

TOWARDS A SOFTWARE TOOL DEVELOPMENT FOR DATABASE SCHEMA GENERATION BASED ON BUSINESS RULES

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Data has grown to be one of the most significant assets for governmental organizations, commercial companies, and individuals in recent years. Nowadays, practically all software collects, stores, and processes data to address specific issues in their respective fields, from social networks and dating mobile applications to huge information systems and enterprise management analytical services. Large amounts of data are arranged in databases, which serve as the foundation for practically all contemporary software programs. Databases should be properly built as the most crucial parts of software systems since flaws in requirements elicitation can lead to exponential increases in the cost of addressing problems during testing and maintenance phases [1].

Existing tools for designing database schemas make it possible to significantly simplify the development of databases as the main components of modern software applications. Some tools provide for the construction of database schemas based on the use of object-oriented languages, and also provide the ability to export source code for rapid database development.

Usually, such tools have a less convenient user interface, since they are focused specifically on the development of ready-made database schemas as software components. They provide the ability to define entities and relationships based on textual descriptions using a specific domain-specific language (Fig. 1). The ability to export ready-made source code for creating databases allows you to implement

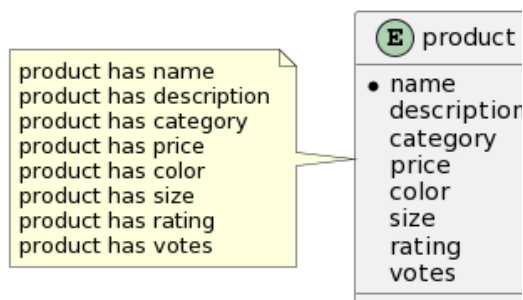


Fig. 1. – An entity based on business

databases quickly, compared to writing the corresponding commands yourself, using only graphical data models. Such tools still require some training and user skills, so software tools aimed at building graphical data models are still more accessible to business analysts or developers who do not have experience or skills in building relational data models and implementing databases.

Therefore, there is a need to combine the simplicity and availability of tools for building graphical data models with the capabilities of tools that allow you to build database schemas based on text commands and export their source code for fast database creation. It is proposed to implement the generation of database schemas based on business rules written in natural language.

References:

1. Kopp A., Orlovskyi D., Orekhov S. An Approach and Software Prototype for Translation of Natural Language Business Rules into Database Structure. *CEUR Workshop Proceedings (CEUR-WS.org)*. 2021. Vol. 2870. P. 1274–1291.