User Interfaces

Outline

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1 Modelling Interface: Views and Editors

Modelling Interface

Contains 3 views and an editor.
Modelling Views and Editors: Summary

- **Explorer View** Showing a tree structured view of the workspace.
  - Connects to the *Database*.
  - Connects to the *Event-B Editor* for editing components.

- **Event-B Editor** A specific editor for creating and modifying event-B components.
  - Multi-page Editor.
  - Form Editor.
  - Connects with the *Database*.

- **Outline View** Showing the tree structured view of the current editing component.
  - Connects with the current active *Event-B Editor*.
  - Provides navigations for the editing component.

- **Problems View** Showing error/warning messages.
  - Connects with *Event-B Editors* for navigations of error messages.

2 Proving Interface: Views and Editors

**Prover Interface**

Contains 4 views and an editor.
Proving Views and Editors: Summary

- **Obligation Explorer** Showing a tree structured view of the obligations in the workspace.
  - Connects to the *Database*.
  - Connects to the *Prover UI Editor* for proving obligations.
- **Prover UI Editor** Showing the current state of the proof.
  - Showing different set of hypotheses: selected, cached or searched.
  - The current goal.
- **Proof Tree** Showing the tree structured view of the current proof.
  - Connects with the current active *Prover UI Editor*.
  - Provides easy navigations on the proof tree (e.g. travel between different sub-goals).
- **Proof Control** Controlling the proof.
  - A set of buttons.
  - A text field for optional input.
  - Showing proof messages (successful, hint, etc.)
- **Proof Information** Showing related information to the current obligation.

3 Extending the User Interface

Extending the Modelling Interface

- *Adding a new element type* (*e.g.* probabilistic invariants):
  - Implement a form page;
  - Extend the extension point to add this page to the Event-B Editor.
- *Adding an attribute to an element*:
  - Adding a new column to the editing page (*e.g.* when adding probabilities to guards),
    or
  - Editing the new attribute in the detail page (*if* the attribute needs more space, *e.g.* multi-line comments).

4 Extending the Proving Interface

Extending the Proving Interface

- *Adding a new goal tactic* (*added to the goal section)*:
  - Declare a new goal tactic with a new symbol (shown next to the goal) and when the tactic is applicable;
  - Implement the call to new tactic.
- *Adding a new hypothesis tactic* (*added to the hypothesis section)*:
– Declare a new hypothesis tactic with a new symbol (shown next to the hypothesis) and when the tactic is applicable;
– Implement the call to the new tactic.

• Adding a new global tactic (added to the Proof Control):
  – Add a new button (or extend the current button) in the Proof Control and when this is applicable;
  – Implement the call to the new tactic.

5 To be done next

Next ...

• Improve the GUI’s usability: Adding more buttons, menu, toolbar, to both modelling and proving interfaces, etc.

• Declare extension points.

• Extend the GUI for refinement component.