
Object Design

Exercise 1

Correct the code below in order to suppress all compilation errors.

```
class AClass {
    private String ident;
    static int val;

    public AClass (String ident){
        this.ident=ident;
    }
    public void getIdent(){
        return ident;
    }
    public display(){
        System.out.println("id " +ident);
    }
}
Class SubClass extends AClass{
    private int category;
    public SubClass(){
        super("no id");
        category=0;
    }
    public AClass(String name){
        super(ident);
        this.category=0;
    }
    public int getCounter(){
        return category;
    }
    public modify(int val ){
        category =val;
    }
    public void display()
    {
        System.out.println("my id is"+ident);
        Syntem.out.println("my category is " + category);
    }
}
class Main{
    public void main(String args)
    {
        subclass item1=new SubClass(2);
        SubClass item2=new SubClass{"foo"};
        item2.add(1);
        AClass item3=new AClass();
        item3.modify();
        AClass item4 = new SubClass();
        item1.display();
        item4.display();
    }
}
```

Exercise 2

1. Why when you execute a java program you have to give the name of the class which contains the `main` to the virtual machine `java` ?
2. In both the class `Aclass` and `SubClass`, we can see the same method name `display`, how do you call this programming concept? Why we use it ?
3. What you have to do to use in your program a class which belongs to the package `java.lang`, why ?

3 Problem

NB : To propose the code of this problem you can consider that the methods `input_string` and `input_int` (identical to this one we have seen in the lesson) are available and can be called to input variable from the keyboard.

The Ho Chi Minh city movie theater complex administration wants to improve its programming procedures and has bought a computer for this goal. So, our company asks you to design a new application essential to achieve this task.

The waited program has to manage 2 movie theater complexes. For each one, you have to implement a module that manage the programming task made each week by the administrator of the complexes. The available movies are classified in several categories:

1. adventure
2. social chronicles
3. science fiction
4. cartoons and movies for children.

The 2 movie theater complexes: the Select and the Hollywood, have 3 screens each. The viewing sessions take place at 18h, 20h, 22h for all screens but the Select can add viewing session for a cartoon or a movie for children at 16h (these movies can also be programmed at the other times).

Rules to create the weekly program All the available movies can be program in any screens of all cinemas but the same movie can not be programmed at the same time in 2 different screens of the same complexe (in the case of it exists several copies of the same movie)

What you have to do Implement the classes that you need to code the elements of this problem. Implement a Main class that contains the `main` with a menu that asks to the user what he wants to do :

- to create the list of the available movies for the week.
- to create the program of each theater,
- to display the program of one of the theater selecting by the name given by the user.
- to store the whole program in a text file.
- to restore a program from a text file saving previously by your program.