

PROGRAMMING LANGUAGE ASSIGNMENT

How do visitors compare with equivalent iterator based-code ? Do they add new functionality ? What else are visitors good for, in addition to iteration ?

According to definition, "visitor pattern" is a way of separating an algorithm from an object structure. Visitor pattern is a kind of pattern that is like other pattern types. The difference among visitor pattern and others is that, the pattern consists of tangible structure different from object structure like accept and visitor interfaces for every visitor. Accept and visitor interfaces are main structures of visitor pattern. If visitor object is accepted by program, then the program can allow this object to be processed on itself.

When we compare visitors and equivalent iterator based-code, we can see some differences between them. Both of them do same process with different ways for tree-traversal. Iterations is used on data structure (list, queue, stack etc.) and it has one layer which is object structure. Visitor pattern has another layer different from object structure. Second layer allows whether visitors process operations or not using accept and visitor interfaces. When visitor can be accepted by program, then it can visit the process. There is a relation with object structure. Moreover thanks to second layer, visitor process a new operation without changing classes.

Visitors can also add new functionality thanks to visitor pattern because when using visitor pattern, different types of visitors can be accepted by program (For example, sending text message and multimedia message instead of sending only text message). The reason is that visitor pattern used to double dispatch (double dispatch is a kind of re-implementation for different object types, briefly a kind of operation like overloading). Thus, new functionality can be added using Visitor Pattern.

In addition, using visitor pattern is easy to understand and it is sometimes best way to separate code for hierarchical structures. We can use different object types using visitor design pattern. At the beginning of compiling, types are controlled by the help of accept and visitor interfaces and when doing like this, it is not necessary to change object structure. If our structure is so simple, then we can use iteration instead of visitor pattern. When using iteration, there is no need to re-control for every new visitor or it is not necessary to use double dispatch. Especially when the program is basic for implementation (not hierarchical structure) , iteration is the best design pattern for visitor.

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