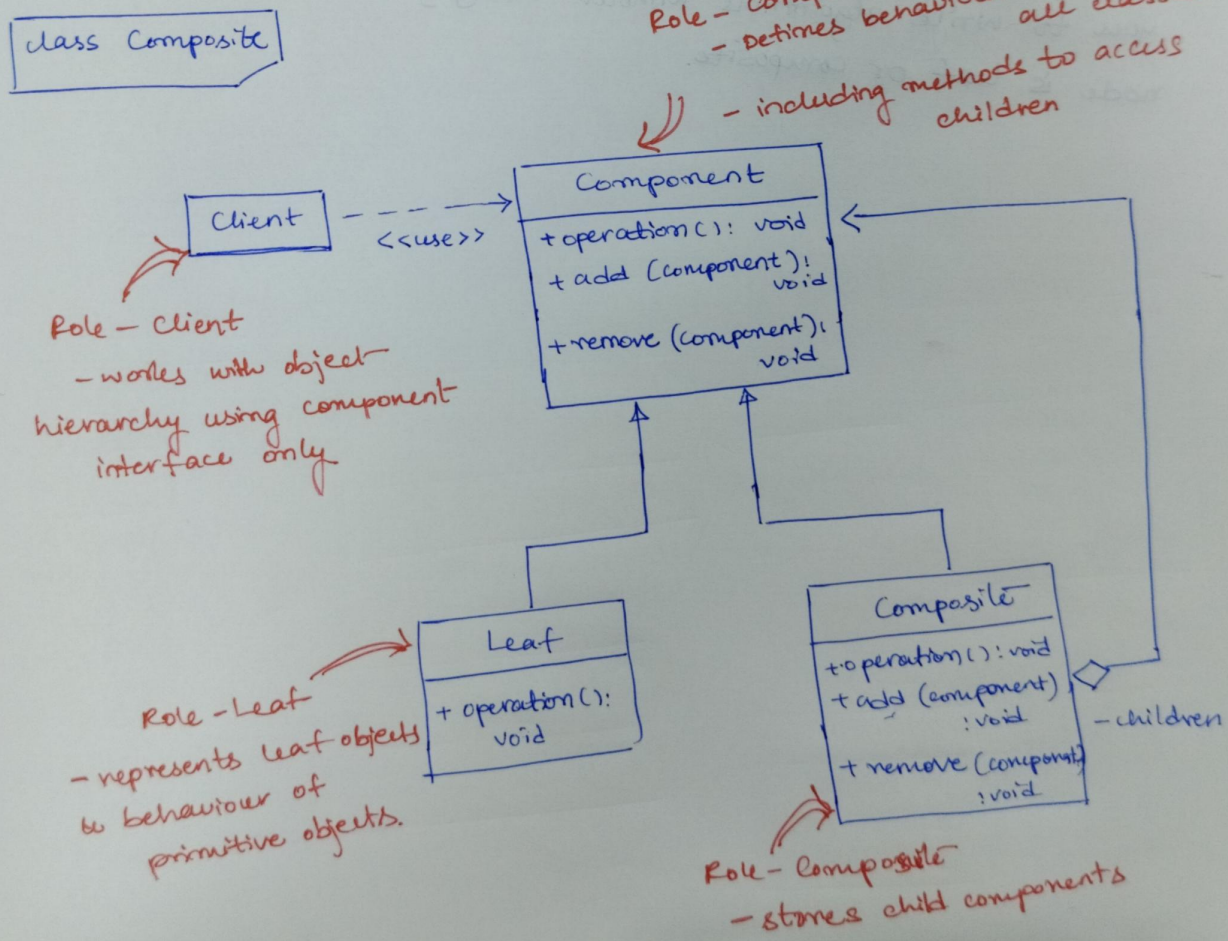
Composite :-

What is composite?

- We have a part-whole relationship or hierarchy of objects and we want to be able to treat all objects in this hierarchy uniformly.
- This is not a simple composition concept from object oriented programming but a further enhancement to that principle.
- Think of composite pattern when dealing with tree structure of objects.

UML :-



Implement a Composite :-

→ We start by creating an abstract class / interface for component.

- component must be declare all methods that are applicable to both leaf and composite.
- We have to choose who defines the children management operations; component or composite.
- Then we implement the composite. An operation invoked on composite is propagated to all it's children.
- In leaf nodes we have to handle the non-applicable operations like add/remove a child if they are defined in component.

→ In the end, a composite pattern implementation will allow you to write algorithms without worrying about whether node is leaf or composite.