Pattern Based User Interface Generation

Mestrado em Engenharia Informática

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Agenda

- Context
- Patterns
- UsiXML
- Project

Context

What makes a successful software?

- The answer is getting less technological…
- … and more about how the software handles Human Computer Interaction.
- This is a problem for most developers.

Context

How are user interfaces built?

- Manually coding everything.
- Generating code through WYSIWYG tools.
- Some work on model driven development.

Patterns

Can patterns help?

- Patterns are very useful in other areas.
- Patterns are solutions that have been used in other projects.
  - Patterns promote reusability.
  - Patterns have already been used and tested. If a user interface pattern is known to be compliant with HCI rules, an instanciation of that pattern is also compliant with HCI rules.

Patterns

What kind of patterns?

- Patterns usualy hava a name, a problem, a soluction and a set of consequences.
- In "*Generative Pattern-Based Design of User Interfaces*", *Jean Vanderdonckt* and *Francisco Simarro* define two kinds of patterns:
  - Descriptive patterns;
  - Generative patterns.

Patterns

How can we specify them?

- UML is not suitable.
- UsiXML.
  - XML based language developed from scratch with the objectvive of expressing user interface models.

UsiXML

How can we use UsiXML?

- UsiXML is divided in a set of components.
  - Abstract user interface model;
  - Task model;
  - Context model;
  - Domain model;
  - Mapping model.

Project

What features will be supported?

- Read and interpret patterns specied in UsiXML models.
- Read and interpret source code of one or more OOP language with annotations in a separate XML file.
- Generate a concrete user interface resulting from a transformation of the pattern.

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