

Using Workflow

0.1 Overview document

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1. Terms

Workflow Schema

A workflow schema defines a state machine (deterministic finite automaton - DFA), consisting of

- states, including a marked initial state,
- transitions, and
- state variables.

Workflow Instance

A workflow instance is an incarnation of a workflow schema. It consists of

- a current state,
- a mapping which assigns values to all state variables.

Transition

A transition describes the switching of a workflow instance from one state to another. A transition has

- a source state,
- a destination state,
- an event,
- a set of conditions,
- a set of assignments.

Additionally, a transition can be marked as synchronized.

History

The history of a workflow instance contains all versions of the instance. A version contains

- the state,
- the event that caused the transition (omitted in the first version)

State Variable

A workflow schema can contain a set of state variables. For each instance, the state variables hold certain values. Values can be assigned during transitions, so a variable can change its value when a transition fires. Currently, Lenya supports

only boolean state variables.

Condition

A condition can prevent a transition from firing, based on the current situation.

Examples:

- Does the current user have a certain role on the current URL? (`RoleCondition`, included in `Lenya`)
- Does a certain state variable have a certain value (e.g., is the document published)? (`BooleanVariableCondition`, included in `Lenya`)
- Is the sun shining? (e.g., if the weather report may only be published on sunny days)

Situation

A situation defines the state of the environment of a workflow instance. Examples are:

- the current user ID
- the roles of the current user on the current URL

2. The State Machine

When an event e is invoked on a workflow instance I , the following algorithm is executed:

- The current state $s_{current}$ is determined.
- The transition t from $s_{current}$ to s_{next} which has the event e is determined.
- If t is not exactly defined, an exception is thrown.
- All conditions of t are validated.
- If all conditions are complied, the transition t fires:
 - All assignments of t are executed.
 - The workflow instance I is advanced to the state s_{next} .

3. The Workflow Schema

The workflow schema definition files of a publication are located at

```
{publication}/config/workflow/
```

4. Assigning Workflow Schemas to Document Types

A workflow schema can be assigned to a document type in

```
{publication}/config/doctypes/doctypes.xconf
<doctypes>
  <doc type="content-page">
    ...
    <workflow src="workflow.xml"/>
  </doc>
```

```
...  
</doctype>
```

5. Initializing the Workflow History

6. Synchronization