

DECLARATIVE DOMAIN-SPECIFIC LANGUAGE FOR DATA MINING

Andrey Boldak ¹, Kostiantyn Yefremov²

¹ National Technical University of Ukraine “Kyiv Polytechnic Institute”, ICSU World Data Center for Geoinformatics and Sustainable Development, 37 Peremogy ave, Kyiv, email: boldak.andrey@gmail.com

² National Technical University of Ukraine “Kyiv Polytechnic Institute”, ICSU World Data Center for Geoinformatics and Sustainable Development, 37 Peremogy ave, Kyiv, email: k.yefremov@wdc.org.ua

Work contains review of declarative domain-specific language for data mining, using of which doesn't demand knowledge of tool programming languages for development of data processing scenarios and that really reduces labor inputs in analytical reports development.

According to flow based programming paradigm, data mining scenario is defined as network of processes (constants, sources, transformations, reports), exchanging data across predefined connections by message passing. Details such as abstract syntax, declarative and imperative forms, and programming tools were developed.

Proposed language is implemented at ICSU World Data Center for Geoinformatics and Sustainable Development hosted by NTUU “KPI”. Language has been used to develop scenarios for modeling threats to sustainable development for the regions of Ukraine according to the data of 2011 year.

Keywords: data mining, programming, sustainable development, threats analysis.