Homework 2-1₁

- Please write a new PokerGame based on Exercise 3 to determine whether a hand (一手牌，就是發出去的五張牌) contains
  - One Pair (一對)
  - Full House (i.e., two cards of one face value and three cards of another face value) (葫蘆)
  - Four of a Kind (e.g., four aces) (鐵支)
  - Straight Flush (e.g., five cards of consecutive face values and the same suit) (同花順)

Homework 2-1₂

□ You have an enum type *CardType* to represent five types (including "None") of a hand.

  ◘ 請直接使用CardType.java

□ Tutorial of Enum Types:

  ◘ https://docs.oracle.com/javase/tutorial/java/javaOO/enum.html

SOSEL
Service-Oriented Software Engineering Lab

Homework 2-1[3]

□ You need to develop a class: *HandOfCards*, which includes two fields and their getter/setter methods:

```
private Card[] cards;
private CardType type;
```

□ You also develop `public String toString()`

◘ Expected toString result for a HandOfCards object

```
Your Cards: Seven of Diamonds, Seven of Spades,
Three of Hearts, Three of Hearts, Three of Diamonds
Card type: Full House
```

SOSEL
Service-Oriented Software Engineering Lab

Homework 2-1₄

- ☐ You also need to develop another class: CardTypeHandler that provides a method

```
public static HandOfCards produceHandOfCards(Card[] cards)
```

  - ◘ to convert five Card objects into a *HandOfCards* object with correct *CardType*

- ☐ Please revise PokerGame.java to draw five cards and call *CardTypeHandler* to produce *HandOfCards* object.

SOSEL
Service-Oriented Software Engineering Lab

Sample Output

☐ Finally, please revise PokerGameTest.java to realize the following command-line UI:

```
Please input your choice (0: quit, 1: play, 2: restart): 1
Your Cards: Six of Diamonds, Five of Spades, King of Hearts,
Nine of Diamonds, Six of Clubs
Card type: One Pair

Please input your choice (0: quit, 1: play, 2: restart): 1
Your Cards: Seven of Diamonds, Seven of Spades, Three of
Hearts, Three of Hearts, Three of Diamonds
Card type: Full House

...
```

SOSEL
Service-Oriented Software Engineering Lab

Hint

- 請留意此次練習不須計算點數，因此牌發完之判斷無法再利用NullPointerException。
- 也請留意Full house和Four of a Kind包含One Pair，此情況只需輸出Full house或Four of a Kind。

SOSEL
Service-Oriented Software Engineering Lab

Homework 2-2

- By following Exercise 2, in this homework, we want to add the design of Weapon, so that a player's attack is determined by a variety of weapons that the player wears.

SOSEL
Service-Oriented Software Engineering Lab

題目說明1

- 目前已經有一個Weapon類別
  - 從程式中各位可以知道其最大攻擊力(attack)是 200,000,000 (共8個0)
  - 請設計一個static method與兩個新的constructor：
    - private static int generateRandomOffense()
      - 產生100,000,000 (共8個0) ~ 200,000,000 (共8個0)的亂數
    - public Weapon ()
      - 效果為把offense以亂數設定 (需呼叫上一個static method)。
    - public Weapon (Weapon weapon)
      - 效果為複製另外一個Weapon(即輸入的參數)的攻擊力。

題目說明₂

- Player類別的基礎功能跟之前一樣：
  - 具有兩個公開的static final field：MAX_HP和MIN_HP，型態為long，其值為10,000,000,000 (固定值，共10個0)與9,000,000,000 (固定值，共9個0)。
  - 具有三個私有的field：

    ```
    private final String name;
    private long hp;
    private Weapon[] myWeapon = new Weapon[3];
    ```

    - 請分別提供getName()和getHp()方法，回傳此二field的值。
    - 並設計setHp(long newHp)方法，可將hp設定為新給定的值。
      - 若給定的參數newHp < 0，則將hp直接設定為0。

SOSEL
Service-Oriented Software Engineering Lab

題目說明4

- 請加入Player的constructor (建構子)：

  `public Player(String name)`

  - 除了設定name之外，請將hp以亂數方式設定為 MIN_HP ~ MAX_HP

SOSEL
Service-Oriented Software Engineering Lab

題目說明5

▣ 請再加入3個method：

- public void makeWeapon()
  - 產生新武器，依序放入myWeapon陣列。
  - 若目前myWeapon陣列已有三個武器，就顯示錯誤訊息，並直接return。
- public void cloneWeapon()
  - 複製目前myWeapon陣列中最後一個武器，將此複製的武器放入陣列，再將被複製的武器之attack降為90% (折舊概念)。
  - 若目前陣列為空或已滿，就顯示錯誤訊息，並直接return。
- public int getAttack()
  - 請將目前所有武器的攻擊力加總後回傳。

題目說明6

- BattleGame.java是程式進入點，其預期功能為讓兩個Player對戰，兩方輪流攻擊對方，生命值會根據對方的攻擊值減少。(與Exercise 2類似)
  - 請至少實作指定的迴圈，讓雙方輪流攻擊，並能分出勝負。

SOSEL
Service-Oriented Software Engineering Lab