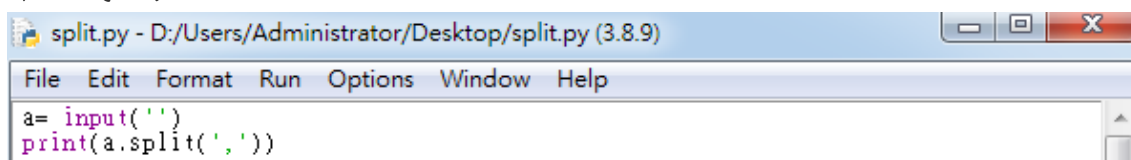
程式解說：



```
*len.py - D:\Users\Administrator\Desktop\len.py (3.8.9)*
File Edit Format Run Options Window Help
a=input("") #使用者輸入
print(len(a)) #計算a字串的長度
```

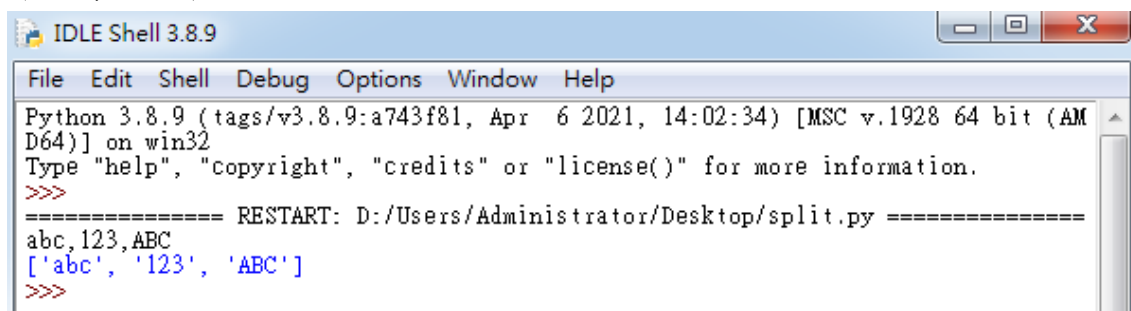
## 16-2 split

程式碼：



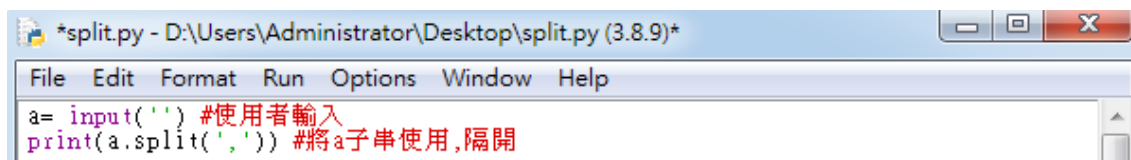
```
split.py - D:/Users/Administrator/Desktop/split.py (3.8.9)
File Edit Format Run Options Window Help
a= input('')
print(a.split(','))
```

執行結果：



```
IDLE Shell 3.8.9
File Edit Shell Debug Options Window Help
Python 3.8.9 (tags/v3.8.9:a743f81, Apr 6 2021, 14:02:34) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:/Users/Administrator/Desktop/split.py =====
abc,123,ABC
['abc', '123', 'ABC']
>>>
```

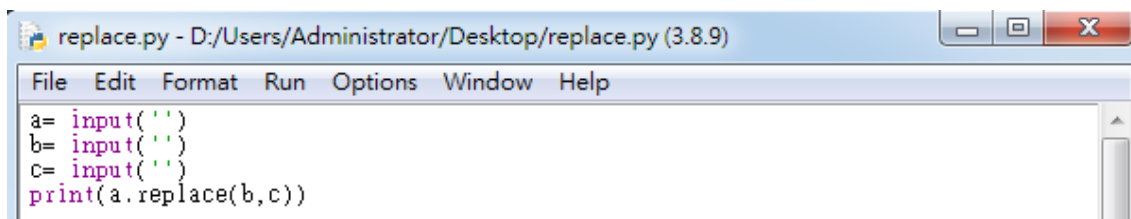
程式解說：



```
*split.py - D:\Users\Administrator\Desktop\split.py (3.8.9)*
File Edit Format Run Options Window Help
a= input('') #使用者輸入
print(a.split(',')) #將a子串使用,隔開
```

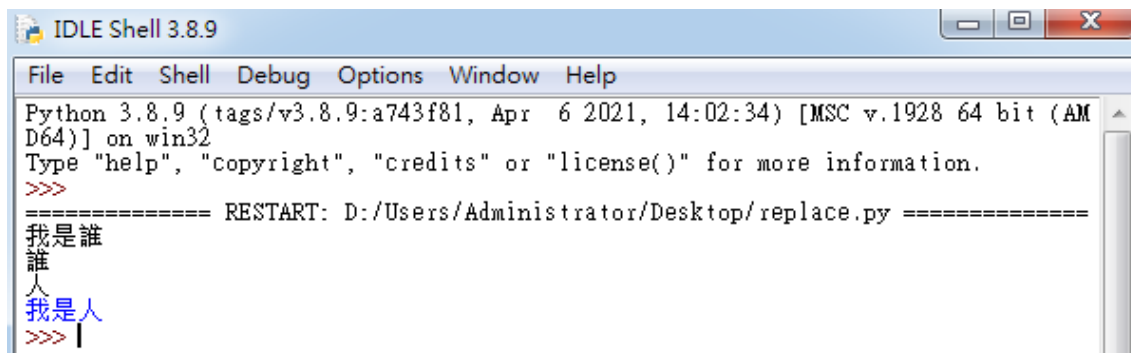
## 16-3 replace

程式碼：



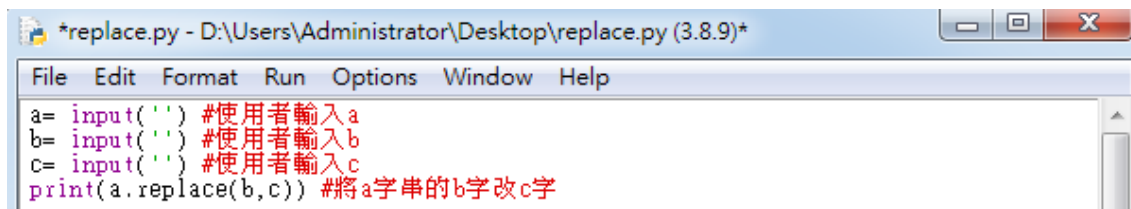
```
replace.py - D:/Users/Administrator/Desktop/replace.py (3.8.9)
File Edit Format Run Options Window Help
a= input('')
b= input('')
c= input('')
print(a.replace(b,c))
```

執行結果：



```
IDLE Shell 3.8.9
File Edit Shell Debug Options Window Help
Python 3.8.9 (tags/v3.8.9:a743f81, Apr 6 2021, 14:02:34) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:/Users/Administrator/Desktop/replace.py =====
我是誰
誰
人
我是人
>>> |
```

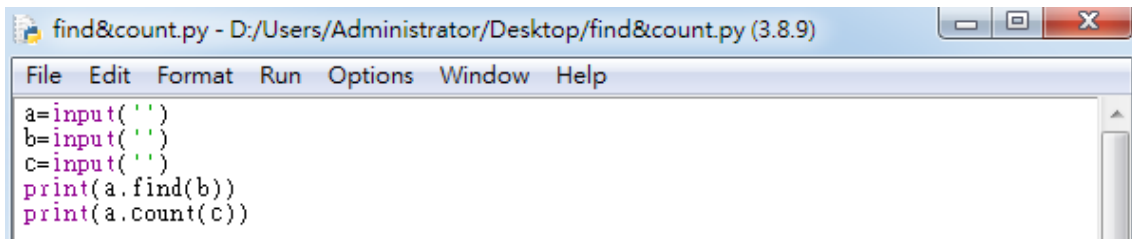
程式解說：



```
*replace.py - D:\Users\Administrator\Desktop\replace.py (3.8.9)*
File Edit Format Run Options Window Help
a= input('') #使用者輸入a
b= input('') #使用者輸入b
c= input('') #使用者輸入c
print(a.replace(b,c)) #將a字串的b字改c字
```

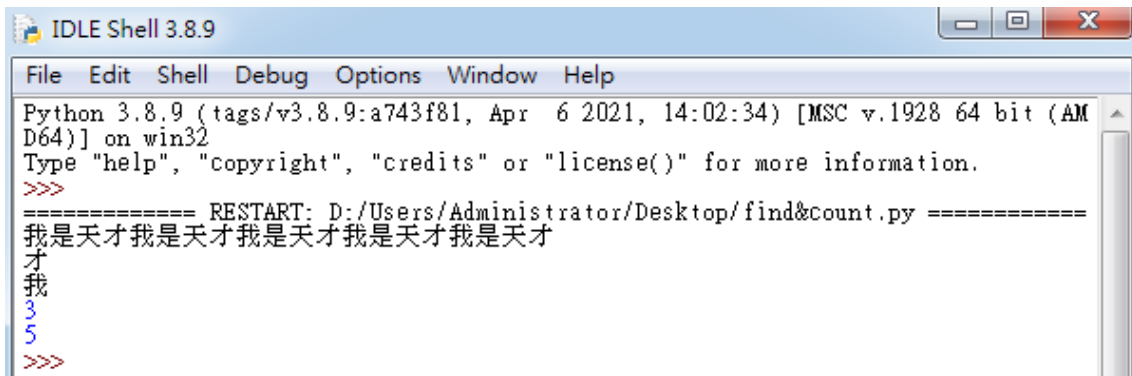
## 16-4 find&count

程式碼：



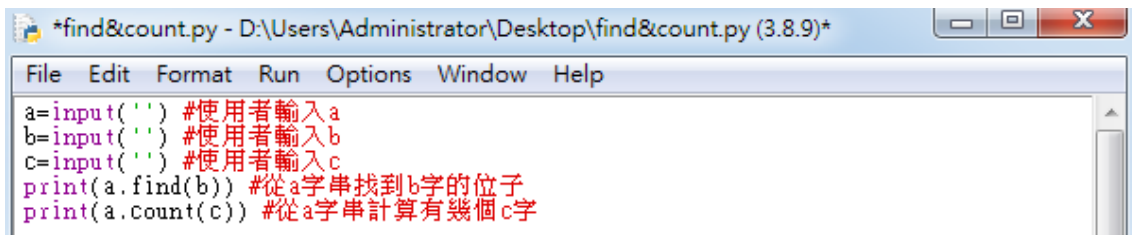
```
find&count.py - D:/Users/Administrator/Desktop/find&count.py (3.8.9)
File Edit Format Run Options Window Help
a=input('')
b=input('')
c=input('')
print(a.find(b))
print(a.count(c))
```

執行結果：



```
IDLE Shell 3.8.9
File Edit Shell Debug Options Window Help
Python 3.8.9 (tags/v3.8.9:a743f81, Apr 6 2021, 14:02:34) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:/Users/Administrator/Desktop/find&count.py =====
我是天才我是天才我是天才我是天才我是天才
才
我
3
5
>>>
```

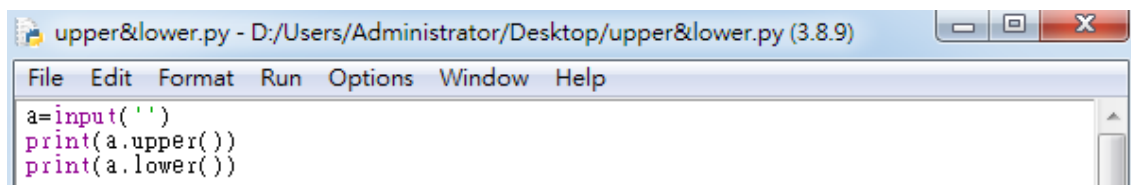
程式解說：



```
*find&count.py - D:\Users\Administrator\Desktop\find&count.py (3.8.9)*
File Edit Format Run Options Window Help
a=input('') #使用者輸入a
b=input('') #使用者輸入b
c=input('') #使用者輸入c
print(a.find(b)) #從a字串找到b字的位子
print(a.count(c)) #從a字串計算有幾個c字
```

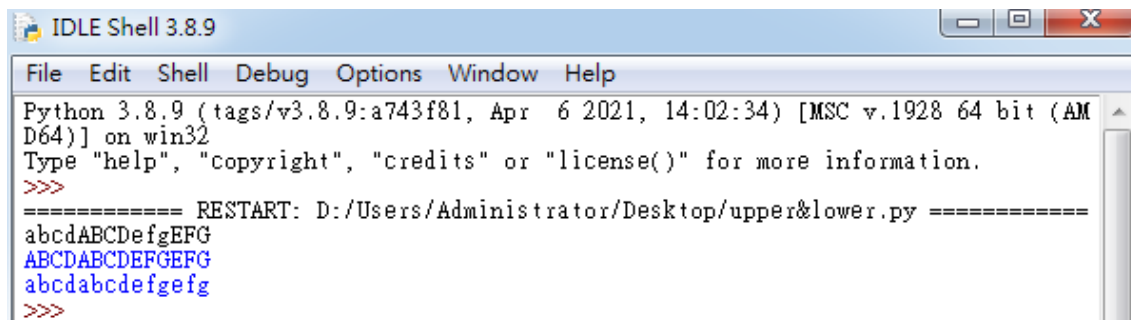
## 16-5 upper&lower

程式碼：



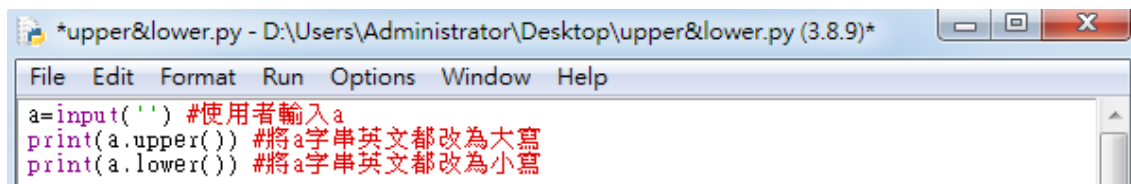
```
upper&lower.py - D:/Users/Administrator/Desktop/upper&lower.py (3.8.9)
File Edit Format Run Options Window Help
a=input('')
print(a.upper())
print(a.lower())
```

執行結果：



```
IDLE Shell 3.8.9
File Edit Shell Debug Options Window Help
Python 3.8.9 (tags/v3.8.9:a743f81, Apr 6 2021, 14:02:34) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:/Users/Administrator/Desktop/upper&lower.py =====
abcdABCDefgEFG
ABCDABCDEFGEFG
abcdabcdeffefg
>>>
```

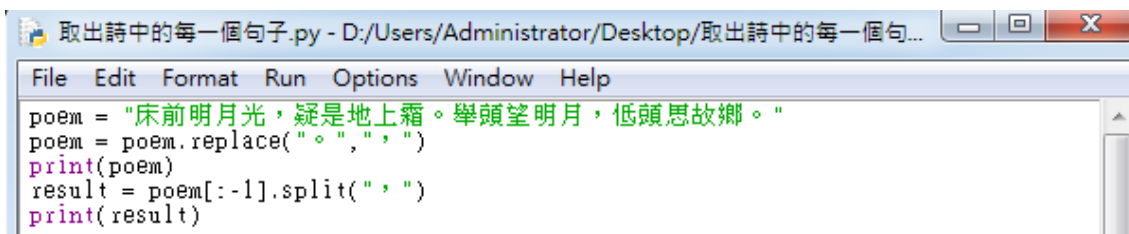
程式解說：



```
*upper&lower.py - D:\Users\Administrator\Desktop\upper&lower.py (3.8.9)*
File Edit Format Run Options Window Help
a=input('') #使用者輸入 a
print(a.upper()) #將a字串英文都改為大寫
print(a.lower()) #將a字串英文都改為小寫
```

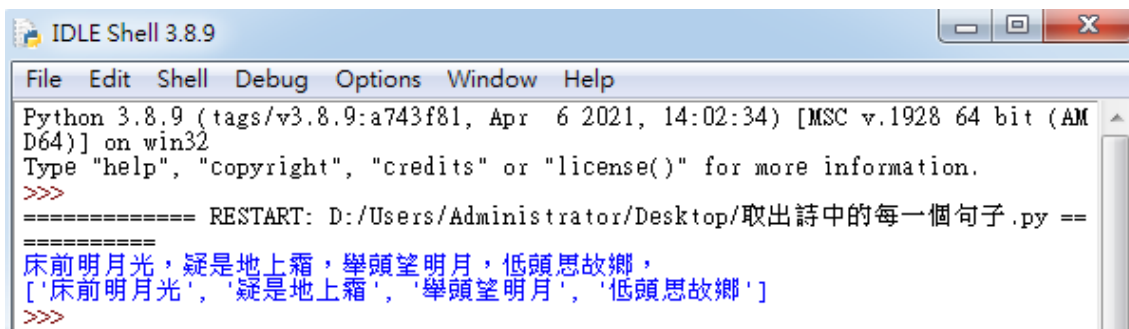
## 17 取出詩中的每一個句子

程式碼：



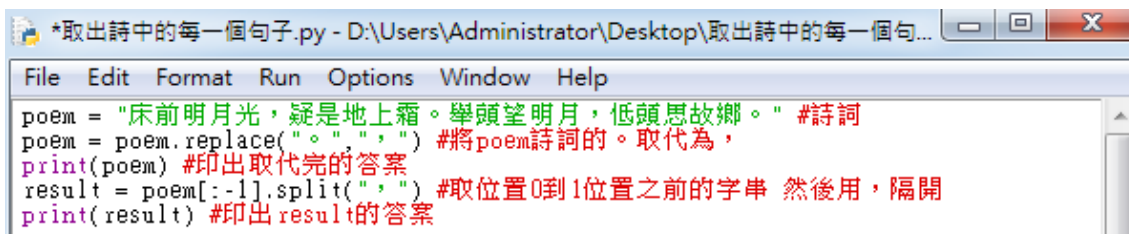
```
取出詩中的每一個句子.py - D:/Users/Administrator/Desktop/取出詩中的每一個句...
File Edit Format Run Options Window Help
poem = "床前明月光，疑是地上霜。舉頭望明月，低頭思故鄉。"
poem = poem.replace("。",",")
print(poem)
result = poem[:-1].split(",")
print(result)
```

執行結果：



```
IDLE Shell 3.8.9
File Edit Shell Debug Options Window Help
Python 3.8.9 (tags/v3.8.9:a743f81, Apr 6 2021, 14:02:34) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:/Users/Administrator/Desktop/取出詩中的每一個句子.py =====
床前明月光，疑是地上霜，舉頭望明月，低頭思故鄉，
['床前明月光', '疑是地上霜', '舉頭望明月', '低頭思故鄉']
>>>
```

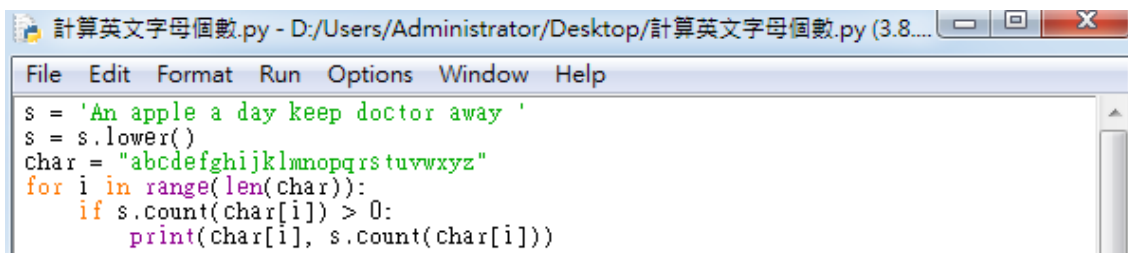
程式解說：



```
*取出詩中的每一個句子.py - D:\Users\Administrator\Desktop\取出詩中的每一個句...
File Edit Format Run Options Window Help
poem = "床前明月光，疑是地上霜。舉頭望明月，低頭思故鄉。" #詩詞
poem = poem.replace("。",",") #將poem詩詞的。取代為，
print(poem) #印出取代完的答案
result = poem[:-1].split(",") #取位置0到1位置之前的字串 然後用，隔開
print(result) #印出result的答案
```

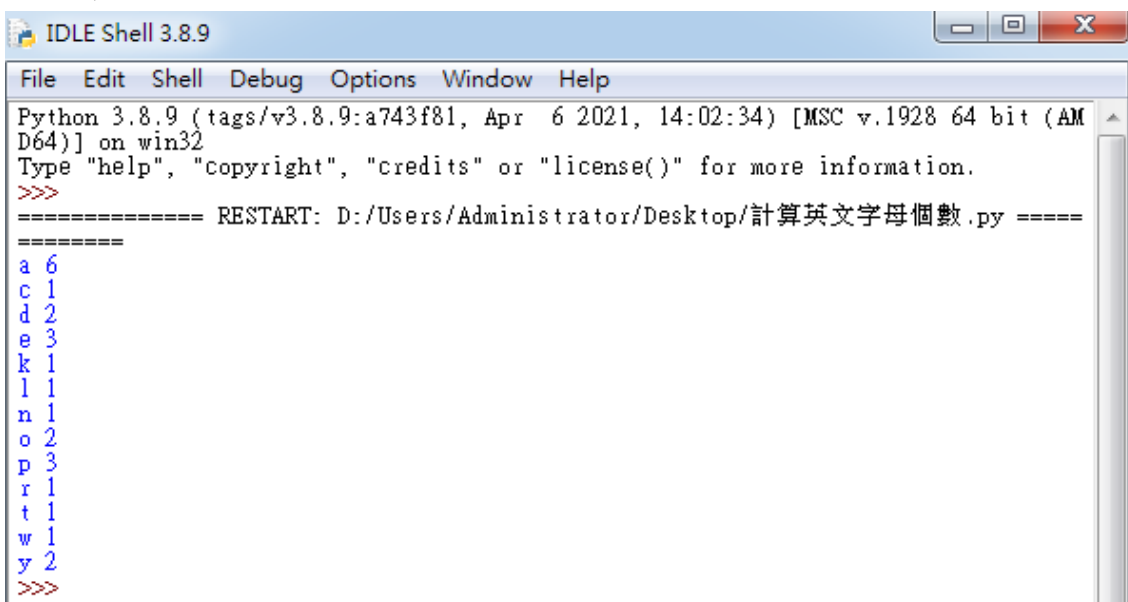
## 18 計算英文字母個數

程式碼：



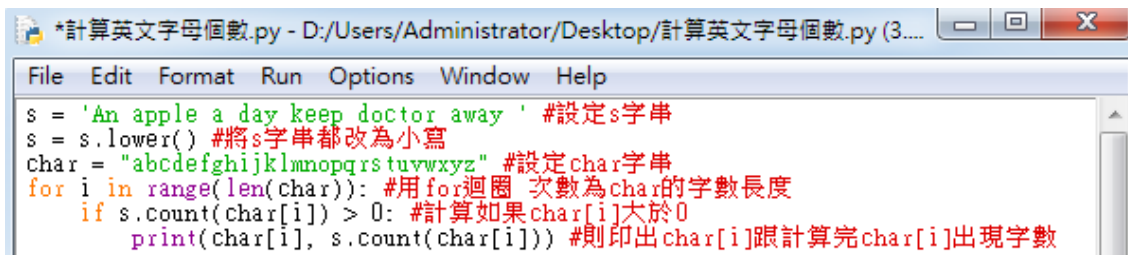
```
計算英文字母個數.py - D:/Users/Administrator/Desktop/計算英文字母個數.py (3.8...
File Edit Format Run Options Window Help
s = 'An apple a day keep doctor away '
s = s.lower()
char = "abcdefghijklmnopqrstuvwxyz"
for i in range(len(char)):
    if s.count(char[i]) > 0:
        print(char[i], s.count(char[i]))
```

執行結果：



```
IDLE Shell 3.8.9
File Edit Shell Debug Options Window Help
Python 3.8.9 (tags/v3.8.9:a743f81, Apr 6 2021, 14:02:34) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:/Users/Administrator/Desktop/計算英文字母個數 .py =====
=====
a 6
c 1
d 2
e 3
k 1
l 1
n 1
o 2
p 3
r 1
t 1
w 1
y 2
>>>
```

程式解說：

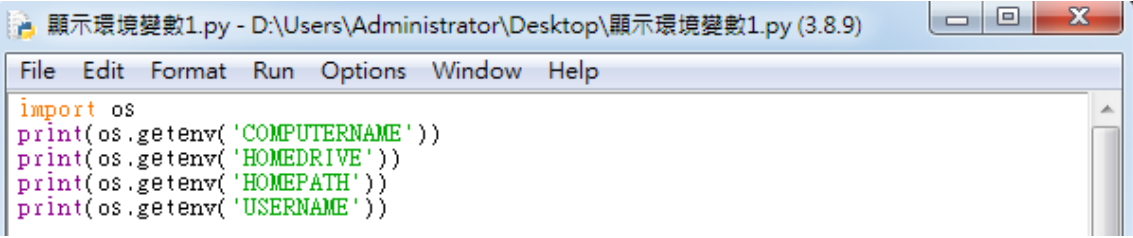


```
*計算英文字母個數.py - D:/Users/Administrator/Desktop/計算英文字母個數.py (3...
File Edit Format Run Options Window Help
s = 'An apple a day keep doctor away ' #設定s字串
s = s.lower() #將s字串都改為小寫
char = "abcdefghijklmnopqrstuvwxyz" #設定char字串
for i in range(len(char)): #用for迴圈 次數為char的字數長度
    if s.count(char[i]) > 0: #計算如果char[i]大於0
        print(char[i], s.count(char[i])) #則印出char[i]跟計算完char[i]出現字數
```



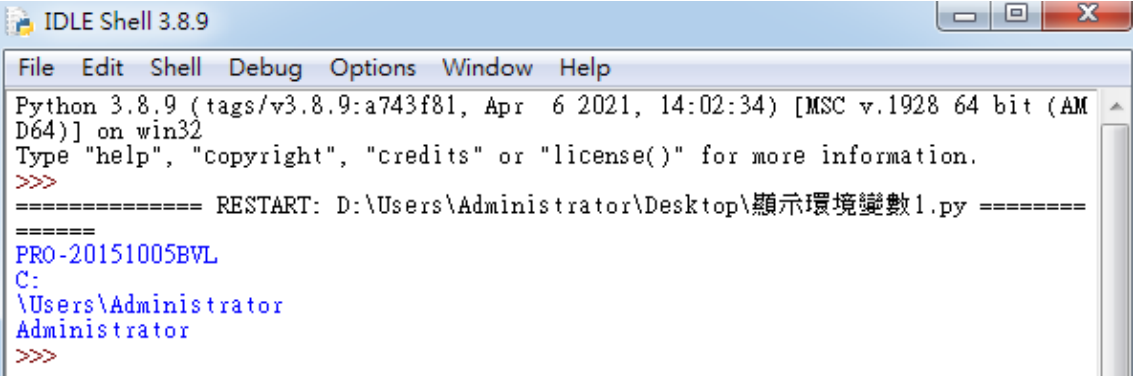
## 19 顯示環境變數

程式碼：



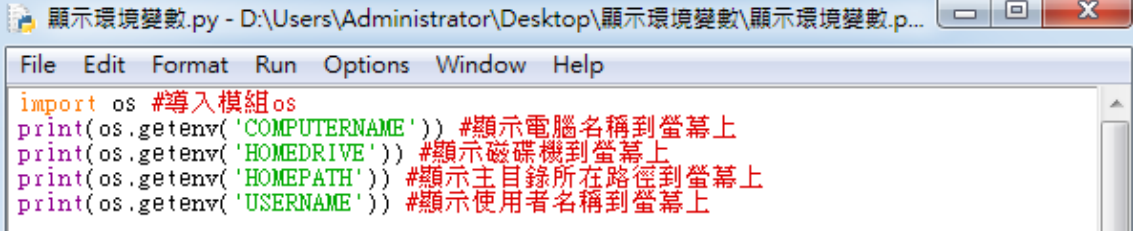
```
顯示環境變數1.py - D:\Users\Administrator\Desktop\顯示環境變數1.py (3.8.9)
File Edit Format Run Options Window Help
import os
print(os.getenv('COMPUTERNAME'))
print(os.getenv('HOMEDRIVE'))
print(os.getenv('HOMEPATH'))
print(os.getenv('USERNAME'))
```

執行結果：



```
IDLE Shell 3.8.9
File Edit Shell Debug Options Window Help
Python 3.8.9 (tags/v3.8.9:a743f81, Apr 6 2021, 14:02:34) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:\Users\Administrator\Desktop\顯示環境變數1.py =====
=====
PRO-20151005BVL
C:
\Users\Administrator
Administrator
>>>
```

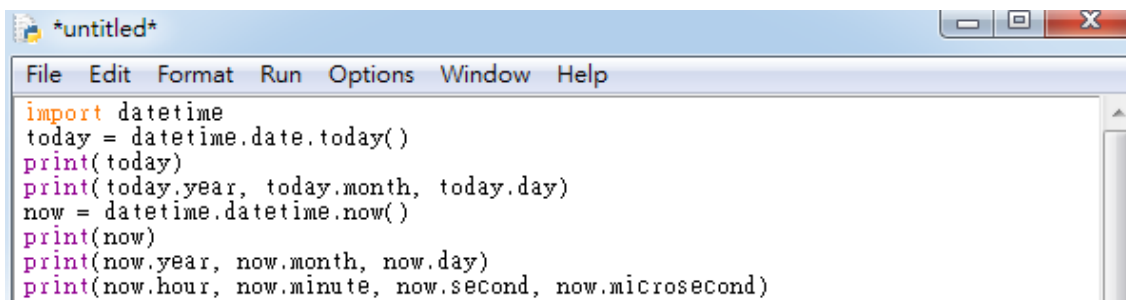
程式解說：



```
顯示環境變數.py - D:\Users\Administrator\Desktop\顯示環境變數\顯示環境變數.p...
File Edit Format Run Options Window Help
import os #導入模組os
print(os.getenv('COMPUTERNAME')) #顯示電腦名稱到螢幕上
print(os.getenv('HOMEDRIVE')) #顯示磁碟機到螢幕上
print(os.getenv('HOMEPATH')) #顯示主目錄所在路徑到螢幕上
print(os.getenv('USERNAME')) #顯示使用者名稱到螢幕上
```

## 20 顯示目前時間

程式碼：

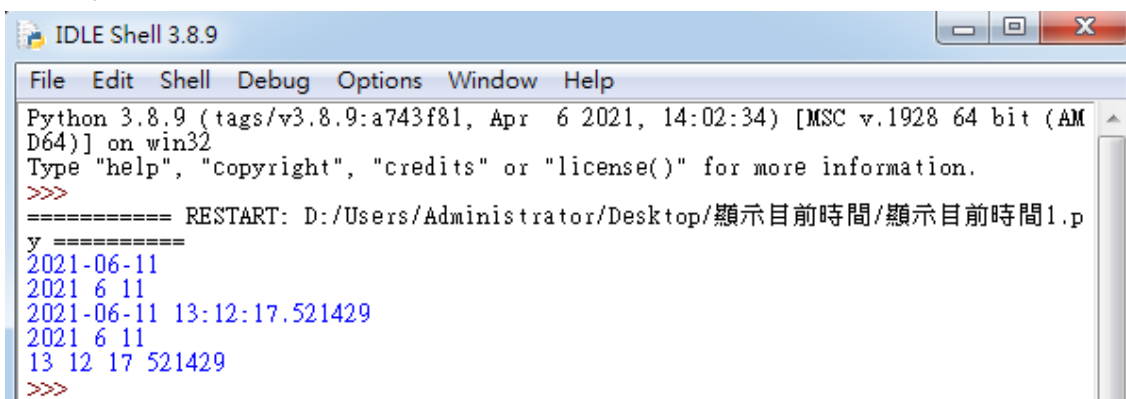


```

File Edit Format Run Options Window Help
import datetime
today = datetime.date.today()
print(today)
print(today.year, today.month, today.day)
now = datetime.datetime.now()
print(now)
print(now.year, now.month, now.day)
print(now.hour, now.minute, now.second, now.microsecond)

```

執行結果：

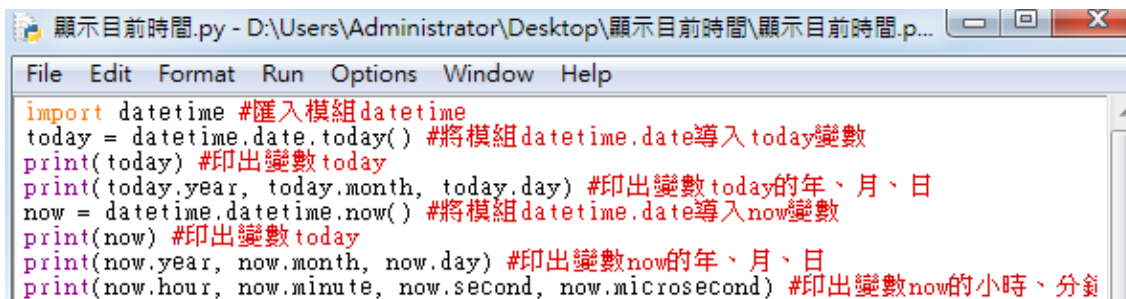


```

IDLE Shell 3.8.9
File Edit Shell Debug Options Window Help
Python 3.8.9 (tags/v3.8.9:a743f81, Apr 6 2021, 14:02:34) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:/Users/Administrator/Desktop/顯示目前時間/顯示目前時間1.p
y =====
2021-06-11
2021 6 11
2021-06-11 13:12:17.521429
2021 6 11
13 12 17 521429
>>>

```

程式解：



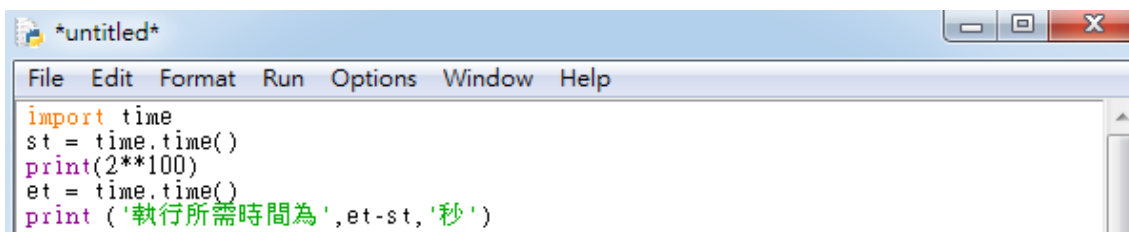
```

顯示目前時間.py - D:\Users\Administrator\Desktop\顯示目前時間\顯示目前時間.p...
File Edit Format Run Options Window Help
import datetime #匯入模組datetime
today = datetime.date.today() #將模組datetime.date導入today變數
print(today) #印出變數today
print(today.year, today.month, today.day) #印出變數today的年、月、日
now = datetime.datetime.now() #將模組datetime.datetime導入now變數
print(now) #印出變數now
print(now.year, now.month, now.day) #印出變數now的年、月、日
print(now.hour, now.minute, now.second, now.microsecond) #印出變數now的小時、分鐘

```

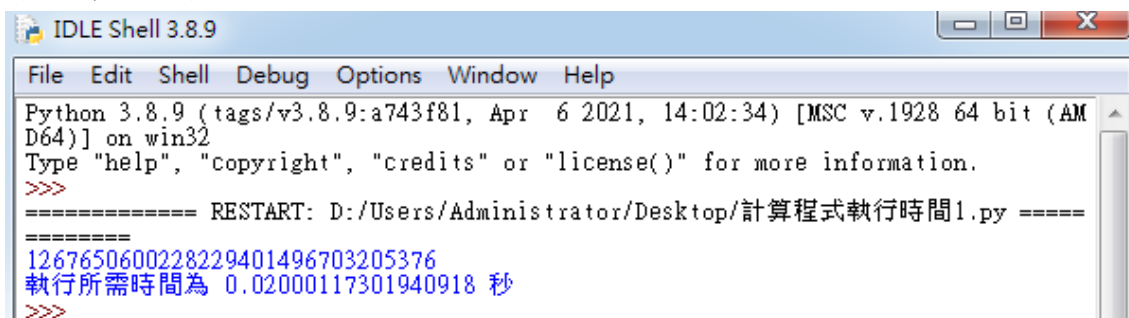
## 21 計算程式執行時間

程式碼：



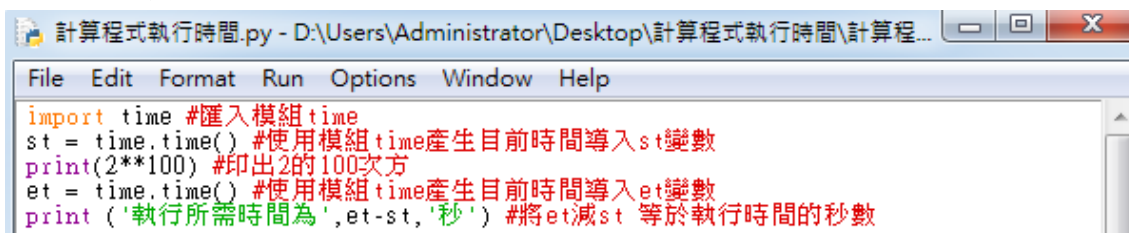
```
*untitled*
File Edit Format Run Options Window Help
import time
st = time.time()
print(2**100)
et = time.time()
print('執行所需時間為',et-st,'秒')
```

執行結果：



```
IDLE Shell 3.8.9
File Edit Shell Debug Options Window Help
Python 3.8.9 (tags/v3.8.9:a743f81, Apr 6 2021, 14:02:34) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:/Users/Administrator/Desktop/計算程式執行時間1.py =====
=====
1267650600228229401496703205376
執行所需時間為 0.02000117301940918 秒
>>>
```

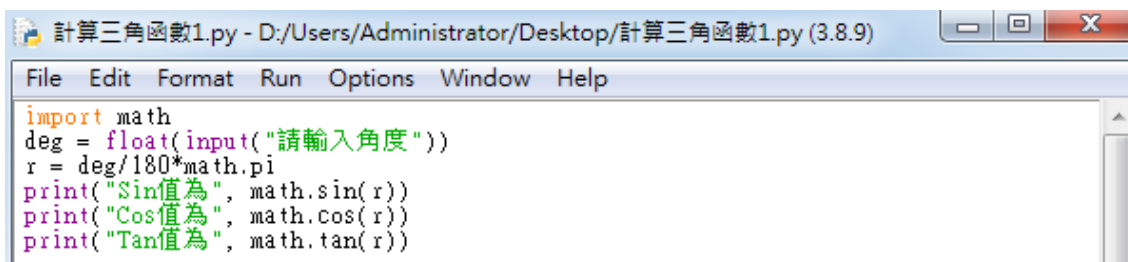
程式解說：



```
計算程式執行時間.py - D:\Users\Administrator\Desktop\計算程式執行時間\計算程...
File Edit Format Run Options Window Help
import time #匯入模組time
st = time.time() #使用模組time產生目前時間導入st變數
print(2**100) #印出2的100次方
et = time.time() #使用模組time產生目前時間導入et變數
print('執行所需時間為',et-st,'秒') #將et減st 等於執行時間的秒數
```

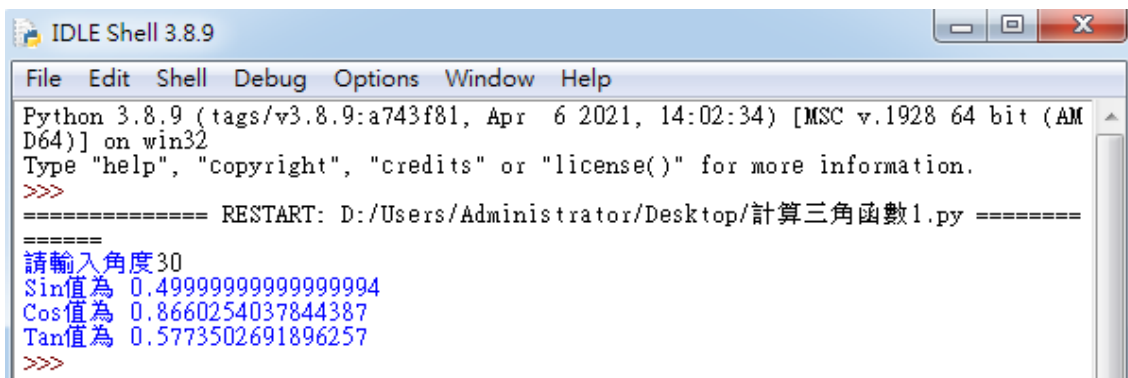
## 22 計算三角函數

程式碼：



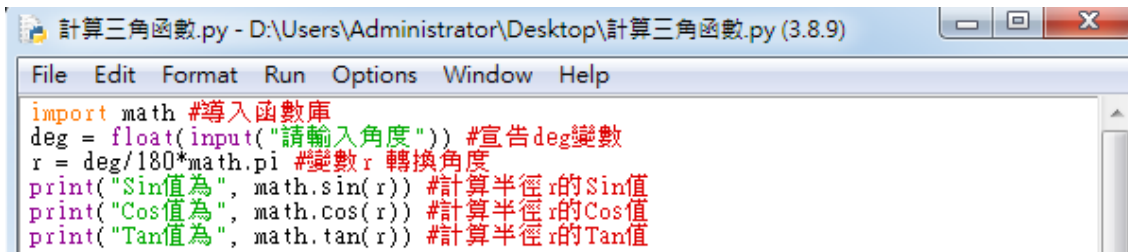
```
計算三角函數1.py - D:/Users/Administrator/Desktop/計算三角函數1.py (3.8.9)
File Edit Format Run Options Window Help
import math
deg = float(input("請輸入角度"))
r = deg/180*math.pi
print("Sin值為", math.sin(r))
print("Cos值為", math.cos(r))
print("Tan值為", math.tan(r))
```

執行結果：



```
IDLE Shell 3.8.9
File Edit Shell Debug Options Window Help
Python 3.8.9 (tags/v3.8.9:a743f81, Apr 6 2021, 14:02:34) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:/Users/Administrator/Desktop/計算三角函數1.py =====
=====
請輸入角度30
Sin值為 0.49999999999999994
Cos值為 0.8660254037844387
Tan值為 0.5773502691896257
>>>
```

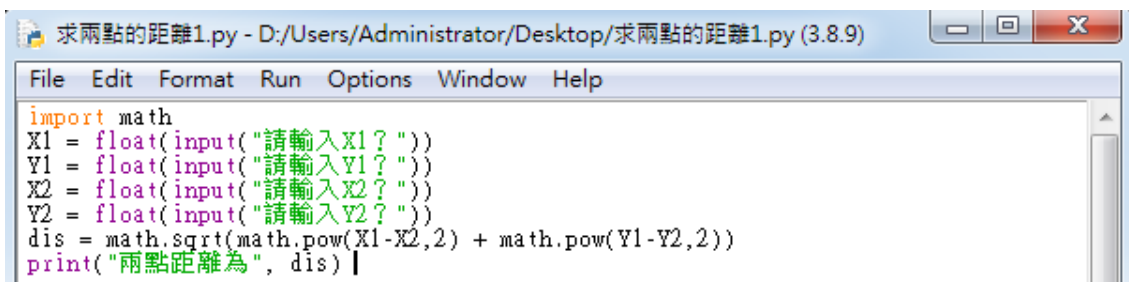
程式解說：



```
計算三角函數.py - D:/Users/Administrator/Desktop/計算三角函數.py (3.8.9)
File Edit Format Run Options Window Help
import math #導入函數庫
deg = float(input("請輸入角度")) #宣告deg變數
r = deg/180*math.pi #變數r 轉換角度
print("Sin值為", math.sin(r)) #計算半徑r的Sin值
print("Cos值為", math.cos(r)) #計算半徑r的Cos值
print("Tan值為", math.tan(r)) #計算半徑r的Tan值
```

## 23 求兩點的距離

程式碼：

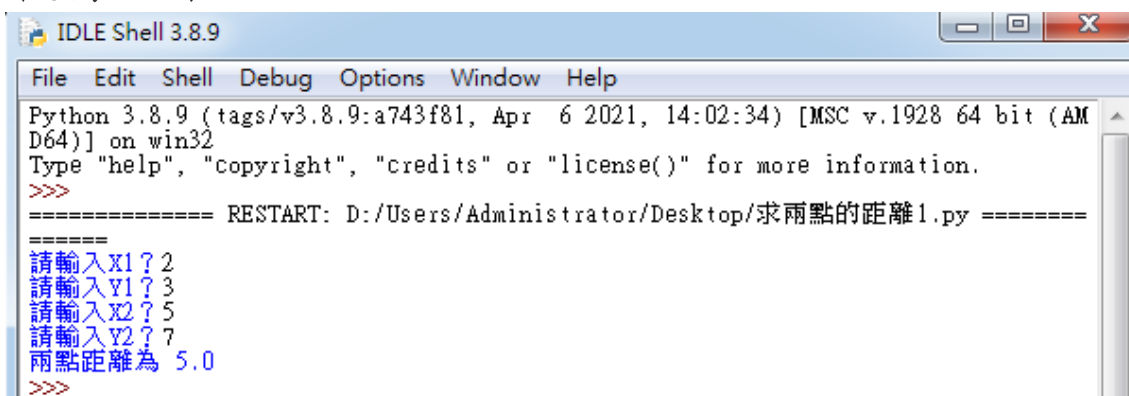


```

求兩點的距離1.py - D:/Users/Administrator/Desktop/求兩點的距離1.py (3.8.9)
File Edit Format Run Options Window Help
import math
X1 = float(input("請輸入X1? "))
Y1 = float(input("請輸入Y1? "))
X2 = float(input("請輸入X2? "))
Y2 = float(input("請輸入Y2? "))
dis = math.sqrt(math.pow(X1-X2,2) + math.pow(Y1-Y2,2))
print("兩點距離為", dis)

```

執行結果：

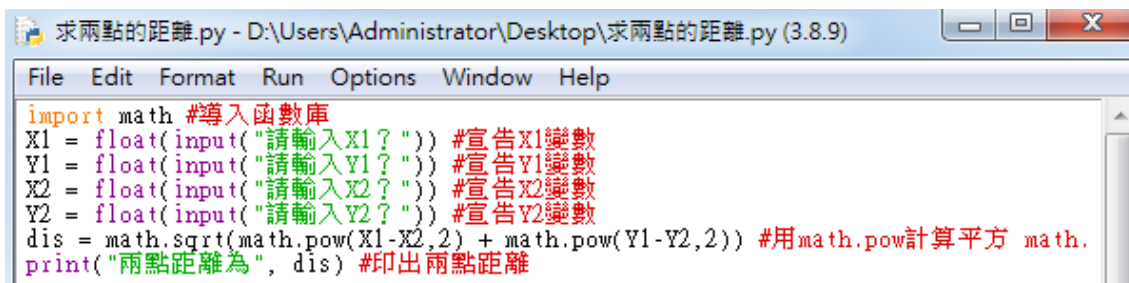


```

IDLE Shell 3.8.9
File Edit Shell Debug Options Window Help
Python 3.8.9 (tags/v3.8.9:a743f81, Apr 6 2021, 14:02:34) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:/Users/Administrator/Desktop/求兩點的距離1.py =====
=====
請輸入X1? 2
請輸入Y1? 3
請輸入X2? 5
請輸入Y2? 7
兩點距離為 5.0
>>>

```

程式解說：



```

求兩點的距離.py - D:/Users/Administrator/Desktop/求兩點的距離.py (3.8.9)
File Edit Format Run Options Window Help
import math #導入函數庫
X1 = float(input("請輸入X1? ")) #宣告X1變數
Y1 = float(input("請輸入Y1? ")) #宣告Y1變數
X2 = float(input("請輸入X2? ")) #宣告X2變數
Y2 = float(input("請輸入Y2? ")) #宣告Y2變數
dis = math.sqrt(math.pow(X1-X2,2) + math.pow(Y1-Y2,2)) #用math.pow計算平方 math.
print("兩點距離為", dis) #印出兩點距離

```