FHIR Shorthand

Owning Work Group: FHIR Infrastructure
Committee Approval Date:
Publishing Lead:
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Contributing or Reviewing Work Groups:
one in addition to FHIR-I

FHIR Development Project Insight ID: 1569
Scope of coverage:
FHIR Shorthand is a specification of a domain-specific language (DSL) to allow Implementation Guide authors to define conformance resources (e.g., StructureDefinitions, ValueSets, etc.) and general instances (e.g., examples). This project will define the syntax of FHIR Shorthand, and develop a reference implementation of an importer/exporter/compiler ("Sushi") that creates FHIR content ready for the FHIR IG Publisher or other consumers of Conformance Resources. Project will also explore importing StructureDefinitions to FSH.

Content location:
Published IG: http://build.fhir.org/ig/HL7/fhir-shorthand/
Reference implementation: https://github.com/FHIR/sushi
IG Repository: https://github.com/HL7/fhir-shorthand

Proposed IG realm and code:
Universal realm (uv)
uv/fhir-shorthand

Maintenance Plan:
MITRE intends to provide ongoing support of this implementation guide with FHIR community inputs as open source project.

Short Description:
FHIR Shorthand (FSH) is a domain-specific language (DSL) for defining the content of FHIR Implementation Guides (IG). It is simple and compact, with tools to produce Health Level Seven (HL7®) Fast Healthcare Interoperability Resources (FHIR®) profiles, extensions and implementation guides (IG). Because it is written in text statements, FHIR Shorthand encourages distributed, team-based development using conventional source code control tools such as Github.

Long Description:
Using FHIR in a meaningful way requires an implementation guide (IG) that provides technical details (profiles, extensions, value sets, examples, etc.) as well as prose, graphics and workflows that specify how FHIR should be applied. Many FHIR developers find creating IGs difficult and slow.

FHIR Shorthand (FSH) addresses the FHIR community’s need for a fast, scalable method for creation and maintenance of Implementation Guides. Using FSH, an IG is developed by making short, understandable text statements that closely reflect the author’s intent. With two quick commands, those statements can be transformed into a full IG.

Because it is text-based, FHIR Shorthand brings a degree of editing agility not found in graphical tools. FSH is ideal for distributed development under source code control, providing meaningful version-to-version differentials, support for merging and conflict resolution, and nimble refactoring. These features allow FSH to scale in ways that other approaches cannot. To top it off, you can use any text editor to create Shorthand.

FHIR Shorthand software is free and open source. The language specification is on track to become part of the FHIR standard, helping to future-proof the approach.

Involved parties:
This IG has been developed primarily by MITRE Corporation, with inputs from many members of the FHIR community.

Expected implementations:
There are several groups building IGs with FHIR Shorthand, and considering (or actually) incorporating FHIR Shorthand into their projects and products (Lantana, Firely, Google).

Content sources:
Requirements were drawn from many years of experience in profiling, creating DSLs (including CQL), and a prior implementation of a profiling language (the Clinical Information Modeling and Profiling Language, CIMPL).

Example Scenarios:

Scenario 1:
Action: IG Creator translates profiles from an existing IG into FHIR Shorthand, to create a more maintainable form of the IG.
Precondition: Existing IG to translate.
Success Criteria: Existing IG reproduced with source expressed as FHIR Shorthand.
Bonus point: Put FSH files until source code control. Profiles generated by FSH validated using FHIR validator.

Scenario 2:
Action: IG Creator creates profiles and examples for a new IG.
Precondition: Clinical information model to express as FHIR profiles.
Success Criteria: Draft version of IG produced.
Bonus point: Create examples for each profile.

IG Relationships:
Not dependent on other IGs.

Timelines:
Submit for STU ballot for May 2020 Ballot Cycle

FMG Notes