LexGrid Editor: Terminology Authoring for the Lexical Grid

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Abstract

The Lexical Grid (LexGrid) enables the integration of terminologies and ontologies through a common model, services, and tools. The LexGrid Editor is a prototype terminology authoring and maintenance tool designed for this environment. This demonstration will present an overview of the Editor’s functional capabilities in relation to technologies offered by the LexGrid platform. We will also demonstrate additional proof of concept work, such as integration of technology provided by the Protégé Ontology Management System.

Description

The Lexical Grid (LexGrid) was developed to enable the integration of terminologies, ontologies and coding and classification schemes across multiple disciplines. LexGrid was designed from the bottom up to be a distributed and federated collection of heterogeneous terminological resources that are collectively available for query, traversal and update using a uniform, standards-based set of tools. The end goal of the Lexical Grid is to make any terminological resource available to the application(s) and people that need it in a real-time, distributed fashion. The intellectual products of LexGrid include a common model for terminology representation which draws from communities engaged in description logic ontologies, widely-used clinical terminologies, and the heritage of terminology services to provide an abstraction capable of supporting a wide variety of disparate terminologies. This model in turn simplifies and clarifies the design and functionality of related tools and facilitates data interoperability.

The LexGrid Editor is a terminology management tool that supports the ability to author, view, validate, maintain and extend terminologies defined to the LexGrid terminology model. In addition, it provides the ability to view and search networked terminologies available ‘on the grid’. Searches can be directed against a single terminology or multiple terminologies, including support for user-defined groups.

The Editor adheres to an open source philosophy in software development and distribution. Key infrastructure is provided by the Eclipse Foundation¹, an open community of tool providers. Eclipse provides a universal domain-neutral open source framework for developing and distributing applications. It provides the Editor with a rich graphic interface layer and supporting components. The Editor also utilizes a representation of the LexGrid model generated for Java via the Eclipse Modeling Framework (EMF). EMF also provides runtime support for linkage between persistence, object-level, and UI layers.

This demonstration will touch on both development and runtime aspects of the Editor, including:

- EMF code and user interface generation
- Eclipse infrastructure (e.g. file and resource management, team repository integration, online update mechanisms, imbedded help system)
- Edit capabilities (e.g. context-sensitive actions, drag/drop, undo/redo, validation, finding, sorting, filtering, and tracking edit history)
- Extensions to visualize concept relations
- Online search capabilities
- Preliminary work to integrate the Protégé Ontology Management System

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Example LexGrid Editor Session

Deployment

The LexGrid Editor is currently provided as a prototype and freely available at the Mayo Division of Biomedical Informatics site².

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References

¹www.eclipse.org
²informatics.mayo.edu/LexGrid/index.php?page=lge

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