How to design high-quality domain-specific languages?

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Discussed topics

- What is a language?
  - [A] Semantics + Syntax (Abstract and Concrete)
  - Tools, Workbench?
- Criteria for high-quality languages

Properties

- Gokhan's 20 characteristics a DSL must have.
- Quantifiable
  - Non-ambiguous. But in some domains, ambiguity is needed.
- Non-quantifiable
  - Maintainability
  - Evolvability
  - Usability
    - How to asses usability of a language? Asking people?

What is a high-quality language?

- Several possible answers:
  - A language whose concrete syntax is developed by domain specialists.
  - A language that respects a given set of properties.
  - A language that constrains user expression (for security).
  - A declarative language, strongly typed, with no side-effects.
  - A high-quality language is a set of languages describing different aspects of a system/domain
  - A language that is formally defined.
  - A language that drives (programmers) to produce high-quality programs.

Alternative answer

- A possible answer could be the way the language was designed:
  - Several iterations.
  - Collaboration of all stakeholders.

About the concrete syntax

- Tooling support for checking concrete syntax
- Graphical or textual?