

Usability Evaluation of DSLs

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Research interests:
Software Language
Engineering, Usability
Engineering, Experimental
Software Engineering,
Software Quality

Objectives

Domain-Specific Languages (DSLs) are programming languages that provide solutions to essential problems from a given domain (e.g. Physics Computing, Financial Domain, Healthcare, Control Systems, Gaming). They are often used by domain experts, rather than programmers. DSLs are regarded as communication interfaces between humans and computers. As such, DSLs should be evaluated as human-computer languages (i.e. User Interfaces) with respect to their Usability, so that they can be improved and be efficient in bridging the gap between the Problem and the Solution domains.

My goal is to contribute with a framework for supporting DSLs systematic usability evaluation, throughout the whole DSLs life cycle.

Methodology

- Introduce DSLs' Usability evaluation during DSLs' life-cycle iterations
- Design an effective experimental evaluation of DSLs that will provide qualitative and quantitative feedback for DSLs developers
- Produce user-centered design of DSL
- Guide the Software Language Engineer in order to build a DSL with high level of Quality in Use
- Foresee the Quality of a DSL while in an iterative evolution step
- Merge the Software Language development process with the Usability Engineering process

Expected Results

Conceptual framework that supports the development process of DSLs concerning Usability evaluation - devise languages and tools that can effectively and automatically support the measurement of the identified Usability factors

- Foster higher productivity of DSL end users
- Increased quality in use and quality of experience while using a DSL
- Traceability of usability recommendations and design changes
- Reduced cost of evaluation, development and support
- Increased reliability of usability evaluation results

