

Python 製作樞紐分析表

樞紐分析表 Pivot Table

raw_data

NAME	PRODUCT	AMOUNT	PRICE
BIG	A	10	100
SMALL	B		200
BIG	C	10	
SMALL	A	20	300
BIG	B	20	400
SMALL	C	30	500
BIG	A	30	600
SMALL	B		700
BIG	C	40	
SMALL	A	40	800
BIG	B	50	900
SMALL	C	50	1,000



pt

NAME	PRODUCT	AMOUNT	PRICE
BIG	A	40	350
BIG	B	70	650
BIG	C	50	0
SMALL	A	60	550
SMALL	B	0	450
SMALL	C	80	750

依據 NAME 及 PRODUCT 欄位分組，
計算 AMOUNT 欄位的總和及
PRICE 欄位的平均。

Step 1 : 讀取 Excel 檔

[pandas.read_excel\(\)](#)

Step 2 : 製作樞紐分析表

[pandas.pivot_table\(\)](#)

Step 3 : 還原整數索引欄位

[pandas.DataFrame.reset_index\(\)](#)

Step 4 : DataFrame 寫入 Excel 檔

[pandas.DataFrame.to_excel\(\)](#)

Step 1 : pandas.read_excel()

```
In [2]: xlsx_path = 'D:\RPA_UiPath\Python x RPA\Pivot Table\Input\SampleData.xlsx'  
  
raw_data = pd.read_excel( xlsx_path )  
raw_data
```

Out[2]:

	NAME	PRODUCT	AMOUNT	PRICE
0	BIG	A	10.0	100.0
1	SMALL	B	NaN	200.0
2	BIG	C	10.0	NaN
3	SMALL	A	20.0	300.0
4	BIG	B	20.0	400.0
5	SMALL	C	30.0	500.0
6	BIG	A	30.0	600.0
7	SMALL	B	NaN	700.0
8	BIG	C	40.0	NaN
9	SMALL	A	40.0	800.0
10	BIG	B	50.0	900.0
11	SMALL	C	50.0	1000.0

Step 2 : pandas.pivot_table()

```
In [3]: pt = pd.pivot_table( raw_data,  
                             index = ['NAME', 'PRODUCT'],  
                             values = ['AMOUNT', 'PRICE'],  
                             aggfunc = { 'AMOUNT':np.sum, 'PRICE':np.mean },  
                             dropna = False, fill_value = 0 )  
pt
```

Out[3]:

		AMOUNT	PRICE
	NAME	PRODUCT	
BIG	A	40	350
	B	70	650
	C	50	0
SMALL	A	60	550
	B	0	450
	C	80	750

Step 3 : pandas.DataFrame.reset_index()

```
In [4]: pt.reset_index( inplace =True )  
pt
```

Out[4]:

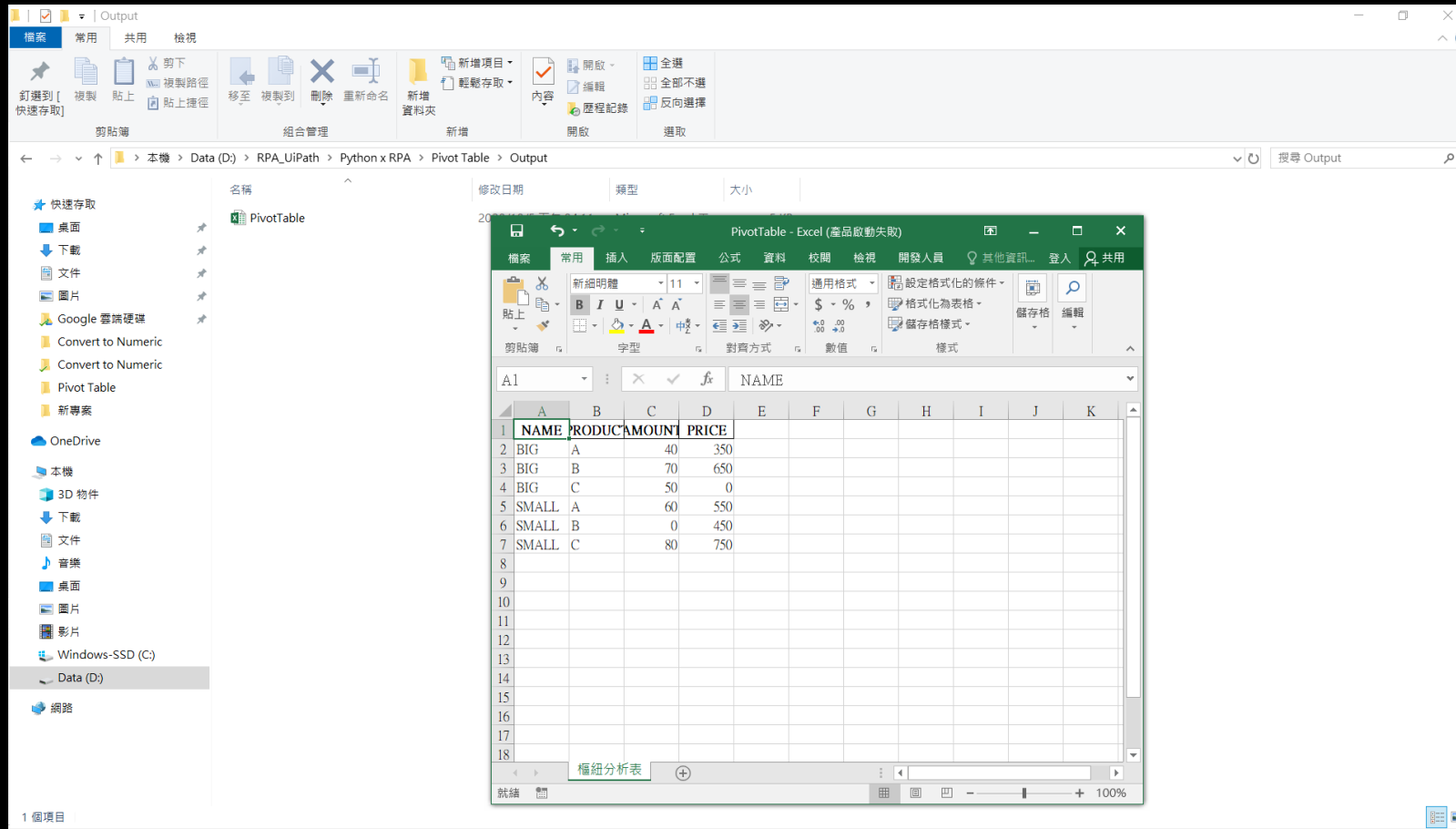
	NAME	PRODUCT	AMOUNT	PRICE
0	BIG	A	40	350
1	BIG	B	70	650
2	BIG	C	50	0
3	SMALL	A	60	550
4	SMALL	B	0	450
5	SMALL	C	80	750

Step 4 : pandas.DataFrame.to_excel()

```
In [5]: output_path = 'D:\RPA_UiPath\Python x RPA\Pivot Table\Output\PivotTable.xlsx'

pt.to_excel( output_path, sheet_name = '樞紐分析表', index = False )
```

Output



The screenshot shows a Windows File Explorer window with the following details:

- Path: 本機 > Data (D:) > RPA_UiPath > Python x RPA > Pivot Table > Output
- File Name: PivotTable
- Size: 20 KB
- Modified Date: 2023/10/10 10:10
- File Type: Excel 工作簿

The file is highlighted, and its details are shown on the right. The file size is 20 KB, and it was modified on 2023/10/10 at 10:10. The file type is 'Excel 工作簿'.

	NAME	PRODUCT	AMOUNT	PRICE
1	BIG	A	40	350
2	BIG	B	70	650
3	BIG	C	50	0
4	SMALL	A	60	550
5	SMALL	B	0	450
6	SMALL	C	80	750

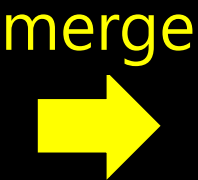
Another Way of Pivot Table

```
In [6]: total_amount = raw_data.groupby(['NAME', 'PRODUCT'])[['AMOUNT']].sum()
        mean_price = raw_data.groupby(['NAME', 'PRODUCT'])[['PRICE']].mean()
        pivot_table = pd.merge( total_amount, mean_price, on=['NAME', 'PRODUCT'], how='left' )

        display( total_amount )
        display( mean_price )
        display( pivot_table )
```

		AMOUNT
NAME	PRODUCT	
BIG	A	40.0
	B	70.0
	C	50.0
SMALL	A	60.0
	B	0.0
	C	80.0

		PRICE
NAME	PRODUCT	
BIG	A	350.0
	B	650.0
	C	NaN
SMALL	A	550.0
	B	450.0
	C	750.0



		AMOUNT	PRICE
NAME	PRODUCT		
BIG	A	40.0	350.0
	B	70.0	650.0
	C	50.0	NaN
SMALL	A	60.0	550.0
	B	0.0	450.0
	C	80.0	750.0