

Design Patterns

Memento

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Design pattern: Memento

- **Category:** Behavioral design pattern
- **Intent:**
 - Without violating encapsulation, capture and externalize an object's state so it can be restored later
- **Motivation**
 - Record checkpoint or undo mechanism
 - Serialize object state

Applicability

- A snapshot of an object's state must be saved so it can be restored later, *and*
- A direct interface to obtaining the state would expose implementation details and break the object's encapsulation

Participants

- Memento
 - Stores internal state of the Originator object
 - Can be full state or partial state
 - Protects against access by objects other than originator
 - Caretaker sees a *narrow* interface
 - Originator sees a *wide* interface
 - Originator
 - Creates a memento containing snapshot of relevant state info
 - Uses memento to restore internal state
 - Caretaker
 - Is responsible for the memento's safekeeping
 - Never operates on or examines the contents of the memento

Memento UML

