AIFdb: Infrastructure for the Argument Web

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Abstract. This paper introduces AIFdb, a database solution for the Argument Web. AIFdb offers an array of web service interfaces allowing a wide range of software to interact with the same argument data.

Keywords. Argumentation, database, Argument Interchange Format, argument web

1. Introduction

The Argument Web [3] is a vision for a large-scale Web of inter-connected arguments posted by individuals on the World Wide Web in a structured manner. As such it is necessary to provide a service which not only allows for the storage and retrieval of this structured argument data, but is compatible with the widest possible range of currently existing argumentation software and provides a stable and flexible platform around which future software can be developed.

AIFdb[1] is a database implementation of the Argument Interchange Format (AIF), allowing for the storage and retrieval of AIF compliant argument structures. AIFdb offers a wide range of web service interfaces for interacting with stored argument data, as well as offering its own search and argument visualisation features all consistent with the formal ontology of the AIF.

2. Interacting with AIFdb

At the lowest level, AIFdb's web services allow for the insertion and querying of the basic components of an AIF argument such as nodes, edges and schemes. These components are represented by tables in the database as seen in Figure 1.

Building upon these lower level interactions, AIFdb also offers a 'middle layer' which groups these simple queries to allow more complex interactions to be easily performed. For example it is possible, with a single query, to determine all of the statements made by a particular person in support of a given I-Node.

At the highest level of interaction, AIFdb supports modules handling the import and export of numerous formats such as SVG, DOT, RDF-XML and the formats of the Carneades [1], Rationale [6] and Araucaria [4] tools[2].

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[1] http://www.arg.dundee.ac.uk/AIFdb/
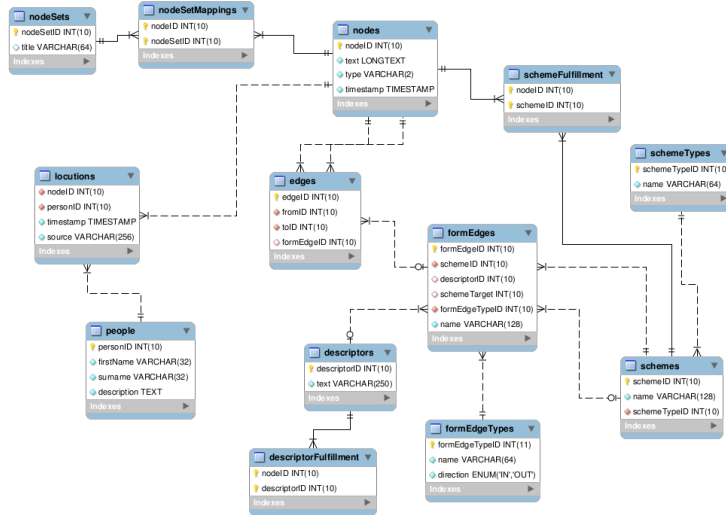[2] http://www.arg.dundee.ac.uk/AIFdb_upload/

Figure 1. AIFdb Diagram

3. Conclusion

By providing a database solution for the Argument Web, AIFdb makes it possible to, for example, manipulate some of the 2,000 or so existing argument web resources in Carneades, and visualize the result in Rationale; it is possible to 'argublog' [5] in response to arguments analysed in Araucaria, and compute the acceptability of the result using ASPIC+ [2]. The barriers between domains of argumentation are being broken down as effectively as the barrier between systems and theories of argumentation, and as these barriers come down, a foundation is laid for realising the vision of an open, integrated Argument Web.

References

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