



Variables and their Value Domains

Wednesday, 29 November 2023 13:55 (25 minutes)

A value domain is the description of the values a variable is allowed to take. The idea originated with the ISO/IEC 11179 series of standards. DDI-CDI makes use of them explicitly, and DDI-L uses the idea as well. However, metadata reuse depends on which metadata are assigned to a variable, and which are assigned to a value domain. We address this here.

We can illustrate the problem with an example: Suppose we have a variable for household income measured in 2023 USD. The applicable values are non-negative scaled numbers to 2 decimal places, such as 75,000.00 (*in the American format*). *Applying the variable to households in developed countries might mean the maximum allowable* (ten million dollars), but the same variable used in a developing country might only need a maximum of \$100,000.00 (one hundred thousand dollars). However, the value domain ought to be the same: non-negative monetary amount in USD.

In both cases, the constraints makes the two applications different. Now the question arises as to where we specify the constraints, the maxima? Placing them on either the variable or the value domain reduces reuse and interoperability, as they make the variable or the value domain different in each usage.

Mostly, it is the value domain where people tend to place the constraints, It makes sense from a strict perspective. The constraints affect the allowable values. We argue here that the more relevant choice for the constraints is on the variable since it is the application of the variable where the constraints are needed. Luckily, the variable cascade defined in both DDI-CDI and DDI-L can account for the differences and increase reuse and interoperability.

We describe an application of these ideas from work done at the Office of Data Governance at the US Department of Labor.

Primary author: GILLMAN, Dan (Data Unchained, LLC)

Presenter: GILLMAN, Dan (Data Unchained, LLC)

Session Classification: Variable Cascade

Track Classification: Proposed Topics of the Conference: Interoperability, Reusing and Sharing Metadata