Problems in web development

- Loose coupling of languages
- No static checking available
- Boilerplate code
- Low expressivity
- Repetition

WebDSL solutions

- Integrated domain-specific sub-languages
- Language concepts for: data models, user interface, access control, workflow
- Generates Java or Python application
- Order of magnitude reduction in application code

Workflow

- High-level business process descriptions
- Specifies actors (who), user interface (view), actions (do)

Generated from workflow

- Task lists
- Status pages
- Navigation

Access Control

- Rules for: page access, template access, ...
- Separate concern
- Links to inaccessible pages are hidden
- Rules can be combined into policies

User Interface

- Data presentation
- Markup for structuring pages
- Data entry
- Forms with type inferred input elements
- Action definitions with procedural code
- Actions invoked by form button or link
- Control of navigation

Data Manipulation

- Forms with type inferred input elements
- Action definitions with procedural code
- Actions invoked by form button or link
- Control of navigation

Data Models

- Simple and domain-specific value types (::)
- Composite (<>) and referential (->) associations
- Derived CRUD pages

References

L.C.L. Kats, M. Bravenboer, and E. Visser. Mining Source and Bytecode, a Case for Compilation by Normalization. OOPSLA (2008)

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http://www.websdsl.org