

Object-Oriented Analysis using Informal Language

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Abstract

In this paper we study one aspect of the analysis of information systems, viz., how to obtain a (formal) model using informal formulations. We give a general framework for this modeling process, and also discuss the cognitive identity of domain experts. The starting point of the modeling process is a set of formulations (intended as an informal specification). Initially, these formulations need not form a complete and consistent specification. In an iterative process, alternating deduction and induction, an informal specification and corresponding formal model are to be derived. Rather than aiming at one (large) model, certain partial models are derived that collectively describe the application domain in a complete and consistent fashion. This process involves both domain expert and system analyst, communicating primarily in natural language.

This communication is supported by a system analyzing informal formulations to obtain fragments of the (formal) model, and paraphrasing fragments of this model to obtain feedback. This feedback mechanism is intended to support the validation of the model, regarding both structural aspects and constraints on populations.

Keywords: object-oriented analysis, natural language, information grammar, verbalization, validation, cognitive identity, PSM, Elisa-D

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