

* What is memento design pattern?

→ It's used when we want to save snapshots of object or state.

- Let's understand with example.

Suppose, we have a state object whose state constantly changes. Now we want to take snapshot of object whenever object goes to new state.

- Snapshot will help us to understand previous state of object.

In short

- save object snapshots / states.

- previous undo capability.

- Rollback to previous stable state.

3 magic word to understand memento pp.

① Memento (~~originator~~)

→ snapshot of originator's state.

→ stores internal state

→ provides get state.

② Originator

→ object whose state changes. (ex-database).

→ creates memento.

→ restores from memento.

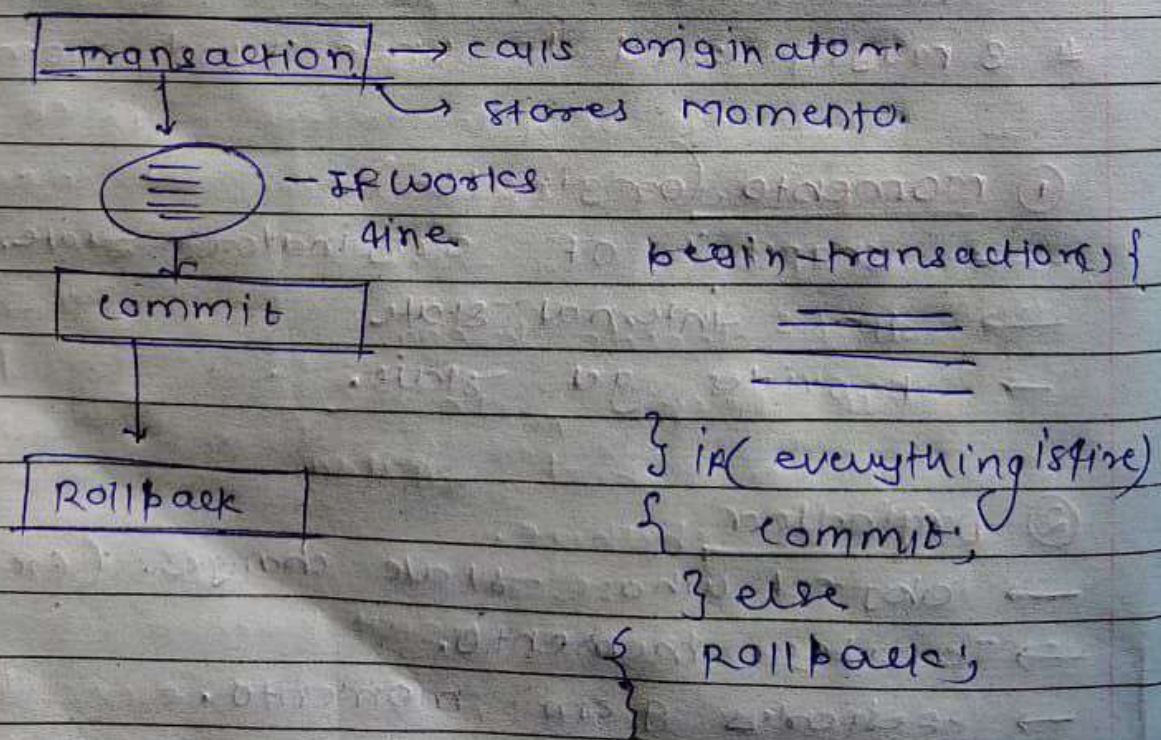
③ Coordinator

- manages Mementos
- stores list of mementos
- initiate begin | commit | Rollback.

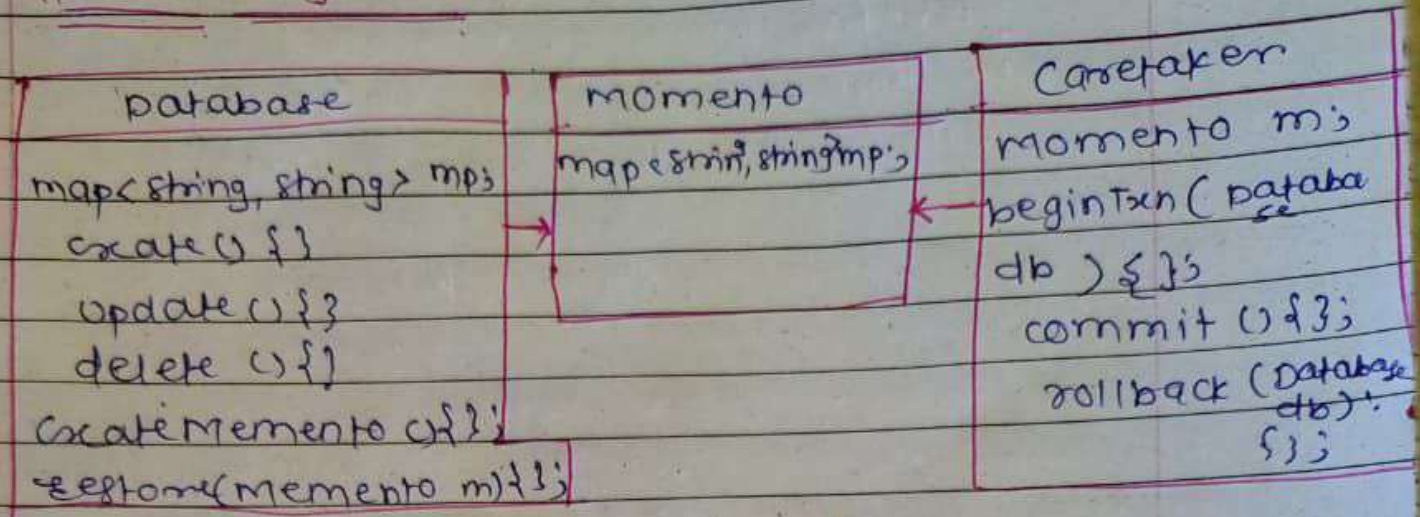
Example of DB transaction manager.

Suppose in SQL you have to change Roll No and Name of student in student table database while only Roll No. change it leads to inconsistency problem. to prevent these all problem we have transaction - savepoint, rollback, commit. which will rollback to consistent state. because of partial and inconsistent operation.

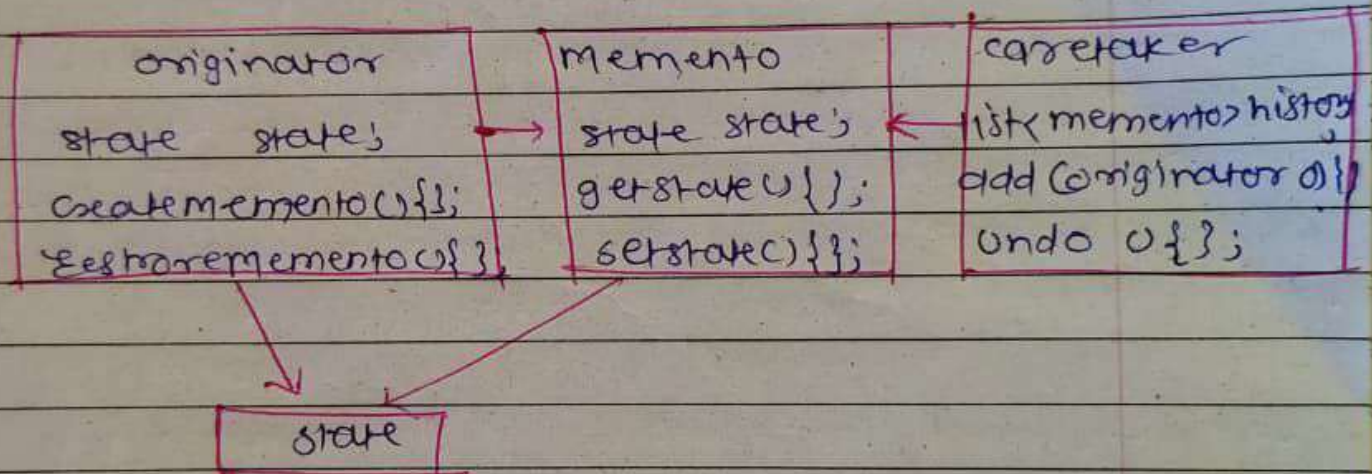
Steps in Database Transaction.



UML Diagram:-



standard UML of Memento pattern.



standard definition

- provides an ability to take snapshot of an object at various point in time and provide undo capabilities to a previous state.

Real time use case

- ① database transaction management.
- ② version control systems.
- ③ Any appⁿ needing undo capabilities.
- ④ saving object state for failure recovery.