

### **Composition pattern**

For the composition pattern, class *node* is an interface act as a component class. Class *node* implements interface *directory* and act as a composite participant. Class *file* extends class *node* and serve as leaf participant.

### **Observer pattern**

For the observer pattern, since *directory* won't be observed, all method will be written concrete Subject class *File*. Class *observer* act as an observer and class *Fileobserved* act as concrete observer.

