



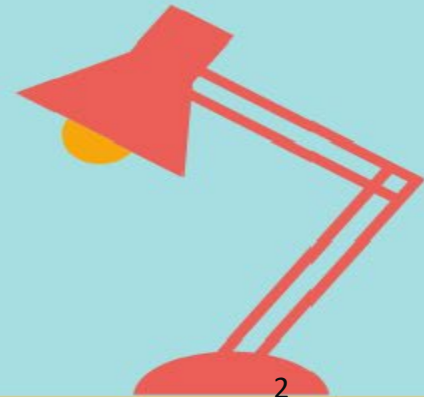
113-1基礎程式設計(17)

亞大資工系

課程大綱

- W1-Python簡介及程式工具
- W2
- W3-變數和運算
- W4-迴圈和格式化輸出
- W5-判斷式和容器
- W6-字串處理和輸出入
- W7-字典容器
- W8-檔案處理
- **W9-期中測驗**

- W10-函數
- W11-進階流程控制
- W12-進階運算和生成器
- W13-進階函數
- W14-類別
- W15-進階類別
- W16-模組和套件
- W17-進階設計
- W18-期末測驗



主週主題

- Week17-基礎套件
 - Topic 1(主題1)- urllib函數庫
 - Topic 2(主題2)- SQLite 數據庫
 - Topic 3(主題3)- argparse (new since PEP 389 , 2009/09)
 - Topic 4(主題4)- getopt (old)
 - Topic 5(主題5)-內建函數和函數庫的複習



Topic 1- urllib函數庫

`urllib.request` 是一個用來從URLs (Uniform Resource Locators)取得資料的Python模組。它提供了一個非常簡單的介面能接受多種不同的協議，`urlopen` 函數。也提供了較複雜的介面用於處理一些常見的狀況，例如:基本的`authentication`、`cookies`、`proxies`等等，這些都可以由`handler`或`opener`物件操作。

```
import urllib.request
with urllib.request.urlopen('http://www.asia.edu.tw/') as response:
    html = response.read()
```



Topic 2-SQLite 數據庫 DB-API 2.0 接口

- 創建一個 Connection 物件
- 創建一個 Cursor 游標物件

```
import sqlite3
con = sqlite3.connect('example.db')
cur = con.cursor()

# Create table
cur.execute('''CREATE TABLE stocks(date text, trans text, symbol text, qty real, price real)''')

# Insert a row of data
cur.execute("INSERT INTO stocks VALUES ('2006-01-05','BUY','RHAT',100,35.14)")

# Save (commit) the changes
con.commit()

# We can also close the connection if we are done with it.
con.close()
```

SQL (Structured Query Language)

- DDL: data definition language

```
CREATE TABLE Books  
(Id INT PRIMARY KEY IDENTITY(1,1),  
Name VARCHAR (50) NOT NULL,  
Price INT)
```

- DML:

```
INSERT into students values (1, 'ashish', 'java');  
INSERT into students values (2, 'rahul', 'C++');  
SELECT * from students;
```



Topic 3- argparse

- argparse- **New Command Line Parsing Module**
- getopt - Parser for command line options



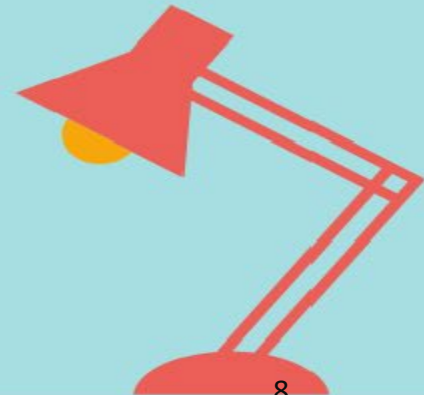
Topic 3- argparse

```
#prog.py
import argparse
parser = argparse.ArgumentParser()
parser.parse_args()
```

```
>python3 prog.py
>python3 prog.py --help
usage: prog.py [-h]
```

```
options:
  -h, --help  show this help message and exit
```

```
>python3 prog.py --verbose
usage: prog.py [-h]
prog.py: error: unrecognized arguments: --verbose
>python3 prog.py foo
usage: prog.py [-h]
prog.py: error: unrecognized arguments: foo
```




```
import argparse
def TrainModel(args):
    num_epochs = args.epochs
    batches = args.batches
    imgdir = args.imagedir
    modelfile = args.inputmodel
    outputfile = args.outputmodel
    model_select = args.model

if __name__ == '__main__':
    parser = argparse.ArgumentParser()
    parser.add_argument("-i", "--inputmodel", default=None, help = "input model")
    parser.add_argument("-o", "--outputmodel", default="1.pth", help = "out model")
    parser.add_argument("-y", "--imagedir", default="images2", help = "train images")
    parser.add_argument("-e", "--epochs", default=1, type=int, help = "train images")
    parser.add_argument("-b", "--batches", default=6, type=int, help = "train images")
    parser.add_argument("-c", "--cuda", default=0, type=int, help = "cuda device")
    parser.add_argument("-m", "--model", default=3, type=int, help = "select model")
    args = parser.parse_args()
    TrainModel(args)
```

```
python train2a.py -i fl2_v2s_e5.pth -o fl2_v2s_e10.pth -e 5 -c 0 -b 36 -m 11
```

Topic 4- getopt

```
import sys, getopt
def run():
    pass
def main(argv):
    try:
        opts, args = getopt.getopt(argv[:], "h:m:o:d:e:b:", ["model=", "ofile="])
    except getopt.GetoptError:
        print('train_tf1.py -m <model> -o <outputfile>')
        sys.exit(2)

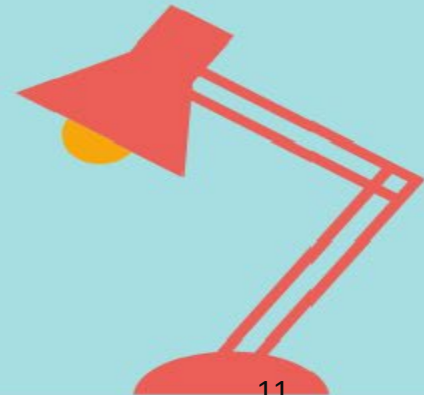
    for opt, arg in opts:
        if opt == '-h':
            print('train_tf1.py -m <model> -o <outputfile>')
            sys.exit()
        elif opt in ("-m", "--model"):
            modelfile = arg
            print(arg)

    run()

if __name__ == "__main__":
    main(sys.argv[1:])
```

Topic 5-內建函數和函數庫的複習

- 文字排序
- 每個月的第一天星期幾和有幾天



Thanks!

Q&A

