University of Innsbruck – Institute of Computer Science
Semantic Technology Institute
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PS Introduction to Modeling

Assignment 5

Exercise 1 (E/R Modeling Barker/IDEF1X – 5 points)

a) In the lecture, the Barker notation has been introduced.

- Figure 1 shows a simple E/R model in Barker notation. Explain the Barker notation itself and all used symbols from the figure (e.g. dot, asterisk, attributes, lines, etc.).
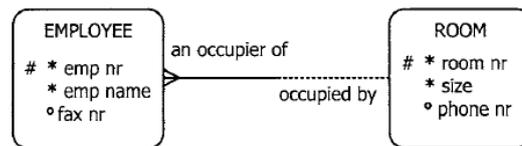

Abbildung 1: Barker example

- Explain how (a) composite identification, (b) simple exclusion and (c) exclusive-or constraints are modeled with Barker. All have been presented in the lecture.

b) In the lecture, the IDEF1X notation has been mentioned. (You can find more information about IDEF1X on the web for example in [1] or [2])

- Figure 2 shows a simple E/R model in IDEF1X notation. Explain the notation itself and all used symbols from the figure.

- Explain the five phases of model developing in one or two short sentences.

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[1] http://en.wikipedia.org/wiki/IDEF1X
[2] http://www.tandfonline.com/doi/pdf/10.1080/095119297131039

Abbildung 2: IDEF1X example

Exercise 2 (E/R Modeling Use-case – 5 points)

Think back to assignment one and the „modeling" you were doing back then. In this exercise take the example you came up with and model it in one of the notations you just learned (e.g. Baker, IDEX1X, IE, ...).

Specifically focus on the following tasks:

- highlight keys (primary, foreign, composite, ...)

- indicate mandatory/optional attributes

- indicate mandatory/optional roles

- add cardinality (at least one 1:n and one m:n relationship should be in your model)

- model constraints (exclusion, mutually exclusive, disjunctively mandatory - at least one)

- use subtyping

To fit all those needs you might have to extend your original model by finding some more concepts, attributes or relationships.

Enter your anticipated points and send your final solution and explanations (txt and pdf files only!) to `anna.fensel@uibk.ac.at` until Wednesday the 20th of January 2016, 16:00.