Backtracking

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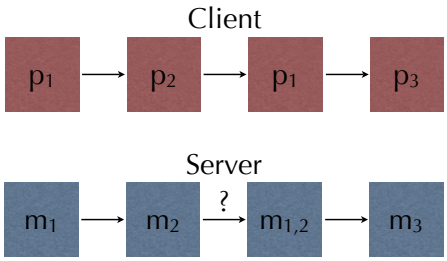
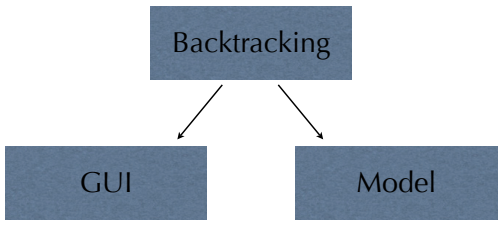
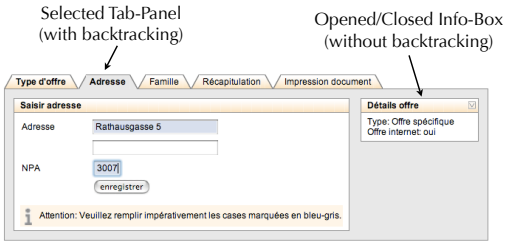
Problem



When to Backtrack?



GUI State



Model State

- Online Bookstore (*without backtracking*)
  - When using the back-button, usually the items shouldn't be removed from the cart; just resume browsing from the old location.
- Flight Reservation System (*with backtracking*)
  - When using the back-button, usually you want to check other flight prices, this means the selected flight should be removed.

Backtracking State

- Seaside doesn't backtrack state by default.
- Often it isn't obvious, whether an object should be backtracked or not. Mostly this has to be decided by the developer on a per-object basis.
- Any object can be registered within a Session to be backtracked.

State Holder

- Wrap your object into a WAStateHolder.
- Write accessor methods to access your object.

```
modelHolder := WAStateHolder new
    contents: model;
    yourself.
```


Example

```
SomeComponent>>initialize
    super initialize.
    modelHolder := WAStateHolder new.

SomeComponent>>model
    ^ modelHolder contents.

SomeComponent>>model: aModel
    modelHolder contents: aModel.
```


Register Object

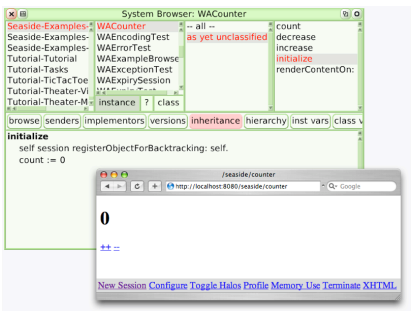
- Register your object within the current session for backtracking.
- This will backtrack the instance-variables of your object, not the object itself.
- When replacing the object with a new instance you have to re-register.

```
self session
    registerObjectForBacktracking: model.
```


Example

```
SomeComponent>>initialize
    super initialize.
    self session
        registerObjectForBacktracking: self.
```


Example



Summary

Seaside handels the backtracking transparently, by registering objects within the session.

Developers have to decide depending on the requirements, if backtracking is needed.

Further Reading

- Stéphane Ducasse, Adrian Lienhard, Lukas Renggli, Seaside – Multiple Control Flow Web Application Framework
  - 6.1 Backtracking State
- Lukas Renggli, Seaside Tutorial:
  - Questions: 9 – 11
  - Exercises: 16, 29 – 31