Workflow Terms

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 a list of all versions of the instance. A version contains

- the state,
- the event that caused the transition (omitted in the first version),
- a description of the identity that invoked the event (username and IP address)

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

Synchronization

A set of workflow instances with the same workflow schema can be synchronized. If a transition in this schema is marked as synchronized, it can only be invoked on all instances in the set at the same time.

When a workflow event is invoked on a set of synchronized workflow instances, the transition is invoked only if

- all instances are in the source state of the transition, and
- all conditions of the transition are complied for all instances.

Then the transition is invoked for all instances in the set.

A common usecase of this concept is the simultaneous publishing of a set of documents (all language versions of a document, a section, ...).