A Modelling Language for Rich Internet Applications

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Abstract

This thesis presents the Internet Application Modelling Language (IAML), a modelling language to support the model-driven development of Rich Internet Applications (RIAs). This definition includes a visual syntax to support the graphical development of IAML model instances, and the underlying metamodel satisfies the metamodelling and viewpoint architectures of the Model Driven Architecture.

While there are many existing modelling languages for web applications, none of these languages were found to be expressive enough to describe fundamental RIA concepts such as client-side events and user interaction. This thesis therefore presents IAML as a new language that reuses existing standards where appropriate. IAML is supported by a proof-of-concept CASE tool within the Eclipse framework, and released under an open source license to encourage industry use. This reference implementation successfully integrates a number of different model-driven technologies to demonstrate the expressiveness of the modelling language.

The IAML metamodel supports many features not found in other web application modelling languages, such as Event-Condition-Action rules; the expression of reusable patterns through Wires; and a metamodel core based on first-order logic. Through the implementation of the RIA benchmarking application *Ticket 2.0*, the concepts behind the design of IAML have been shown to simplify the development of real-world RIAs when compared to conventional web application frameworks.

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