

DRUGLE - A semantic search engine for pharmacology and medical drug information

Welcome to the project site for DRUGLE. DRUGLE is a semantic search engine specialized for pharmacology and medical drug information. DRUGLE is a project sponsored by Karolinska Institutet and managed by Seibo Software Studios.

Intended audience and users

DRUGLE is meant to be a search engine for authoritative information on pharmacology and medical drugs. As such it is intended to function both as a general point of reference as well as a decision support system.

The intended audience can be categorized in the following main user groups:

- Healthcare personnel, ie doctors, nurses etc.
- Patients and relatives of patients.
- Researchers and academics.
- Medical students.
- Healthcare information & process managers.
- Healthcare systems such as EHR and drug prescription systems.
- The general user.

Furthermore, DRUGLE can easily be integrated with other applications and systems. Typical examples are EHR and drug prescription systems.

By continuously building and adapting a semantic knowledge base and by use of specialized search profiles DRUGLE will be able to serve the varying needs of different user groups in a consistent manner and via a standard interface.

Key Features

Notable key features of DRUGLE are:

- Can hold large amounts of pharmacological and medical drug data.
- Data gathered and continuously updated from a number of authoritative sources on the web.
- Gathered data is analyzed and structured so that the search resolution is higher than the individual documents themselves.
- Easy to add and build indexes for new data sources.
- Support for boolean and probabilistic search models.
- Search algorithms is both model and terminology based.
- Terminology solution supports synonyms and lexical proximity.
- Profile and context based search features.
- Adaptive semantic knowledge base.
- Pharmacological and medical drug information model.
- Programmatic REST API enabling web applications to easily integrate with DRUGLE.
- Plugin architecture for extending web scraping features for new sources.

Notable key features of the DRUGLE web application are:

- AJAX based web application.
- Search for information in different languages.
- Profile based search.

Design and implementation

DRUGLE is being designed and implemented in accordance with the following general principles:

- Simple is beautiful.
- Classic Unix programming and design philosophy.
- AJAX and REST-based architectural principles.
- Google User Experience principles.

One of the key principles underlying the design and implementation of DRUGLE is that data storage (persistence) and information retrieval are distinct yet complementary aspects of data management.

The following technologies are used: Python, Apache, Linux, Xapian, XHTML/CSS/Javascript, JSON, HTTP-based REST web services.

The following CM/QA tools and technologies are used: Subversion, SCons, Trac and the Debian package management system.

The beta installation

The beta installation at <http://demo.drugle.info> currently indexes the following information:

- SPC:s from European Medicines Agency, EU.
- SPC:s from National Health Service, UK.
- SPC:s from Asociación Española de Medicamentos y Productos Sanitarios, Spain.
- SPC:s from Läkemedelsverket, Sweden.
- List of recommended drugs from the Wise List maintained by Drug Therapeutic Committees and the Department of Drug Management and Informatics in Stockholm County Council, Sweden.
- Interactions from the SFINX database maintained by Drug Therapeutic Committees and the Department of Drug Management and Informatics in Stockholm County Council, Sweden.

Note: SPC stands for Summary of Product Characteristics and is the formal specification required for registering drugs with national drug registration authorities.

Future plans and development

Watch this space!

KI and Seibo Software Studio are looking for partners who are interested in developing and/or contributing to DRUGLE as well as funding management and maintenance of the DRUGLE Beta installation.

Contact

For more information please contact one of:

- Lars L Gustafsson, KI
- Daniel Rodríguez, Seibo Software Studios

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