Shopper: Plan Interpreter Demonstration
Storyboard for ICAPS 2010 System Demonstration

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We will begin with an overview of the system.

- Shopper interprets LTML plans. LTML is an extension of PDDL with:
  - Actions that have outputs.
  - Complex control structures (if desired).
- Shopper enables researchers to move beyond validation of plans to testing of plans.
- Shopper includes an easy-to-program simulator.
Web Services Composition/Planning

We will next illustrate basic system operation.

- Examples of LTML plans.
  - Zoom in on an operator — PDDL-like (LTML notation).
  - Web service markup.
  - LTML control structures
    - Linear classical plans.
    - Looping and branching plans.

- Demo of plan execution.
  - Web services accessed using SOAP.
We will then demonstrate the system’s support for simulation.

Motivation:

- Working with real web services is not ideal for experimentation, debugging, etc.
- Most web services backed by databases: cumbersome to refresh, reinitialize when debugging plans.
- Shopper incorporates a simulator for the web services which incorporates a Prolog-style state model.
  - Belief state corresponds to the state of the world.
  - Hidden from the executing agent, whose belief state includes only what it is able to query and infer.

Demonstration:

- Illustrate excerpt of source behind service simulation.
- Plan execution against a simulated web service
  - Side-by-side comparison of agent’s belief state vs. web services’ actual state.
We will demonstrate plan executions on a debugger UI.

The Shopper debugger includes typical visualization features which will support an easy-to-follow presentation.

- Stepping through source code.
- Breakpoints to quickly reach statements of particular interest.
- Examination of key variables.
We will conclude with a short summary of the system’s contributions.

We have built an interpreter for an extension of PDDL.

- Incorporates a simple, very flexible simulator.
- Provides an easy framework for planning-related experimentation.
  - General, web service-friendly framework.
  - Extend plan evaluation from validation (e.g. VAL) to testing.
- Useful GUI debugging environment.