



Unit 13

csv module

Spread sheet and corresponding CSV file

Name	Exam1	Exam2	Final Exam	Overall Grade
Bill	75.00	100.00	50.00	75.00
Fred	50.00	50.00	50.00	50.00
Irving	0.00	0.00	0.00	0.00
Monty	100.00	100.00	100.00	100.00
Average				56.25

FIGURE 14.2 A simple spreadsheet from Microsoft Excel 2008.

```
Name,Exam1,Exam2,Final Exam,Overall Grade
Bill,75.00,100.00,50.00,75.00
Fred,50.00,50.00,50.00,50.00
Irving,0.00,0.00,0.00,0.00
Monty,100.00,100.00,100.00,100.00

Average,,,,56.25
```

csv file

- <https://docs.python.org/3/library/csv.html>
- Là file text mà mỗi dòng các phần tử phân tách nhau bởi dấu phẩy (,), chấm phẩy (;), hay tab (\t).
- Python hỗ trợ module csv, gồm:
 - csv.field_size_limit – return maximum field size
 - csv.get_dialect – get the dialect which is associated with the name
 - csv.list_dialects – show all registered dialects
 - csv.register_dialect - associate dialect with name
 - csv.unregister_dialect - delete the dialect associated with the name the dialect registry

csv module

- `csv.reader` – read data from a csv file
- `csv.writer` – write data to a csv file
- **`csv.QUOTE_ALL`** - Quote everything, regardless of type.
- **`csv.QUOTE_MINIMAL`** - Quote fields with special characters
- **`csv.QUOTE_NONNUMERIC`** - Quote all fields that aren't numbers value
- **`csv.QUOTE_NONE`** – Don't quote anything in output

Read csv

```
import csv
workbook_file = open('Workbook1.csv', 'r')
workbook_reader = csv.reader(workbook_file)

for row in workbook_reader:
    print(row)

workbook_file.close()
```

```
>>>
['Name', 'Exam1', 'Exam2', 'Final Exam', 'Overall Grade']
['Bill', '75.00', '100.00', '50.00', '75.00']
['Fred', '50.00', '50.00', '50.00', '50.00']
['Irving', '0.00', '0.00', '0.00', '0.00']
['Monty', '100.00', '100.00', '100.00', '100.00']
[]
['Average', '', '', '', '56.25']
```

Read file csv into Dictionary

```
import csv
with ('employee_birthday.txt', mode='r') as csv_file:
    csv_reader = csv.DictReader(csv_file)
    for row in csv_reader:
        print(f'\t{row["name"]} - {row["age"]}.')
```

Write csv

```
import csv
with ('employee_file.csv', mode='w') as employee_file:
    employee_writer = csv.writer(employee_file, delimiter=',',
                                  quotechar='"', quoting=csv.QUOTE_MINIMAL)

    employee_writer.writerow(['John Smith', 'Accounting', 'November'])
    employee_writer.writerow(['Erica Meyers', 'IT', 'March'])
```

Write csv from Dict

```
import csv
with ('employee_file2.csv', mode='w') as csv_file:
    fieldnames = ['emp_name', 'dept']
    writer = csv.DictWriter(csv_file, fieldnames=fieldnames)
    writer.writeheader()
    writer.writerow({'emp_name': 'John Smith', 'dept': 'Accounting'})
    writer.writerow({'emp_name': 'Erica Meyers', 'dept': 'IT'})
```


Xử lý csv trong thư viện Pandas

```
import pandas  
df = pandas.read_csv('hrdata.csv', index_col='Name')  
print(df)
```

```
import pandas  
df = pandas.read_csv('hrdata.csv', index_col='Name',  
parse_dates=['Birth Date'])  
print(df)
```

Xử lý csv trong thư viện Pandas

```
df = pandas.read_csv('hrdata.csv',  
    index_col='Employee',  
    parse_dates=['Hired'],  
    header=0,  
    names=['Employee', 'Hired', 'Salary', 'Sick Days'])
```

```
# Process data
```

```
# Write new file
```

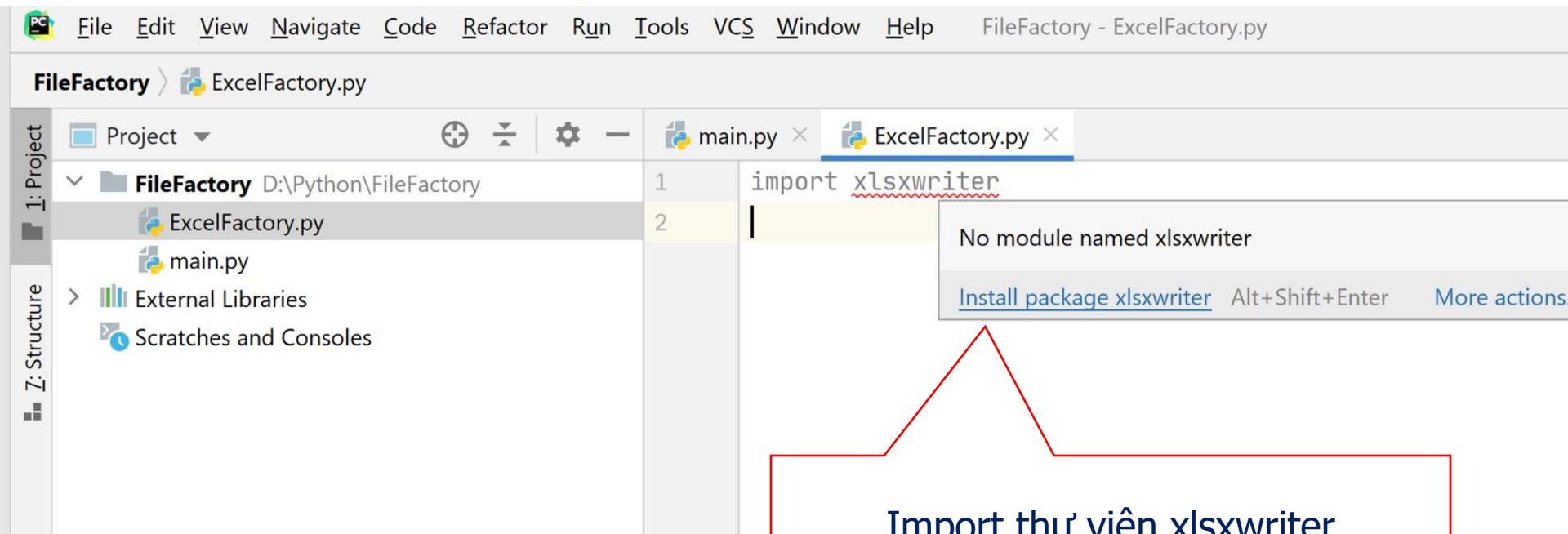
```
df.to_csv('hrdata_modified.csv')
```



Xử lý file excel

Xử lý file excel

- <https://xlsxwriter.readthedocs.io/> dùng thư viện này để tạo file Excel
`import xlsxwriter`



Import thư viện xlsxwriter
Di chuyển chuột tới dòng lệnh import
→ chọn Install package xlsxwriter

Xử lý file excel (tt)

```
import xlswriter
```

```
# Tạo một file excel cùng 1 sheet
```

```
workbook = xlswriter.Workbook('demo.xlsx')  
worksheet = workbook.add_worksheet()
```

```
# thiết lập các cột cho file
```

```
worksheet.set_column('A:A', 5)  
worksheet.set_column('B:B', 15)  
worksheet.set_column('C:C', 20)  
worksheet.set_column('D:D', 15)  
worksheet.set_column('E:E', 15)
```

```
# định dạng tiêu đề cột in đậm
```

```
bold = workbook.add_format({'bold': True})
```

```
# thêm dòng tiêu đề và định dạng in đậm
```

```
worksheet.write('A1', 'STT', bold)  
worksheet.write('B1', 'MÃ SẢN PHẨM', bold)  
worksheet.write('C1', 'TÊN SẢN PHẨM', bold)  
worksheet.write('D1', 'SỐ LƯỢNG', bold)  
worksheet.write('E1', 'ĐƠN GIÁ', bold)
```

```
#thêm một dòng dữ liệu
```

```
worksheet.write('A2', 1)  
worksheet.write('B2', 'SP1')  
worksheet.write('C2', 'Coca')  
worksheet.write('D2', '15')  
worksheet.write('E2', '15000')
```

```
#thêm một dòng dữ liệu
```

```
worksheet.write('A3', 2)  
worksheet.write('B3', 'SP2')  
worksheet.write('C3', 'Pepsi')  
worksheet.write('D3', '20')  
worksheet.write('E3', '18000')
```

```
#Chèn Logo vào
```

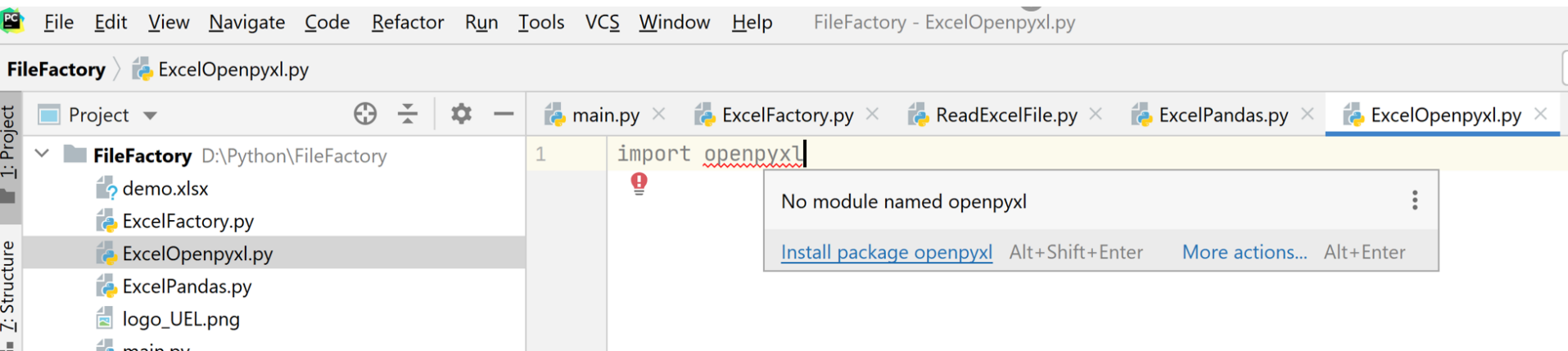
```
worksheet.insert_image('B5', 'HIENLTH.png')
```

```
workbook.close()
```

Chạy phần mềm và vào thư mục
phần mềm xem file Excel sẽ có kết
quả như mong muốn

Đọc Ghi và đọc file Excel có rất nhiều thư viện, có thể kết hợp.

Ta thử dùng thư viện **openpyxl** để đọc Excel file (<https://openpyxl.readthedocs.io/en/stable/>), có thể dùng thư viện này để tạo file Excel luôn.



Coding đọc dữ liệu trong file Excel

```
from openpyxl import load_workbook
wb = load_workbook('demo.xlsx')
print(wb.sheetnames)
ws = wb[wb.sheetnames[0]]
for row in ws.values:
    for value in row:
        print(value, "\t", end="")
    print("")
```

FileFactory > ExcelOpenpyxl.py

Project

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main.py

ExcelFactory.py

ReadExcelFile.py

ExcelPandas.py

ExcelOpenpyxl.py

FileFactory

D:\Python\FileFacto

demo.xlsx

ExcelFactory.py

ExcelOpenpyxl.py

ExcelPandas.py

logo_UEL.png

main.py

ReadExcelFile.py

External Libraries

Scratches and Consoles

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```

from openpyxl import load_workbook
wb = load_workbook('demo.xlsx')
print(wb.sheetnames)
ws = wb[wb.sheetnames[0]]
for row in ws.values:
    for value in row:
        print(value, "\t", end='')
    print("")

```

for row in ws.values

Run: ExcelOpenpyxl

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C:\Python39\python.exe D:/Python/FileFactory/ExcelOpenpyxl.py

['Sheet1']

STT	MÃ SẢN PHẨM	TÊN SẢN PHẨM	SỐ LƯỢNG	ĐƠN GIÁ
1	SP1	Coca	15	15000
2	SP2	Pepsi	20	18000

 python™



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