

Memento

Vreda Pieterse and Linda Marshall

Department of Computer Science
University of Pretoria

30 July 2010

Overview

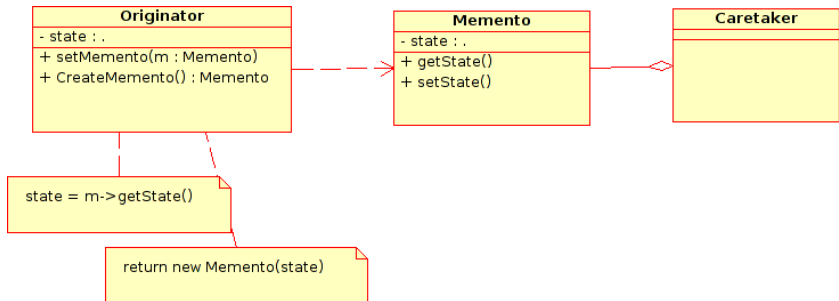
- 1 Identification
- 2 Structure
- 3 Participants
- 4 Related Patterns
- 5 Example

Name and Classification:

Memento (Behavioural)

Intent:

“Without violating encapsulation, capture and externalise an object’s internal state so that the object can be restored to this state later.” GoF(283)



Memento

- Stores internal state of the Originator object.
 - The memento may store as much or as little of the originator's internal state as necessary at its originator's discretion.

Memento

- Protects against access by objects other than the originator.
 - Caretaker sees a narrow interface to the Memento - it can only pass the memento to other objects.
 - Originator sees a wide interface, one that lets it access all the data necessary to restore itself to its previous state. Ideally, only the originator that produced the memento would be permitted to access the memento's internal state.

Originator

- Creates a memento containing a snapshot of its current internal state.
- Uses the memento to restore its internal state.

Caretaker

- is responsible for the memento's safekeeping. state.
- never operates on or examines the contents of a memento.

Related Patterns

- **Command** (263): Commands can use mementos to maintain state for undoable operations.
- **Iterator** (289): Mementos can be used for iteration to maintain the state of the iterator.

