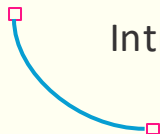


HW2-Problem6

MLB Data Crawling and Analysis



Introduction to the problem6 of hw2

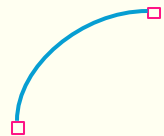




01

MLB 網頁爬蟲

MLB 網頁爬蟲



NEWSWATCHSCORESSCHEDULE**STATS**STANDINGSYOUTHPLAYERS

MLB.TVTICKETSSHOPTEAMSES

LOG IN

Player Team

Hitting

Pitching

Reset Filters

2024

Regular Season

MLB

All Teams

Year to Date

All Positions

Select Player Pool

Select a Split

Standard

Expanded

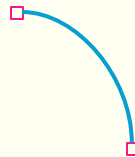
Statcast

When table is sorted by a rate stat (ex. – AVG, ERA), non-qualified players are hidden by default. All-Star starting pitcher Paul Skenes does not yet qualify for ERA title. [View his stats here.](#)

PLAYER	TEAM	G	AB	R	H	2B	3B	HR	RBI	BB	SO	SB	CS	AVG	OBP	SLG	OPS
1 Aaron Judge CF	NYN	158	559	122	180	36	1	58	144	133	171	10	0	.322	.458	.701	1.159
2 Shohei Ohtani DH	LAD	158	632	134	196	38	7	54	130	81	162	58	4	.310	.391	.649	1.040
3 Juan Soto RF	NYN	157	576	128	166	31	4	41	109	129	119	7	4	.288	.419	.569	.988
4 Bobby Witt SS	KC	160	632	124	210	45	11	32	109	57	105	31	12	.332	.390	.590	.980
5 Yordan Alvarez DH	HOU	147	552	88	170	34	2	35	86	69	95	6	0	.308	.392	.567	.959
6 Vladimir Guerrero 1B	TOR	158	614	98	199	44	1	30	103	70	95	2	2	.324	.395	.546	.941
7 Marcell Ozuna DH	ATL	159	594	96	182	31	0	39	102	73	166	1	0	.306	.383	.556	.939



MLB 網頁爬蟲



要求

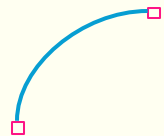
- 使用 Scrapy 自己生成爬蟲框架 (不提供程式碼)
- <https://www.mlb.com/stats/>
爬取此網頁中所有球員的各項指標 (6 頁都要抓到)
- 繳交整個爬蟲程式，不包含輸出 csv
- 使用網頁表格的表頭名稱作為輸出檔案的欄位名稱
- 球員名字後面的守備位置不用抓

評分方式

- TA 會執行同學的爬蟲程式，得到程式的輸出檔
- 而後與 TA 自己的 csv 檔案進行內容比較



MLB 網頁爬蟲



STEP 1: 安裝 Scrapy

STEP 2: 建立爬蟲專案

STEP 3: 建立爬蟲程式

pip + venv

```
pip install Scrapy # 安裝  
scrapy version # 確認安裝成功
```

conda

```
conda install conda-forge::scrapy # 安裝  
scrapy version # 確認安裝成功
```



MLB 網頁爬蟲



STEP 1: 安裝 Scrapy

STEP 2: 建立爬蟲專案

STEP 3: 建立爬蟲程式

使用 terminal 建立 scrapy 專案
完成後會看到如右圖的結構

`scrapy startproject <project_name>`

```
tutorial/  
  scrapy.cfg          # 專案環境設定  
  
tutorial/  
  __init__.py         # 撰寫成 module  
  
  items.py            # 定義抓取的内容  
  
  middlewares.py      # 中介流程，在各元件溝通之間作用  
  
  pipelines.py        # items 的處理流程  
  
  settings.py         # 設定檔案  
  
  spiders/  
    __init__.py      # 爬蟲程式資料夾
```

MLB 網頁爬蟲

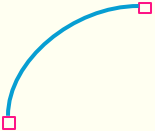


STEP 1: 安裝 Scrapy

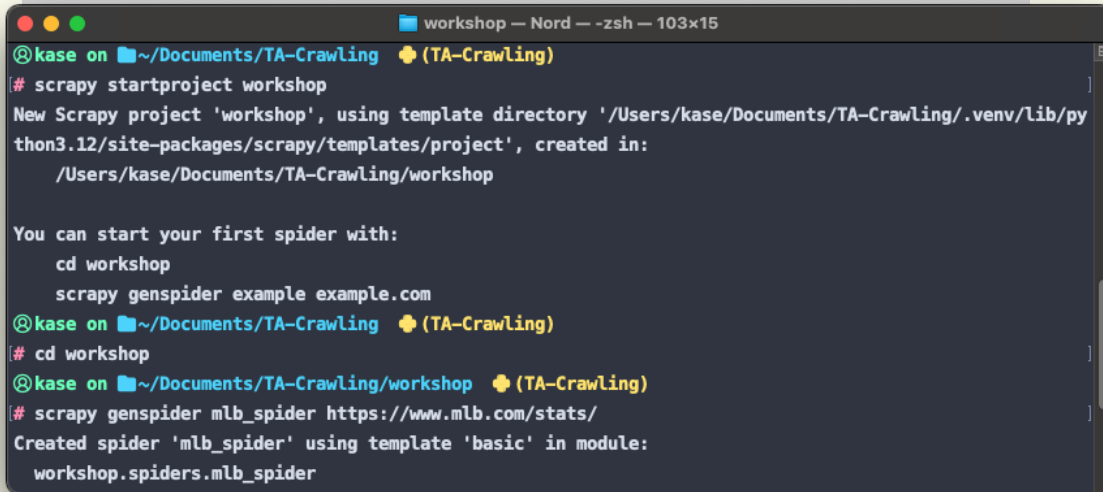
STEP 2: 建立爬蟲專案

STEP 3: 建立爬蟲程式

使用 terminal 建立爬蟲程式
設定爬蟲名稱與爬取的網域



```
cd <project_name>/spider  
scrapy genspider <spider_name> <domain>
```



```
workshop — Nord — zsh — 103x15  
@kase on ~/Documents/TA-Crawling (TA-Crawling)  
# scrapy startproject workshop  
New Scrapy project 'workshop', using template directory '/Users/kase/Documents/TA-Crawling/.venv/lib/python3.12/site-packages/scrapy/templates/project', created in:  
/Users/kase/Documents/TA-Crawling/workshop  
  
You can start your first spider with:  
cd workshop  
scrapy genspider example example.com  
@kase on ~/Documents/TA-Crawling (TA-Crawling)  
# cd workshop  
@kase on ~/Documents/TA-Crawling/workshop (TA-Crawling)  
# scrapy genspider mlb_spider https://www.mlb.com/stats/  
Created spider 'mlb_spider' using template 'basic' in module:  
workshop.spiders.mlb_spider
```

MLB 網頁爬蟲

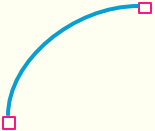


STEP 1: 安裝 Scrapy

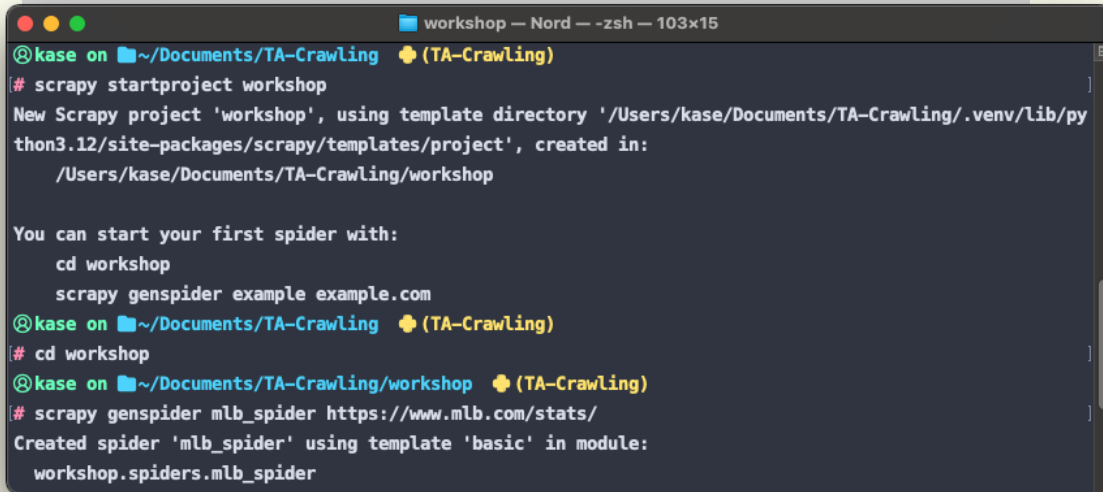
STEP 2: 建立爬蟲專案

STEP 3: 建立爬蟲程式

此時你已成功建立爬蟲程式的
框架！（開始寫作業吧）



```
cd <project_name>/spider  
scrapy genspider <spider_name> <domain>
```



```
workshop — Nord — zsh — 103x15  
@kase on ~/Documents/TA-Crawling (TA-Crawling)  
# scrapy startproject workshop  
New Scrapy project 'workshop', using template directory '/Users/kase/Documents/TA-Crawling/.venv/lib/python3.12/site-packages/scrapy/templates/project', created in:  
/Users/kase/Documents/TA-Crawling/workshop  
  
You can start your first spider with:  
cd workshop  
scrapy genspider example example.com  
@kase on ~/Documents/TA-Crawling (TA-Crawling)  
# cd workshop  
@kase on ~/Documents/TA-Crawling/workshop (TA-Crawling)  
# scrapy genspider mlb_spider https://www.mlb.com/stats/  
Created spider 'mlb_spider' using template 'basic' in module:  
workshop.spiders.mlb_spider
```




02

MLB 資料視覺化

MLB 資料視覺化

要求

- 使用提供的 [hw2_vis_template.ipynb](#) 模板
- 計算所有大聯盟球員的平均得分 (Runs)
將球員分為「高得分」與「低得分」兩組
- 將兩組球員的 *得分指標 全部相加
畫出這兩組的 correlation matrix
- 解釋你對結果的看法

評分方式

TA 執行你的 .ipynb，檢驗是否畫出正確圖表

*得分指標

- 得分 (Runs Scored, R)
- 打點 (Runs Batted In, RBI)
- 安打數 (Hits, H)
- 全壘打數 (Home Runs, HR)
- 打擊率 (Batting Average, AVG)
- 上壘率 (On-Base Percentage, OBP)
- 長打率 (Slugging Percentage, SLG)
- 盜壘數 (Stolen Bases, SB)
- 打數 (At Bats, AB)
- 四壞球率 (Walks, BB)
- 被三振數 (Strikeouts, SO)



Thanks!

Do you have any questions?

Please mail to Netai-2024@googlegroups.com

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