ECOLE NORMALE SUPÉRIEURE DE
L'ENSEIGNEMENT TECHNIQUE DE MOHAMMEDIA

UNIVERSITÉ HASSAN II DE CASABLANCA

ENSET

المدرسة العليا لأساتذة التعليم التقني
المحمدية
جامعة الحسن الثاني بالدار البيضاء

DEPARTEMENT MATHEMATIQUES ET INFORMATIQUE

Design Pattern

Filière :
« Génie du Logiciel et des Systèmes Informatiques Distribués »
GLSID

Pattern Composite

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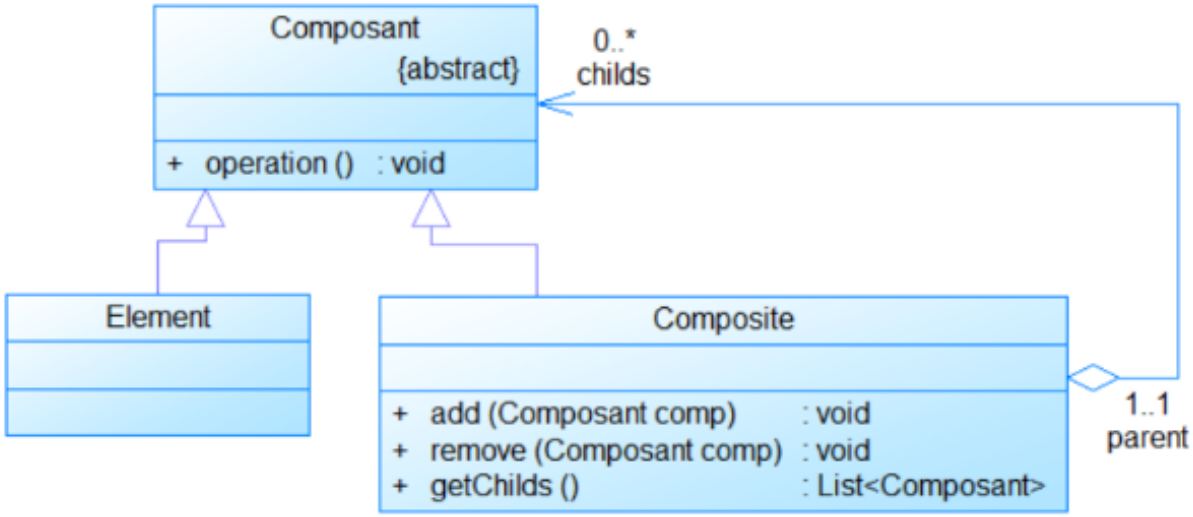
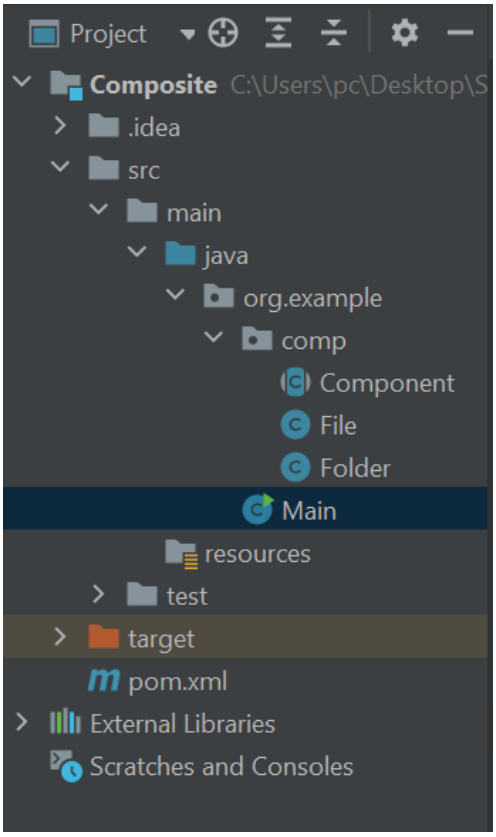
Pattern Composite



Structure de projet :



Classe abstraite Component :

```java
package org.example.comp;
8 usages  2 inheritors
public abstract class Component {
    3 usages
    protected String name;
    3 usages
    protected int level=0;
    2 usages
    public Component(String name) {
        this.name = name;
    }

    2 usages  2 implementations
    public abstract void show();

    2 usages
    public String tab(){
        String tab="";
        for(int i=0;i<level;i++){
            tab+="\t";
        }
        return tab;
    }
}
```

La classe Folder :

```java
import ...
15 usages
public class Folder extends Component {
    2 usages
    private List<Component> childs=new ArrayList<>();
    5 usages
    public Folder(String name) {
        super(name);
    }
    14 usages
    public Component addComponent(Component component){
        component.level=this.level+1;
        childs.add(component);
        return component;
    }
    2 usages
    @Override
    public void show() {
        System.out.println(tab()+"Folder : "+ name);
        for (Component c:childs){
            c.show();
        }
    }
}
```

La classe File :

```java
package org.example.comp;


11 usages
public class File extends Component {
    10 usages
    public File(String name) {
        super(name);
    }

    2 usages
    @Override
    public void show() {
        System.out.println(tab()+"File : "+ name);
    }
}

```

Test :

```java
package org.example;
import ...
no usages
public class Main {
    no usages
    public static void main(String[] args) {
        Folder root=new Folder( name: "Design Patterns");
        Folder d1=(Folder) root.addComponent(new Folder( name: "Comportement"));
        Folder d2=(Folder) root.addComponent(new Folder( name: "Structure"));
        Folder d3=(Folder) root.addComponent(new Folder( name: "Creation"));
        d1.addComponent(new File( name: "Strategy"));
        d1.addComponent(new File( name: "Observer"));
        d2.addComponent(new File( name: "Decorator"));
        d2.addComponent(new File( name: "Composite"));
        d3.addComponent(new File( name: "Adapter"));
        d3.addComponent(new File( name: "Singleton"));
        d3.addComponent(new File( name: "Builder"));
        Folder d21=(Folder) d2.addComponent(new Folder( name: "Str21"));
        d21.addComponent(new File( name: "C211"));
        d21.addComponent(new File( name: "C212"));
        d21.addComponent(new File( name: "C213"));
        root.show();
    }
}
```

Résultat :

```
Folder : Design Patterns
    Folder : Comportement
        File : Strategy
        File : Observer
    Folder : Structure
        File : Decorator
        File : Composite
        Folder : Str21
            File : C211
            File : C212
            File : C213
    Folder : Creation
        File : Adapter
        File : Singleton
        File : Builder

Process finished with exit code 0
```