Project 1

亂數分組

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目錄

摘要

為了要提供出有效率且方便的亂數分組，亂數抽取號碼之運用做了這次的研討報告・提供更簡潔易懂的編排以及運用所以選用python作為這次練習的主軸・當中也要去思考對於使用者的需求以及更加人性化作為目標，持續漸進維持並且提供更有效率的使用環境・

簡略談 python

python 是一種廣泛使用的直譯式、進階程式、通用型程式語言，由吉多·范羅蘇姆創造，第一版釋出於 1991 年。可以視之為一種改良（加入一些其他程式語言的優點，如物件導向）的 LISP。Python 的設計哲學強調代碼的可讀性和簡潔的語法（尤其是使用空格縮排劃分代碼塊，而非使用大括號或者關鍵詞）。相比於 C++或 Java，Python 讓開發者能夠用更少的代碼表達想法。不管是小型還是大型程式，該語言都試圖讓程式的結構清晰明瞭。

實際運用

python random

python 亂數模組，在程式中運用 python random 模組來實現我們需要的模式。

模組是一種函數集合，能夠實現一些功能，當我們想要使用這類功能時，直接把對應的模組匯入程序裡，就可以直接使用了。

random.shuffle

random 模組下的 shuffle 程序能夠滿足我們的需求，shuffle 主要運用在將函數中的順序打亂，將序列的所有元素隨機排序。

舉個例子當我們的函數為[1, 2, 3, 4, 5,]，我們只要將 random.Shuffle 運用在程序當中就可以將其排列順序隨機打亂。

```
1  import random
2  A=[[ 1, 2, 3, 4, 5,]]
3
4  a=A[0]
5  #將a數列隨機排列
6  random.shuffle(a)
7  #列印數列
8  print(a)
```

Filename: input file name .py Save

Run Output 清除輸出區 清除繪圖區 Reload

以下對話框能呈現亂數結果

```
[3, 4, 2, 5, 1]
<completed in  7.00
ms>
```

將程序運用在亂數分組上

將 random. Shuffle 運用在我們的亂數分組程序上我們需要先了解一些事情，像是數列的取用，要將修課名單貼上在函數裡，再利用 random. Shuffle 將函數隨機打亂，接著將結果分段列印出來便可以達到我們的目標。

程序編寫

101.py - Sc1

File Edit Search View Tools Options Language Buffers Help

1 101.py

```
1   import random
2   groupList=[['40723104', '40723107', '40723114', '40723115',
    '40723118', '40723122', '40723123', '40723140', '40723149',
    '40723151', '40723153', '40723154', '40723155', '40623143',
    '40723108', '40723127', '40723132', '40723133', '40723137',
    '40723141', '40723143', '40723144', '40723147', '40723148',
    '40723150', '40723103', '40723110', '40723112', '40723120',
    '40723125', '40723126', '40723128', '40723130', '40723139',
    '40723142', '40723145', '40723146', '40423155', '40723101',
    '40723102', '40723106', '40723111', '40723119', '40723121',
    '40723124', '40723134', '40723135', '40723136', '40723138']]
3
4   group=groupList[0]
5   #將group數列隨機排列
6   random.shuffle(group)
7   #列印數列
8   print(group)
9   #列印數列(1~12)
10  print(group[0:12])
11  #列印數列(13~24)
12  print(group[12:24])
13  #列印數列(25~36)
14  print(group[24:36])
15  #列印數列(37~49)
16  print(group[36:49])
```

```
import random
```
匯入 隨機 random 函數

```
groupList=[['40723104', '40723107', '40723114', '40723115',
'40723118', '40723122', '40723123', '40723140', '40723149',
'40723151', '40723153', '40723154', '40723155', '40623143',
'40723108', '40723127', '40723132', '40723133', '40723137',
'40723141', '40723143', '40723144', '40723147', '40723148',
'40723150', '40723103', '40723110', '40723112', '40723120',
'40723125', '40723126', '40723128', '40723130', '40723139',
'40723142', '40723145', '40723146', '40423155', '40723101',
'40723102', '40723106', '40723111', '40723119', '40723121',
'40723124', '40723134', '40723135', '40723136', '40723138']]
```
定義 groupList=所有修課學生 共 49 位

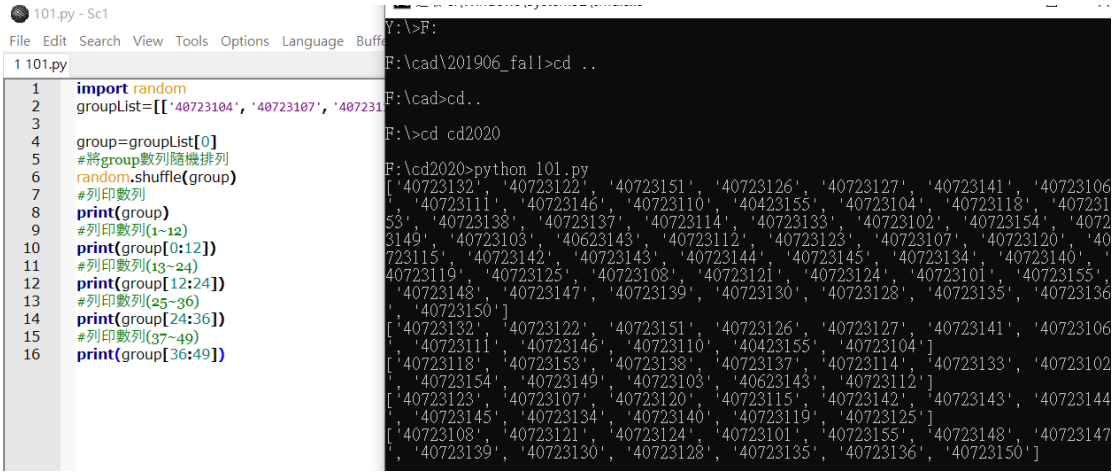
```
group=groupList[0]
```
設定變數 group=groupList[0]

```
random.shuffle(group)
```
使用 random.shuffle
主要運用在將函數中的順序打亂
將函數(group)的順序打亂

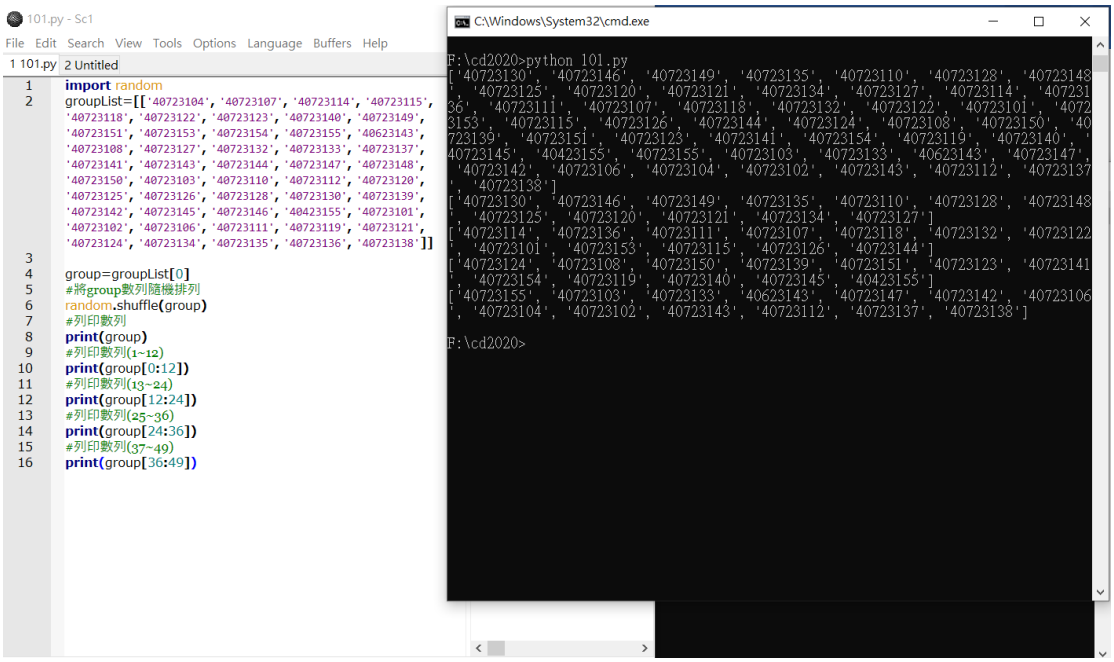
```
#列印數列
print(group)
#列印數列(1~12)
print(group[0:12])
#列印數列(13~24)
print(group[12:24])
#列印數列(25~36)
print(group[24:36])
#列印數列(37~49)
print(group[36:49])
```
print 列印運用
分段列印

操作

範例 1


101.py - Sc1
File Edit Search View Tools Options Language
1 101.py
1 import random
2 groupList=[['40723104', '40723107', '407231
3
4 group=groupList[0]
5 #將group數列隨機排列
6 random.shuffle(group)
7 #列印數列
8 print(group)
9 #列印數列(1~12)
10 print(group[0:12])
11 #列印數列(13~24)
12 print(group[12:24])
13 #列印數列(25~36)
14 print(group[24:36])
15 #列印數列(37~49)
16 print(group[36:49])
Y:\>F:
F:\cad\201906_fall>cd ..
F:\cad>cd..
F:\>cd cd2020
F:\cd2020>python 101.py
['40723132', '40723122', '40723151', '40723126', '40723127', '40723141', '40723106
', '40723111', '40723146', '40723110', '40423155', '40723104', '40723118', '407231
53', '40723138', '40723137', '40723114', '40723133', '40723102', '40723154', '4072
3149', '40723103', '40623143', '40723112', '40723123', '40723107', '40723120', '40
723115', '40723142', '40723143', '40723144', '40723145', '40723134', '40723140', '
40723119', '40723125', '40723108', '40723121', '40723124', '40723101', '40723155',
'40723148', '40723147', '40723139', '40723130', '40723128', '40723135', '40723136
', '40723150']
['40723132', '40723122', '40723151', '40723126', '40723127', '40723141', '40723106
', '40723111', '40723146', '40723110', '40423155', '40723104']
['40723118', '40723153', '40723138', '40723137', '40723114', '40723133', '40723102
', '40723154', '40723149', '40723103', '40623143', '40723112']
['40723123', '40723107', '40723120', '40723115', '40723142', '40723143', '40723144
', '40723145', '40723134', '40723140', '40723119', '40723125']
['40723108', '40723121', '40723124', '40723101', '40723155', '40723148', '40723147
', '40723139', '40723130', '40723128', '40723135', '40723136', '40723150']

範例 2


101.py - Sc1
File Edit Search View Tools Options Language Buffers Help
1 101.py 2 Untitled
1 import random
2 groupList=[['40723104', '40723107', '40723114', '40723115',
'40723118', '40723122', '40723123', '40723140', '40723149',
'40723151', '40723153', '40723154', '40723155', '40623143',
'40723108', '40723127', '40723132', '40723133', '40723137',
'40723141', '40723143', '40723144', '40723147', '40723148',
'40723150', '40723103', '40723110', '40723112', '40723120',
'40723125', '40723126', '40723128', '40723130', '40723139',
'40723142', '40723145', '40723146', '40423155', '40723101',
'40723102', '40723106', '40723111', '40723119', '40723121',
'40723124', '40723134', '40723135', '40723136', '40723138']]
3
4 group=groupList[0]
5 #將group數列隨機排列
6 random.shuffle(group)
7 #列印數列
8 print(group)
9 #列印數列(1~12)
10 print(group[0:12])
11 #列印數列(13~24)
12 print(group[12:24])
13 #列印數列(25~36)
14 print(group[24:36])
15 #列印數列(37~49)
16 print(group[36:49])
C:\Windows\System32\cmd.exe
F:\cd2020>python 101.py
['40723130', '40723146', '40723149', '40723135', '40723110', '40723128', '40723148
', '40723125', '40723120', '40723121', '40723134', '40723127', '40723114', '407231
36', '40723111', '40723107', '40723118', '40723132', '40723122', '40723101', '4072
3153', '40723115', '40723126', '40723144', '40723124', '40723108', '40723150', '40
723139', '40723151', '40723123', '40723141', '40723154', '40723119', '40723140', '
40723145', '40423155', '40723155', '40723103', '40723133', '40623143', '40723147',
'40723142', '40723106', '40723104', '40723102', '40723143', '40723112', '40723137
', '40723138']
['40723130', '40723146', '40723149', '40723135', '40723110', '40723128', '40723148
', '40723125', '40723120', '40723121', '40723134', '40723127']
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', '40723101', '40723153', '40723115', '40723126', '40723144']
['40723124', '40723108', '40723150', '40723139', '40723151', '40723123', '40723141
', '40723154', '40723119', '40723140', '40723145', '40423155']
['40723155', '40723103', '40723133', '40623143', '40723147', '40723142', '40723106
', '40723104', '40723102', '40723143', '40723112', '40723137', '40723138']
F:\cd2020>

持續進步

1.可更進一步的對話視窗

依照客戶需求給定特定變數完成亂數抽取

例如:給定組別、人數、或是其他條件

2.網頁的程序運用

能夠再遠端直接作抽取動作不必下載

可更加方便簡潔快速的抽取方式

3.在網頁上抓取資料

能夠在網頁上擷取或是引用資料

直接傳達到亂數程序上提供更方便的服務

4.資料庫存取

完成亂數程序後是否可以

直接作存取或是匯出動作

參考資料

Python: https://zh.wikipedia.org/zh-tw/Python

Python random: https://dotblogs.com.tw/chris0920/2010/10/25/18560

Random shuffle:https://www.runoob.com/python/func-number-shuffle.html

Python cp2019: http://mde.tw/cp2019/content/Python.html

Cd2020: http://mde.tw/cd2020/content/Assignments.html

Cd2020ag2: https://github.com/s40723150/cd2020ag2