

## Homework #4

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RELEASE DATE: 04/14/2009

DUE DATE: 04/28/2009, 14:20

*As directed below, you need to upload your submission file to the designated place on the course website.*

*Any form of cheating, lying, or plagiarism will not be tolerated. Students can get zero scores and/or fail the class and/or be kicked out of school and/or receive other punishments for those kinds of misconducts. Discussions on course materials and homework solutions are encouraged. But you should write the final solutions alone and understand them fully. Books, notes, and Internet resources can be consulted, but not copied from.*

*Since everyone needs to write the final solutions alone, there is absolutely no need to lend your homework solutions and/or source codes to your classmates at any time. In order to maximize the level of fairness in this class, lending and borrowing homework solutions are both regarded as dishonest behaviors and will be punished according to the honesty policy.*

*Both English and Traditional Chinese are allowed for writing any part of your homework (if the compiler recognizes Traditional Chinese, of course). We do not accept any other languages.*

## 1 Description

We shall now continue with our development of the POOBBS. We will need a `P00Board` class that implements the boards on the BBS. A board is a collection of at most 1024 consecutive articles. It is **required** that you use the `P00Article` class provided to represent the articles. With the `P00Article` class, the `P00Board` class should implement the following methods:

```
public P00Board(String name){
    //create a board with the name
}
public void add(P00Article article){
    //append the article to the board
}
public void del(int pos){
    //delete the article at position pos
}
public void move(int src, int dest){
    //move the article at position src to position dest
}
public int length(){
    //get the current number of articles in the board
}
public void show(){
    //show the article titles of the board
}
```

In addition, there should also be a `P00Directory` class that can be used to implement a directory like "My Favorite." The directory is a collection of at most 1024 directories, boards, or splitting lines. The `P00Directory` class should implement the following methods:

```
public P00Directory(String name){
    //create a directory with the name
}
public void add(P00Board board){
    //append the board to the directory
}
public void add(P00Directory dir){
```

```
    //append the directory to the directory
}
public void add_split(){
    //append a splitting line to the directory
}
public void del(int pos){
    //delete the board/directory/splitting line at position pos
}
public void move(int src, int dest){
    //move the board/directory/splitting line at position src to position dest
}
public int length(){
    //get the current number of items in the directory
}
public void show(){
    //show the board/directory titles and splitting lines of the directory
}
```

There are several designs that can achieve the functions above. Your task, as an experienced programmer, is to come up of your favorite design about the relations between `P00Article`, `P00Board`, `P00Directory`, and any other classes that you want to implement. Then, realize your design and defend it with a written report. How do you want those classes to interact with each other? What are the advantages of this design? What are the disadvantages? Your arguments can be about implementation time, code reusing, hierarchy meanings, future maintenance, etc.. Please use your creativity and come up with an excellent report!

## 2 Requirements

- Implement the `P00Board` and `P00Directory` classes, and any additional classes that you need.
- Write a short report with at **most** two A4 pages that contains the following items:
  - (1) your name and school ID
  - (2) the relations between the classes that you design
  - (3) the advantages of your design
  - (4) the disadvantages of your design
  - (5) any part that you implemented that is worth getting “bonus” points

You should submit your report in **PDF** format. See <http://jsc.cc.ntu.edu.tw/ntucc/pcroom/manual/Word2Pdf.htm> for some possible instructions for converting from Word to PDF.

## 3 Submission File

Please upload a single ZIP encrypted file to CEIBA. The zip file should be like `b86506054.zip`, where the file name should be changed to your own school ID. The ZIP file should contain the following items:

- `P00Board.java`
- `P00Directory.java`
- `*.java`, which represent any other classes that you implemented
- `README` (optional), which instructs the TA to compile your files
- **Your report file in PDF format**