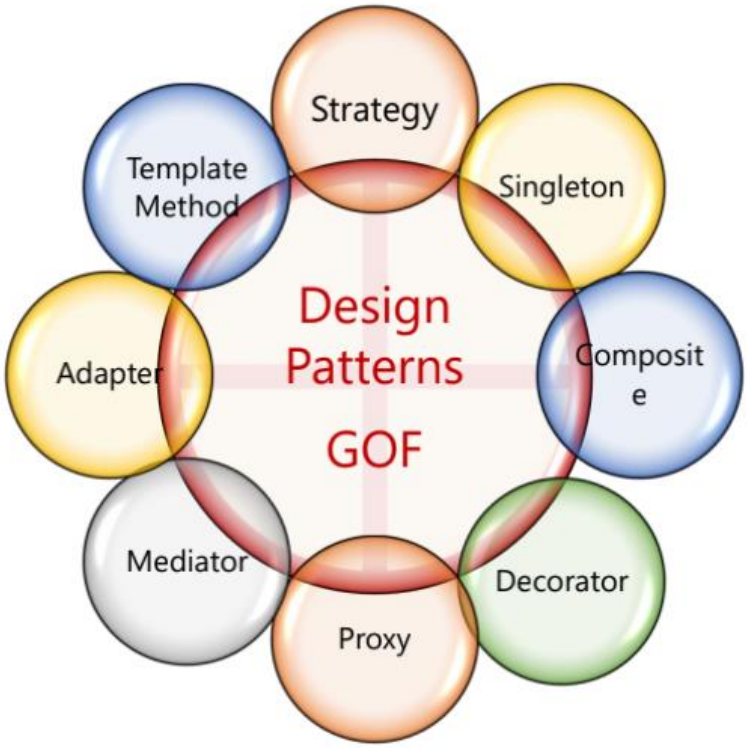
جامعة الحسن الثاني بالدار البيضاء
UNIVERSITÉ HASSAN II DE CASABLANCA

ENSET
ECOLE NORMALE SUPÉRIEURE DE L'ENSEIGNEMENT TECHNIQUE DE MOHAMMEDIA
UNIVERSITÉ HASSAN II DE CASABLANCA

Composite Pattern



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Année universitaire : 2023-2024

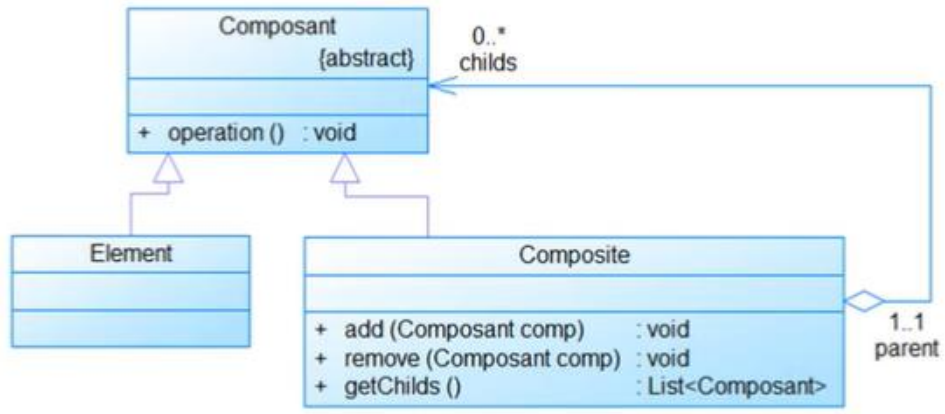
Catégorie :

Structure

Objectif :

- Organiser les objets en structure arborescente afin de représenter une hiérarchie.
- Permettre à la partie cliente de manipuler un objet unique et un objet composée de la même manière.

Diagramme de Classe :



Classe composant :

```
public abstract class Component {
    protected String name;
    protected int level=0;

    public Component(String name) {
        this.name = name;
    }

    public abstract void show();

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

Classe File :

```
public class File extends Component{
    public File(String name) {
        super(name);
    }

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

Classe Folder :

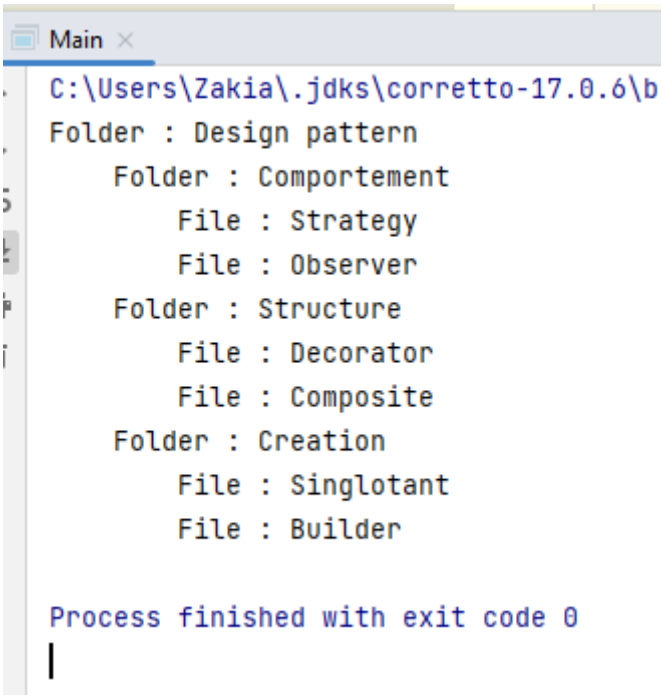
```
public class Folder extends Component{

    private List<Component> childs=new ArrayList<>();

    public Folder(String name) {
        super(name);
    }

    public Component addComposant(Component component){
        component.level=this.level+1;
        childs.add(component);
        return component;
    }
    @Override
    public void show() {
        System.out.println(tab()+"Folder : "+name);
        for(Component c:childs){
            c.show();
        }
    }
}
```

Main

```
public class Main {
    public static void main(String[] args) {
        Folder root=new Folder("Design pattern");
        Folder d1=(Folder) root.addComposant(new Folder("Comportement"));
        Folder d2=(Folder) root.addComposant(new Folder("Structure"));
        Folder d3=(Folder) root.addComposant(new Folder("Creation"));
        File f11=(File) d1.addComposant(new File("Strategy"));
        File f12=(File) d1.addComposant(new File("Observer"));
        File f21=(File) d2.addComposant(new File("Decorator"));
        File f22=(File) d2.addComposant(new File("Composite"));
        File f31=(File) d3.addComposant(new File("Singlotant"));
        File f32=(File) d3.addComposant(new File("Builder"));
        root.show();
```

```
    }
}
```

Affichage :


Main
C:\Users\Zakia\.jdks\corretto-17.0.6\b
Folder : Design pattern
Folder : Comportement
File : Strategy
File : Observer
Folder : Structure
File : Decorator
File : Composite
Folder : Creation
File : Singlotant
File : Builder
Process finished with exit code 0