**SC201Assignment0**

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**注意事項：**

1. **Indentation請使用tab**
2. **請將左上角的檔名改成自己的中文全名**

### **Problem 1: Recursion**

**＃ 請在紙上追蹤，拍照並上傳至此**

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### **Problem 2: Code Trace**

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| [11,21] 8 16 [11,21] 3 5 [12,23] 14 15  [12,23] 3 5 |

### **Problem 3: Nested Data Structure**

**FILENAME = ‘popularity.csv’**

**# This file contains name ranks each year**

**def get\_dict( ):**

**"""**

**: return: all\_d (dict{int: dict{str: int}}): Dictionary holding sex as key,**

**name\_score\_d as value.**

**(name\_score\_d holds name as key, rank as value)**

**"""**

# Your Code Here

name\_score\_d\_female = {}

name\_score\_d\_male = {}

with open(FILENAME, ‘r’) as f:

lines = f.readlines()

for line in lines:

row = line.strip().split(‘,’)

total\_names = len(row) – 1

num\_per\_gender = total\_names // 2

scores = list(range(num\_per\_gender, 0, -1)

female\_names = row[1 : num\_per\_gender + 1]

male\_names = row[num\_per\_gender + 1 : ]

for index, name in enumerate(female\_names):

if name in name\_score\_d\_female:

name\_score\_d\_female[name] += scores[index]

else:

name\_score\_d\_female[name] = scores[index]

for index, name in enumerate(male\_names):

if name in name\_score\_d\_male:

name\_score\_d\_male[name] += scores[index]

else:

name\_score\_d\_male[name] = scores[index]

all\_d = {‘female’: name\_score\_d\_female, ‘male’: name\_score\_d\_male}

return all\_d

### **Problem 4: Class Design**

**class Lexicon**

**def \_\_init\_\_(self):**

**self.words = []**

**def add\_word (self, word):**

**if len(word) >= 1 and word.lower() not in self.words:**

**self.words.append(word.lower())**

**def search(self, word):**

**if ‘.’ In word.lower():**

**for store\_word in self.words:**

**if len(word) == len(store\_word):**

**match = True**

**for look\_char, list\_char in zip(word, store\_word): if look\_char != ‘.’ and look\_char != list\_char:**

**match = False**

**break**

**if match:**

**return True**

**return False**

**else:**

**return word.lower() in self.word**