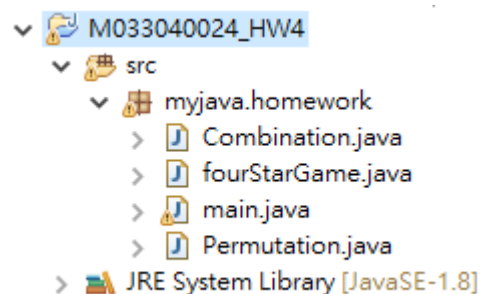# 【2016 JAVA 物件導向程式設計 Homework 4】

● 注意事項

1. 請使用 JAVA 語言，配合 Eclipse 寫本次作業並進行測試，並安裝、使用 JAVA SE Development Kit(JDK) 8 函式庫。

2. 請依據作業規定設定 Eclipse 專案名稱與 package name，若未依照規定將 根據狀況扣分。

3. 嚴禁抄襲其他同學作業，參與者(抄襲與被抄襲)皆以零分計算。

4. 請對你的程式碼有深入瞭解，demo 時助教會問。

5. 對題目有問題可以寄信問助教群(java_ta@net.nsysu.edu.tw)或是到實驗室 (EC5018)詢問，但不幫忙 debug。

6. 逾期以零分計算，不接受補交，有任何因素導致無法如期繳交，請事先 告知；

7. Demo 時間會另外通知。

● 作業規定與上傳

1. Eclipse 專案名稱：Student ID_HW4

2. Package path：請參考右圖

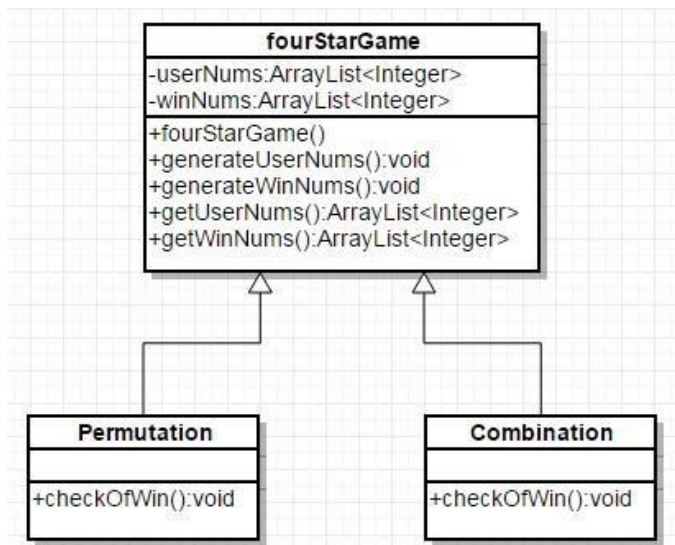3. 作業請繳交專案之 tar 或 zip archive 並上傳至網路大學。

   請於 2016 年 4 月 7 日(週四) 23:59 前 上傳完畢，逾期以零分計算，不接受補交，有任何因素導致無法如期繳 交，有問題請事先告知，再次強調，Demo 時間會另外通知。

4. Example of eclipse package explorer(請根據作業規定修改)：

   提示：此次作業需參考到 **UML**。請注意、＋、－、＿，都是有意義的。可以參考此 **Wiki** 之 **Members** 章節說明：**Class Diagram(Wikipedia)**

- **Homework Explanation**


```
              fourStarGame
-userNums:ArrayList<Integer>
-winNums:ArrayList<Integer>
+fourStarGame()
+generateUserNums():void
+generateWinNums():void
+getUserNums():ArrayList<Integer>
+getWinNums():ArrayList<Integer>


    Permutation                  Combination


+checkOfWin():void          +checkOfWin():void
```

1. According to the class diagram above, please develop a simple 4-Star game.
2. In Class fourStarGame, there are two ArrayList – winNums is used to store four lucky numbers, and userNums is used to store 4 numbers from user input.
   A. Method gererateUserNums is used to store 4 numbers from user input to userNums.
   B. Method generateWinNums is used to randomly generate 4 non-duplicate and ranged in 0~9 numbers and store them to winNums.
   C. Method getUserNums is used to return the userNums.
   D. Method getWinNums is used to return the winNums.

3. Class Permutation is inherited from Class fourStarGame.
   A. Method checkOfWin is used to check if the 4 numbers in userNums are the same with the 4 numbers in winNums. (Must in the same order)

4. Class Combination is inherited from Class fourStarGame.
   A. Method checkOfWin is used to check if the 4 numbers in userNums are the same with the 4 numbers in winNums. (Order is not necessarily the same)

5. Please make sure user input is correct and the program is stable.

- **Sample Output**

Permutation

```
Choose your Four Star Game type : (1:Permutation 2:Combination 3: Exit)
1
Win numbers : 5 3 1 0
Input four user numbers : 5 3 1 0
**You win!
Choose your Four Star Game type : (1:Permutation 2:Combination 3: Exit)
1
Win numbers : 2 1 8 0
Input four user numbers : 0 1 2 8
**You lose!
Choose your Four Star Game type : (1:Permutation 2:Combination 3: Exit)
1
Win numbers : 5 9 0 4
Input four user numbers : 5 9 0
Wrong input, try again.
```

Combination

```
Choose your Four Star Game type : (1:Permutation 2:Combination 3: Exit)
2
Win numbers : 6 1 8 4
Input four user numbers : 1 4 6 8
**You win!
Choose your Four Star Game type : (1:Permutation 2:Combination 3: Exit)
2
Win numbers : 7 6 0 5
Input four user numbers : a b c d
Wrong input, try again.
Choose your Four Star Game type : (1:Permutation 2:Combination 3: Exit)
3
```