Extending a Hypergraph-based Data Modeling Framework for Enterprise Architecture Usage

András Béleczki, Bálint Molnár, Zoltán Vincellér

Information Systems Department, Eötvös Loránd University of Budapest, Pázmány Péter sétány 1/C, 1117 Budapest, Hungary

{bearaai, molnarba, vzoli}@inf.elte.hu

Since the domain of data-modeling is expanding from day to day, the need for a proper designing framework is important and urgent. To achieve this framework we proposed to use the hypergraph theorem[1]; selected and compared many applications to represent them properly[2]. Since the chosen solution is storing hypergraphs in common graph-database, it generates many other problems to solve: adjusting and reimplementing hypergraph algorithms to the specific representation, optimizing data storage, etc.. [3] The usage of the framework originated from many domains: information system architecture development and design, business process modeling, enterprise architecture, ontologies, semantics and many more. This means an enormous amount of modeling schemas, disciplines, diagrams, etc.. To prepare the framework to handle everything our future research need we have to extend our core with the proper methods and algorithms. The two main topics of this paper are the following: identifying the graph algorithms and finding a possible way to implement them for our hypergraph representation.

References

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[3] Béleczki, A., Molnár, B., Sarkadi-Nagy, B.: Storing hypergraph-based data models in non-hypergraph data storage. In Modern Approaches for Intelligent Information and Database Systems (pp. 51-59). Springer, Cham. 2018