

2012/10/09 Software Studio Lab2 (Correction 2012/10/11 version 2)

Honor Code

Any cheating will be handled seriously in compliance with the university rules. All assigned work is expected to be individual, except where explicitly written otherwise (e.g., term project). You are encouraged to discuss with your classmates; however, what you hand in should be your own work.

1. (25%) Programing in Java to check whether an input word or a string of characters is a palindrome (please refer to lab 1 for explanation of what is a palindrome). If yes, display that it is a palindromes; if not, check whether its substrings are palindromes, and lists all palindrome substring. Avoid putting all the codes in a single place like `main()`. You're encouraged to use object-oriented programming concepts and techiques, such as class, method, inheritance and overriding etc. to write your program.

Example1:

```
(Palindrome Extend)Please enter a sentence or a string of number:12321
"12321"is palindrome
```

Example2:

```
(Palindrome Extend)Please enter a sentence or a string of number:123
"123"is "NOT"palindrome
```

Example3:

```
(Palindrome Extend)Please enter a sentence or a string of number:abcdedcbab
"abcdedcbab"is "NOT"palindrome
But its Substring  "abcdedcba"is palindrome
But its Substring  "bcdedcb"is palindrome
But its Substring  "cdedc"is palindrome
But its Substring  "ded"is palindrome
But its Substring  "bab"is palindrome
```

2. (75%) Facebook is a popular social network service. Try it out a little bit if you never used it previously- <http://facebook.com>.

Now we'd like you to write your own social networking service, **MyFacebook**.

The program should have the following functions:

1. Access personal profile,
2. List friends,
3. Inquire friend profile,
4. Change to a different login account.

Note that there are two kinds of friendships in **MyFacebook**, "regular friend" and "close friend". **A person's close friend can see the full information of this person's profile,**

while a person's regular friend can only see part of the information. The table below summarizes what information one's regular friend and close friend can see.

	Name	Gender	Date of Birth	Address	E-mail	Phone number	Marriage status
Regular friend	V	V	V	V	V		
Close friend	V	V	V	V	V	V	V

Design your Java classes using object-oriented programming concepts to appropriately capture and represent profile information and types of friends. In this version of MyFacebook, users' profiles and networking information will be hard-coded in your Java programs. This means that your program will load these profiles into the memory for the system to use. There's no need to input these users' information after launching the system as the information is already in the memory. Following shows information of five users that should be loaded to the memory.

Name	Gender	Date of Birth	Place of residence	E-mail	Phone	Marriage
Allen	male	1987/06/05	Taipei	allen@nthucs.com	0912477123	Single
Peter	male	1988/07/23	Tainan	peter@microsoft.com	0987654321	Divorced
Sam	male	1988/09/02	Taichung	sam@apple.com	0972377819	Married
Cathy	female	1989/04/21	Changhua	cathy@yahoo.com	0923456789	Single
Mike	male	1990/12/12	Hsinchu	mike@goole.com	0910110101	Single

The following table shows the relationships between any two users. Again, relationship information should be hard-coded in the program and preloaded to the memory. Also note that the relationship between any two individuals can be asymmetric. For example, in the following table, **Mike is Allen's regular friend** (the last column of the first row), while **Allen is set as Mike's close friend** (the first column of the fifth row).

Relationship to Self	Allen	Peter	Sam	Cathy	Mike
Self					
Allen		V	⊙		V
Peter	V		V	⊙	⊙
Sam	V	V		V	
Cathy		V	⊙		V
Mike	⊙	V		⊙	

Notation: V Regular friend , ⊙ Close friend

After launching the system, it should allow you to choose your identity as one of the five users, and show information based on types of relationship.

Demo1:

Now the identity of the user is Allen. Please view his friend, Mike's profile.

Because Allen is a close friend of Mike, thus Allen has the authority to see all the information of Mike.

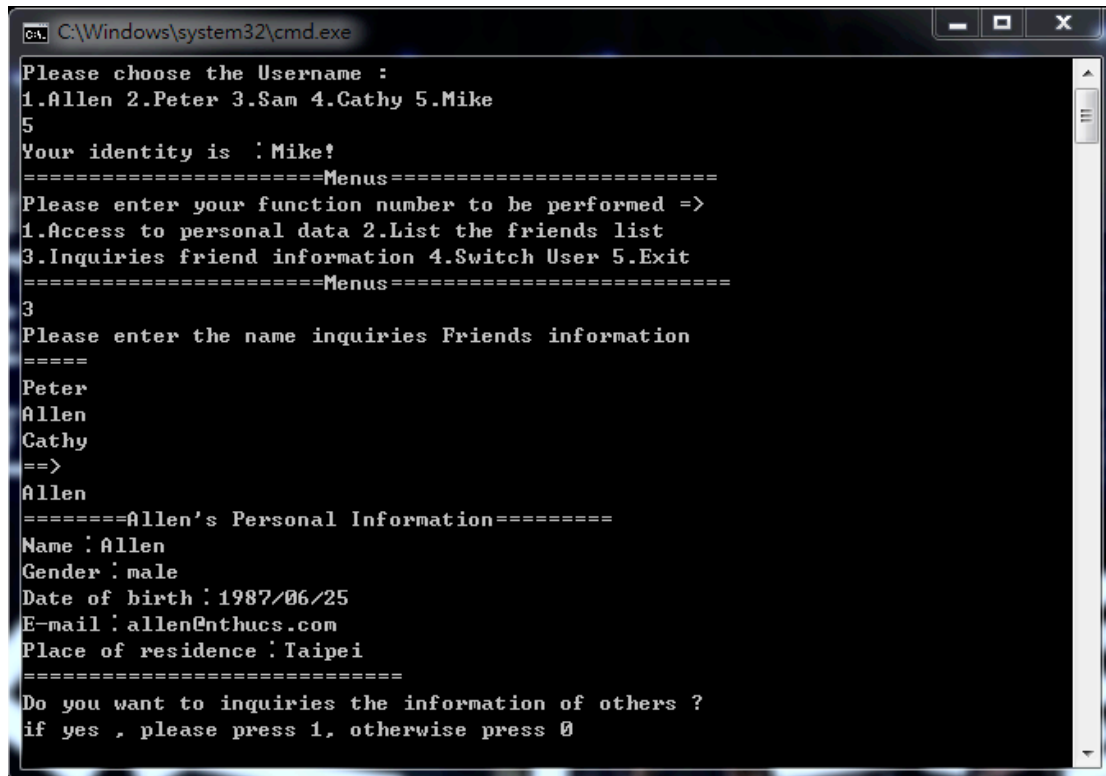
```

C:\Windows\system32\cmd.exe
Please choose the Username :
1.Allen 2.Peter 3.Sam 4.Cathy 5.Mike
1
Your identity is :Allen!
=====Menus=====
Please enter your function number to be performed =>
1.Access to personal data 2.List the friends list
3.Inquiries friend information 4.Switch User 5.Exit
=====Menus=====
3
Please enter the name inquiries Friends information
=====
Peter
Sam
Mike
==>
Mike
=====Mike's Personal Information=====
Name : Mike
Gender : male
Date of birth : 1990/12/12
E-mail : Mike@nthucs.com
Place of residence : Hsinchu,Taiwan
Phone : 0910110101
Love status : Single
=====
Do you want to inquiries the information of others ?
if yes , please press 1, otherwise press 0

```

Demo2:

Now let's change the identity to Mike. Please view his friend, Allen's profile. Because Mike is a regular friend of Allen, Mike can only see part of the information of Allen.



```
C:\Windows\system32\cmd.exe
Please choose the Username :
1.Allen 2.Peter 3.Sam 4.Cathy 5.Mike
5
Your identity is : Mike!
=====Menus=====
Please enter your function number to be performed =>
1.Access to personal data 2.List the friends list
3.Inquiries friend information 4.Switch User 5.Exit
=====Menus=====
3
Please enter the name inquiries Friends information
=====
Peter
Allen
Cathy
==>
Allen
=====Allen's Personal Information=====
Name : Allen
Gender : male
Date of birth : 1987/06/25
E-mail : allen@nthu.cs.com
Place of residence : Taipei
=====
Do you want to inquiries the information of others ?
if yes , please press 1, otherwise press 0
```

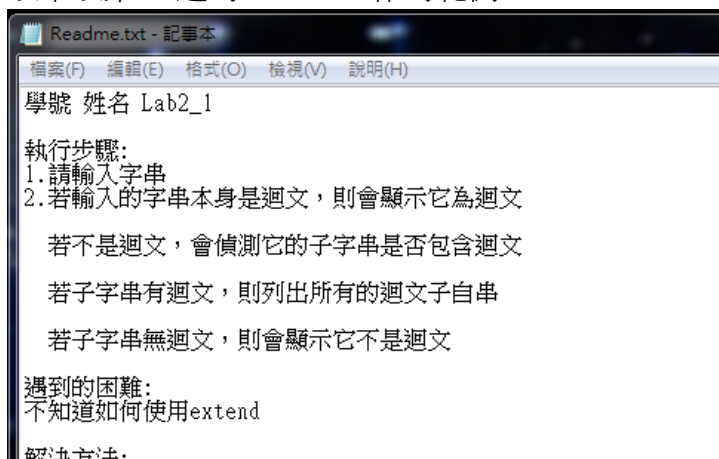
注意事項：

1. Deadline: **2012/10/14 (Sun) 23:59** (10/15 Mon 00:00~23:59 交者，成績*0.8)
2. 交作業時，請按照以下格式標示清楚題號：

學號_Lab2_1
學號_Lab2_2

3. 若一題中有多個.java檔，請放上該題的所有.java檔，並且也要放上所有的.class檔=
4. 每個.java 檔內，第一行請用註解加上學號、姓名及題號。
5. 程式碼務必要有註解，說明你解題的方法。
6. Readme 請包含執行步驟(條列式)、遇到的困難及解決方法。

以下以第 1 題的 Readme 作為範例：



```
Readme.txt - 記事本
檔案(F) 編輯(E) 格式(O) 檢視(V) 說明(H)
學號 姓名 Lab2_1
執行步驟:
1. 請輸入字串
2. 若輸入的字串本身是迴文，則會顯示它為迴文
   若不是迴文，會偵測它的子字串是否包含迴文
   若子字串有迴文，則列出所有的迴文子串
   若子字串無迴文，則會顯示它不是迴文
遇到的困難:
不知道如何使用extend
解決方法:
```