Memento:

**Other name (if any)**

The Memento pattern is also known as **Token or Snapshot.**

**What it does**

Memento pattern is used to restore state of an object to a previous state. It is a behavioral design pattern. It caches the history of the object. It is possible to go back to the previous state of the object. It has three properties: originator, mementor, caretaker. Originator is the original object which will be cached. Mementor is that state of originator. That means it holds the state of the originator at a particular point in time.. On the hand, caretaker manages the history of memento.

**Where to use**

1. To cache object.  
2. To have the history of the object  
3. To undo a state  
4. When you need to save the state of an object at various points in time to support features like versioning or checkpoints.  
5. When you need to rollback changes to an object’s state in case of errors or exceptions, such as in database transactions.  
6. When you want to cache the state of an object to improve performance or reduce redundant computations.

**Steps**

1. Originator Class: It has all the properties and methods which are needed for the original object. It has extra two methods. They are: createMemento and restoreMemento. createMemento will create memento state. restoreMemento will set the state of originator to the state of the given memento.  
2. Memento Class: It has all the properties and methods same as originator except two extra methods.  
3. Caretaker Class: It has list of memento history. It has two methods one is addMemento and another one is undo. addMemento will add memento object to the history list.l, undo will return the last memento state and remove it from the history list.  
4. Client Code: It will create caretaker object using caretaker class. It will create originator object using originator class and memento object using originator class and createMemento. call addMemento method of cartaker to add memento in history.

**Special cases (if any)**

placeholder

**Advantages**

1. Memento pattern enables the implementation of an undo feature, allowing users to revert changes and restore previous document states.

**Disadvantages**

1. : If the object’s state is large or complex, storing and managing multiple snapshots of its state can consume a significant amount of memory and processing resources.  
2. If the object’s state changes frequently and unpredictably, storing and managing snapshots of its state may become impractical or inefficient.  
3. If the object’s state is immutable or easily reconstructible, there may be little benefit in using the Memento pattern to capture and restore its state.

**Code**

Coding Concept

**Difference with similar pattern**

placeholder

**Diagram**

Coding Concept