

## Worksheet: Composite Pattern 2

In the lectures you have seen that the component specific methods can either be declared in the composite interface *Composite* (SAFE) or in the interface *Component* (TRANSPARENT).

As composite specific methods we have proposed the following ones:

```
add(Component c)
remove(Component c)
getComponents()
```

For this worksheet we assume that we follow the TRANSPARENT approach, i.e. the component specific methods are declared in the *Component* interface and have to be implemented both in the *Composite* as well as in the leaf classes. However, for the leaf classes these methods are in some sense unnecessary.

Although these methods are “unnecessary”, they still have to be implemented. Make a proposal how the above listed methods could be implemented in the leaf classes (i.e. in those classes which do not represent composite figures) in conformity with the specification of the interface methods.

For your proposal you may change the signatures of the above listed methods and you may also add additional methods or restrict the visibility of some methods.