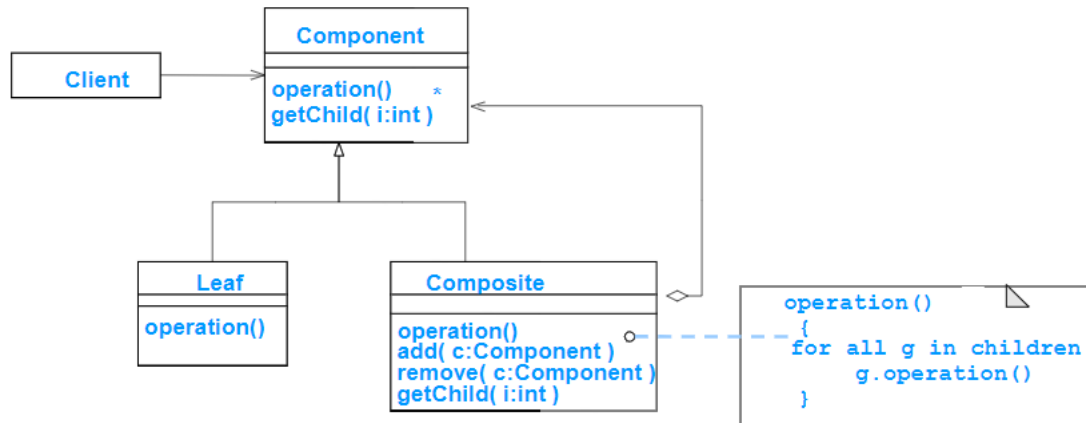
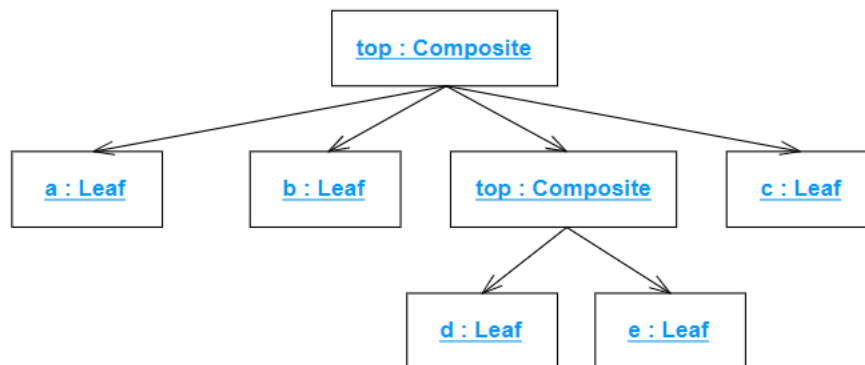


# Composite Design Pattern

## Class Diagram



## Object Diagram



**Code:**

```
package Composite;
import java.util.ArrayList;
import java.util.List;

interface Student {
    void display();
}

class SingleStudent implements Student {
    String name;
    int age;

    public SingleStudent(String name, int age) {
        this.name = name;
        this.age = age;
    }

    public void display() {
        System.out.println("Student Name: " + name + " | Age: " + age);
    }
}

class GroupStudent implements Student {
    List<Student> s = new ArrayList<>();

    public void add(Student student) {
        s.add(student);
    }

    public void remove(Student student) {
        s.remove(student);
    }

    public void display() {
        for (Student student : s) {
            student.display();
        }
    }
}

class compositepattern {
    public static void main(String[] args) {
        SingleStudent s1 = new SingleStudent("Harshit", 19);
        SingleStudent s2 = new SingleStudent("Kenil", 18);
        SingleStudent s3 = new SingleStudent("mahil", 19);

        GroupStudent group = new GroupStudent();
        group.add(s1);
        group.add(s2);
        group.add(s3);
        group.display();
        group.remove(s3);
        group.display();
    }
}
```

**OutPut:**

```
C:\Users\harsh\.jdk\openjdk-19.0.1\bin\java.exe "-javaagent:  
Student Name: Harshit | Age: 19  
Student Name: Kenil | Age: 18  
Student Name: mahil | Age: 19  
Student Name: Harshit | Age: 19  
Student Name: Kenil | Age: 18  
  
Process finished with exit code 0
```