

程式設計作業(五)

主題：程式重構練習

利用重構觀念，配合前次設計的互動式圖書查詢程式，將其中可重複執行的功能獨立出來成為副程式或函式。例如，考慮前次範例程式中的基本功能，則可：

1. 建立讀取檔案機制，輸入不同圖書資料檔名，可以讀取不同的圖書資訊。
2. 建立寫入檔案機制，可以呼叫副程式輸入不同檔名，產生借書資料檔輸出。
3. 建立書號排序機制，執行函式可以將存在借閱書籍清單的陣列或集合做排序。
4. 建立查詢機制，輸入書號，可以呼叫副程式列出書籍資訊。
5.等等

修改利用 Visio 繪製的流程圖，將原先控制流程中的副程式或函式獨立出來，貼在 Word 說明文件中，說明文件中應詳細解說副程式或函式中各參數之輸入方式與作用。程式中應儘量加註解列說明變數意義。

繳交檔案包括程式原始碼(Java)及說明文件檔(Word)，壓縮後以學號為名之 rar 或 zip 檔 (學號_hw05.rar)，如 104007001_hw05.doc，上傳至 <http://140.128.65.120:8000/DataUpload> 傳檔前請務必依照所修課程班別確認選擇的課程名稱為 CompLang，否則將無法收到。
繳交時間：6 月 15 日上課前

附錄：前次作業參考附錄程式設計大富翁遊戲者，可將常用的遊戲功能如計算交易金額、存取遊戲資料紀錄、命運機會等，進行重構為副程式。

附錄參考程式: Traveller.java

```
import java.util.Scanner;

/**
 * @author snowlin
 */
public class Traveller {

    public static void main(String[] args) {
        // TODO code application logic here
        String[] country = {"Start Box", "Korea", "China", "Agentina", "Brazil",
            "Jail", "United Kingdom", "Mexico", "Swiss", "Swiden",
            "Chance", "Germany", "Greece", "France", "Italy",
            "Fate", "Taiwan", "Hong Kong", "Japan", "United States"};
        int[] price = {-2000, 500, 700, 200, 400,
            10000, 5000, 1500, 6000, 5500,
            0, 4500, 2500, 3500, 1500,
            0, 2000, 1000, 3000, 4000};
        int dice ;
        int money = 10000, count = 0, round = 0 ;
        boolean playcheck ;
        Scanner sc = new Scanner(System.in) ;
        do {
            playcheck = false ;
            dice = (int)(Math.random() * 1000) % 6 + 1 ;
            System.out.println("You are dicing " + dice + " steps") ;
            count = count + dice ;
            int m = count / country.length ;
            if(m > round) { // Pass the start box, deposit 2000
                money = money + 2000 ;
                System.out.println("You are passing the start box, you earn 2000\n"
                    + "You now have " + money) ;
                round = round + 1;
            }
            int n = count % country.length ;
            int withdraw ;
            if(country[n].equals("Chance")) {
                int chance, sign ;
```

```

        if(Math.random() > 0.5) { // Check if plus or minus money
            sign = 1 ;
        } else {
            sign = -1 ;
        }
        chance = (int)(Math.random() * 100) * sign ; // Create bonus
        withdraw = chance ;
    } else if(country[n].equals("Fate")) {
        int fate, sign ;
        if(Math.random() > 0.5) { // Check if plus or minus money
            sign = 1 ;
        } else {
            sign = -1 ;
        }
        fate = (int)(Math.random() * 100) * sign ; // Create bonus
        withdraw = fate ;
    } else if(country[n].equals("Jail")) { // Pay penalty in jail
        System.out.println("You are in " + country[n] +
            ", you have to pay " + price[n] + " for freedom!") ;
        withdraw = price[n] ;
    } else {
        System.out.println("You are visiting " + country[n] +
            ", it costs " + price[n] + "\n" +
            "Do you want to buy it?(Yes/No)" ) ;
        String buy = sc.next() ;
        if(buy.toUpperCase().charAt(0) == 'Y') {
            withdraw = price[n] ;
        } else {
            withdraw = 0 ;
        }
    }
    money = money - withdraw ;
    System.out.println("You are visiting " + country[n] + ", you pay " +
        withdraw) ;
    System.out.println("Your money is: " + money) ;
    if(money < 0) {
        playcheck = false ;
    } else {

```

```
System.out.println("Do you want to continue?(Yes/No)");
String check = sc.next();
if(check.toUpperCase().charAt(0) == 'Y') {
    playcheck = true;
} else {
    playcheck = false;
}
}
} while(playcheck);
System.out.println("You have money: " + money);
}
}
```