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Functional programming in the industry ???

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April 24th, 2010

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Why?

Joosten, S.M.M., The Use of Functional Programming in Software Development, Ph.D. Thesis, University of Twente, The Netherlands, ISBN 90 90027297, April 1989.

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Agenda

1. What has Ordina done with Haskell?
2. An example: the Ampersand project

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Work in Practice: Ordina's Haskell track record

- 2002, ING Postbank, DISKovery project. Enrichment of performance test data.
- 2003, Rabo, PoC CPL: Generation of a performance model from Rational Rose models.
- 2004, Demonstrator voor compliant services voor het B-dossier project (Telematica Instituut)
- 2004: architecture checker for Archimate.
- 2005-2007, Ontwerp van de Bedrijfs-, Informatie-, en Technische architectuur van de IND (architecture prize LAC 2009), prov. Overijssel, Delta-Lloyd, Rabobank.

Observations

- Functional Programmers are rare within Ordina
- People know many different languages to be functional (e.g. APL, Scala)
- There have been no requests for Haskell programmers at Ordina's allocation desk
- Several tools have been built in FP:
  - Ampersand
  - Protos
  - Model analyzers
- Way of thinking…

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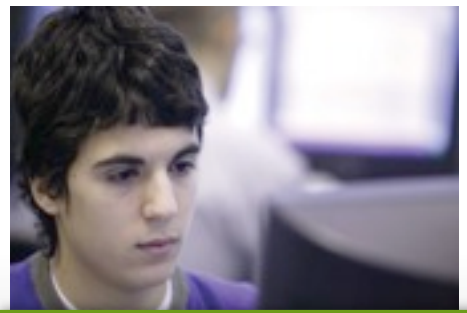
- Conclusion: Haskell has little relevance in practice!

Ongoing work in Practice: The Ampersand project

- Research at the Open University: theory, tools, training
- Deep impact on Ordina's Public sector
- Low visibility for functional programming

Ampersand

Overheid 3.0



Research: OUNL

System Integrator: Ordina

Client: Immigration

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Why Ampersand?

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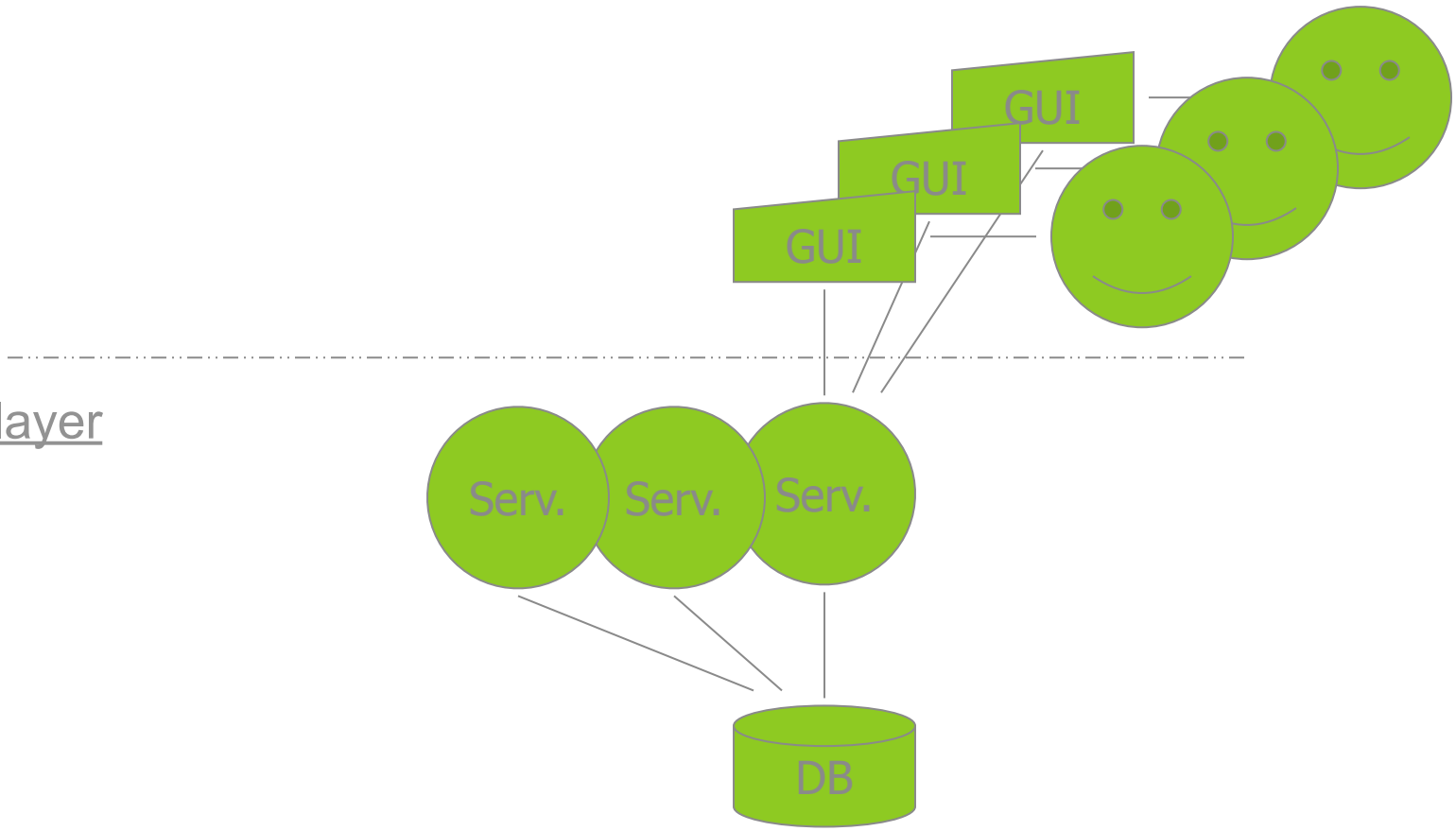
- Functional Requirements must be formal:
  Ampersand teaches a formalism to business analists
- Functional Requirements must be sufficient:
  Ampersand generates a functional specification (PDF);
  Ampersand generates a functional prototype (MySQL+PHP)
- Functional Requirements must be implemented:
  Ampersand guarantees that an implementation satisfies its functional requirements

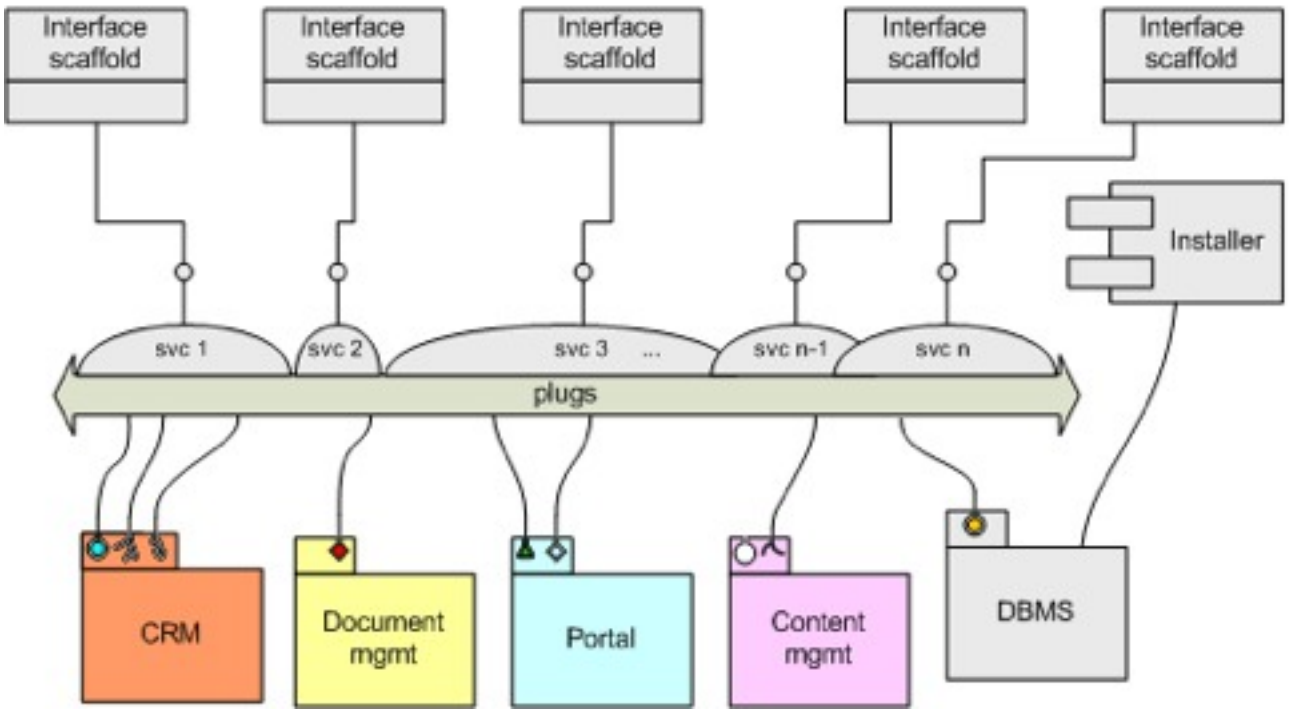
So, Ampersand aims at solving the software crisis…

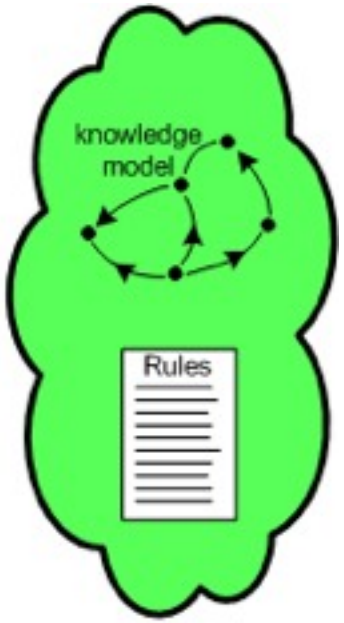
Demonstration structure

- front
- Service layer



Architecture of IS





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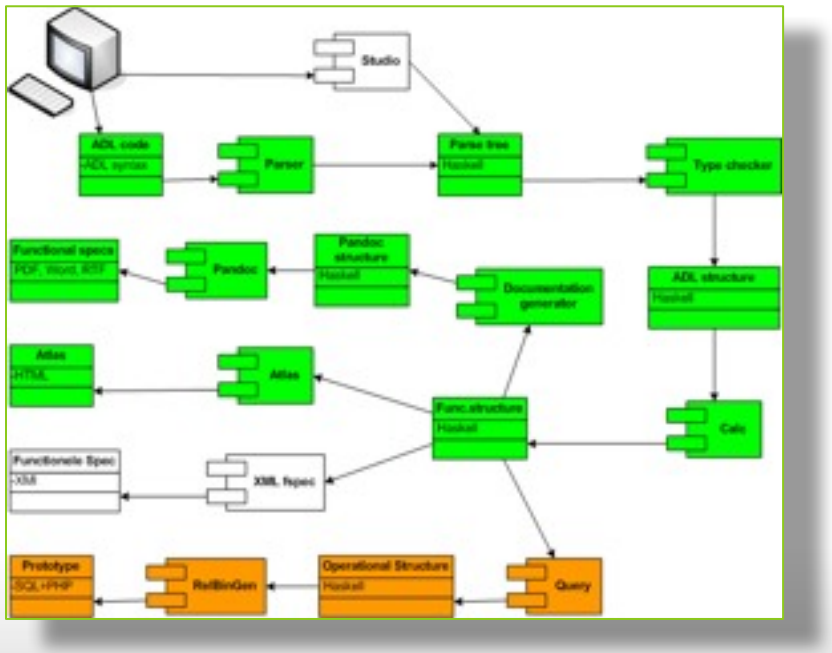
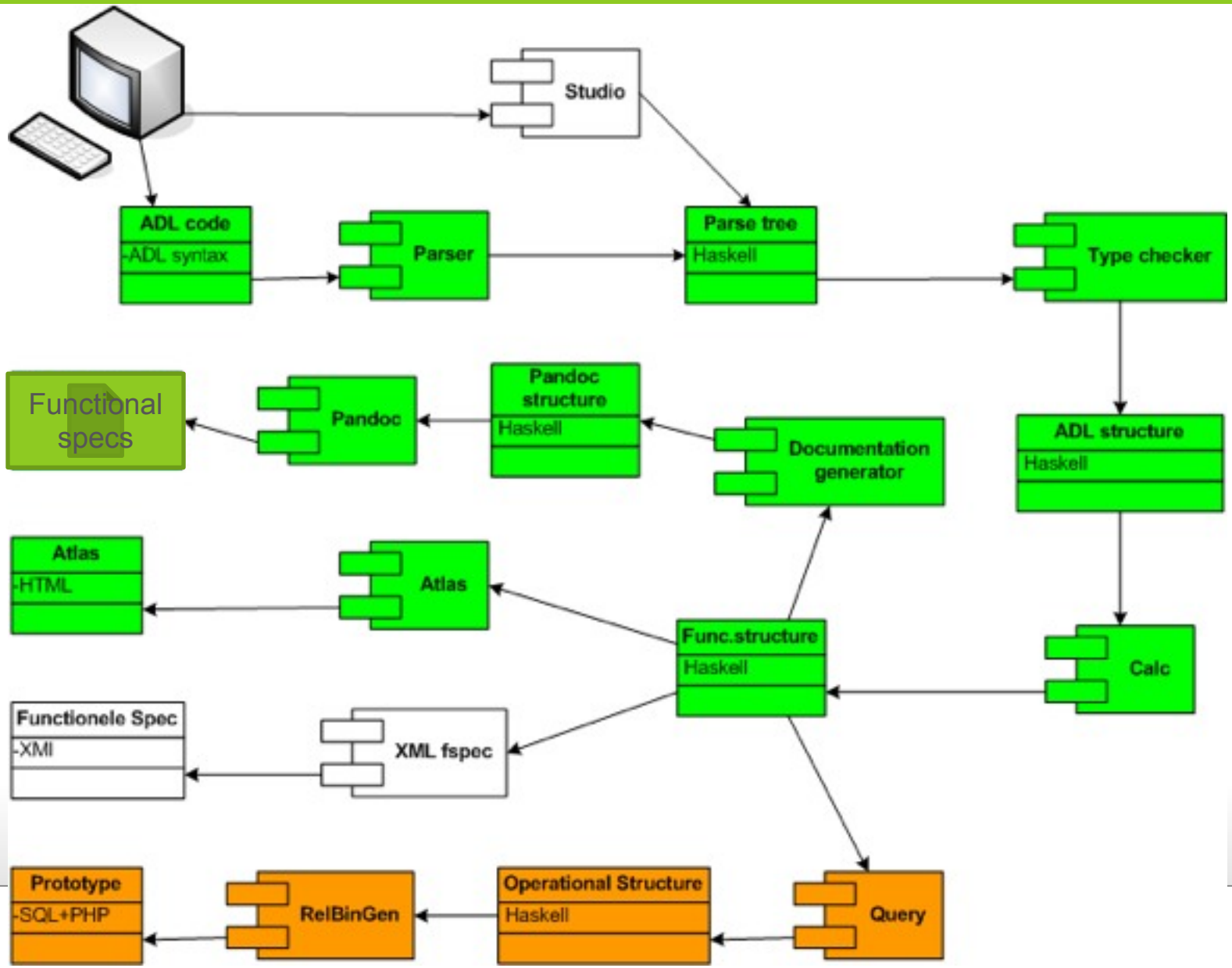
Functional Programming in Ampersand

- Ampersand's tool set written in Haskell
- Parser written with Swierstra's combinators
- Document generation with PanDoc
- Type checker with AG
- Graphics with GraphViz



Architecture of the ADLcompiler



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