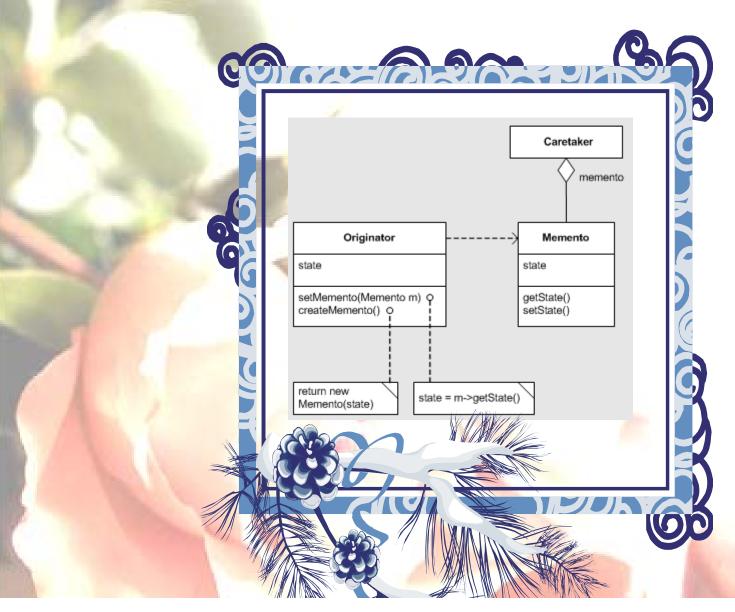# Memento Pattern

Memento pattern

Meaning :

remember, be mindful, A hint, suggestion, token, or memorial, to awaken memory, that which reminds or recalls to memory or

a souvenir.

Memento pattern

Like a locket , that one man give to one girl for remind to the happy time between them.

Memento pattern Diagram

Memento pattern Basic Idia

- "Originator" has a state
- "Caretaker" can make a snapshot of the state of the Originator

Example. Memento of Valentine

Categorize the items below

The locket   You&Me at the restaurant

The pictures of You&Me   You   Me

Camera   Video Camera   Video tape Wedding

Honeymoon trip   Letters   Wedding ceremony

Originator   State   CareTaker   Memento

Solution Memento of Valentine

State — Status or properties that occurred

- Honeymoon trip
- Wedding ceremony
- You&Me in the restaurant

Originator — capture the state or has the state inside

- Camera
- Video Camera

CareTaker — Who keep the memories

- Me
- You

Memento — The memorial or remind able thing

- Letters
- Video tape Wedding
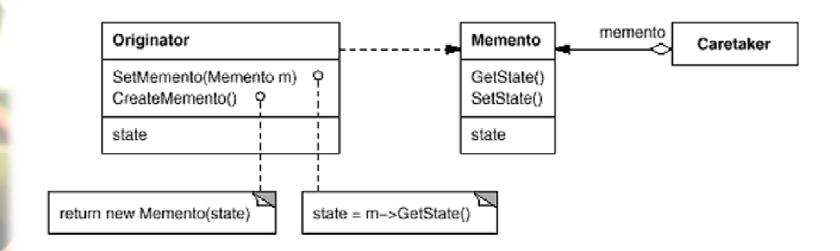- The locket
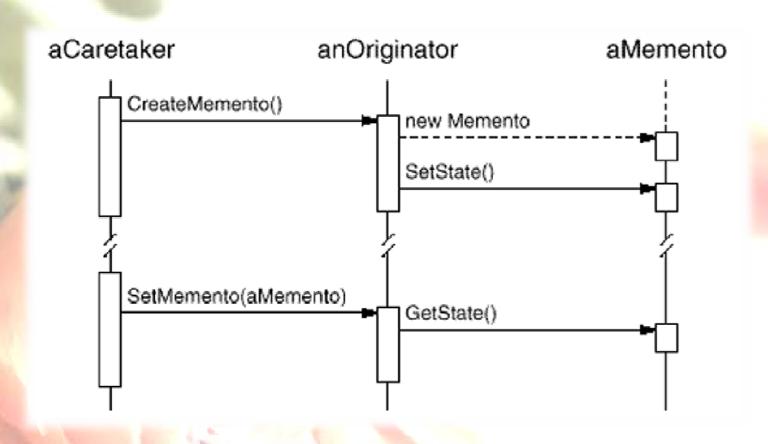- The pictures of You&Me

Why and When

Why Memento?

- Memento design for give object's ability to remember state itself

- a snapshot of (some portion of) an object's state must be saved so that it can be restored to that state later

Momento's structure

Originator
SetMemento(Memento m) ○
CreateMemento() ○
state

Memento
GetState()
SetState()
state

memento ── Caretaker

return new Memento(state)

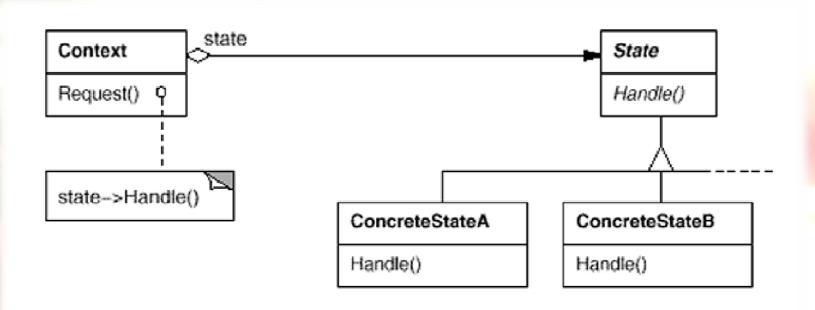state = m->GetState()

Memento's collarboration

When Memento?

- Implementing application that can restore previous states
- Redo and Undo function in various application
- Game character that's poisioned!
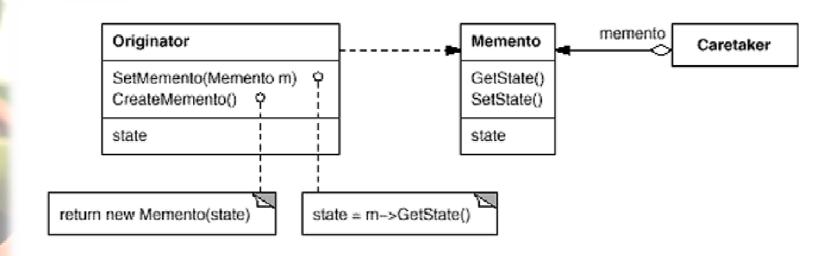
Memento V.S. State Pattern

Look alike!

- They have shared same word in definition! (state)
- Involve in view-tier maintenance
- Make the object (application) rely on a set of defined data

State pattern

Memento pattern

But look careful!

Memento

- Object maintain owning state itself

- Involve in data representation, not behavior

- a snapshot of (some portion of) an object's state must be saved so that it can be restored to that state later, *and*

State

- Swap behavior following defined state

- Involve in behavior, not data representation

- An object's behavior depends on its state, and it must change its behavior at run-time depending on that state.

Memento at all!

- Maintain state itself
- Most used in redo and undo ability for application