

GERNEDIT: A GRAPHICAL TOOL FOR GERMANET DEVELOPMENT

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GERNEDIT

The main purpose of GernEiT (short for: GermaNet Editing Tool) is to support lexicographers in accessing, modifying, and extending the GermaNet data in an easy and adaptive way and to aid in the navigation through the GermaNet word class hierarchies, in order to find the appropriate place in the hierarchy for new synsets and lexical units. The editor acts as an interface to a relational database, where all GermaNet data is stored.

GERMANET

GermaNet is a lexical-semantic wordnet that is modeled after the Princeton WordNet® for English. It covers the three word categories of adjectives, nouns, and verbs and partitions the lexical space into a set of concepts that are interlinked by semantic relations. A semantic concept is modeled by a synset. A synset is a set of words (called *lexical units*) where all the words are taken to have (almost) the same meaning. Thus a synset is a set-representation of the semantic relation of synonymy, which means that it consists of a list of lexical units.

There are two types of semantic relations in GermaNet: *conceptual* and *lexical relations*. Conceptual relations hold between two semantic concepts, i.e. synsets. They include relations such as hyperonymy, part-whole relations, entailment, or causation. GermaNet is hierarchically structured in terms of the hyperonymy relation. Lexical relations hold between two individual lexical units. Antonymy, a pair of opposites, is an example of a lexical relation.

List all Lexical Units

Lex Unit Id	Orth Form	Synset Id	Synonyms	Frames	Examples
84970	auswerten	60447	[auswerten]	NN,AN,NN,AN	"Wir werden unsere Bemühungen auf weitere Zielgruppen auswe..."
76139	abhalten	53955	[abhalten]	NN,AN,PP	"Wir versuchen, die Jugendlichen vom Rauchen abzuhalten."
84392	abspalten	60021	[abspalten]	NN,AN	"Wir müssen diese Eiweißmoleküle abspalten."
75212	aufwarten	53276	[aufwarten]	NN,AN	"Wichtige Politiker warteten dem König auf."
82681	aufleuchten	58722	[aufscheinen, aufleuchten]	NN	"Wenn das Warnlicht aufleuchtet, sollten Sie die Maschine sofort..."
74744	ausrasten	52956	[ausrasten, durchdrehen, ...]	NN	"Wegen der Nachricht rastete er aus."
76593	abtöten	54272	[deaktivisieren, abtöten]	NN,AN	"Vor der Wurzelbehandlung musste die Zahnärztin den Nerv abt..."
84660	ausrotten	60223	[ausrotten]	NN,AN	"Viele Tierarten sind durch Jagd und Industrie schon ausgerottet..."
74652	auseinanderdriften	52885	[auseinanderdriften]	NN	"Unsere Standpunkte driften zusehends auseinander."
76264	auswerten	54043	[auswerten]	NN,AN	"Sie werteten die neueste Marktanalyse aus."
75667	aufreten	53610	[auftreten, agieren]	NN,AN,PP,NN,AN,PP	"Sie tritt selbstbewusst und entschieden auf." "Sie tritt selbstbew..."
75876	aufreten	53772	[auftreten]	NN,PP,PP	"Sie tritt in der Öffentlichkeit sicher auf."
75415	abtreten	53424	[abtreten]	NN,PP	"Sie trat als Schauspielerin von der Bühne ab."
75515	abstreiten	53495	[ablehnen, abstreiten]	NN,AZ,NN,DS,NN,AN	"Sie stritt seine Anschuldigungen ab." "Sie stritt seine Anschuldigu..."
85540	aufsplitten	60882	[splitten, aufsplitten]	NN,AN,PP,NN,AN,PP	"Sie splitteten das Vermögen in vier gleich große Teile auf." "Sie..."
81894	antreten	58152	[antreten]	NN,BU	"Sie sind pünktlich zum Dienst angetreten."
79224	ausschelten	56189	[ausschimpfen, auszsanke...]	NN,AN	"Sie schalt ihren Sohn aus, nachdem er heimlich abgehauen war."
84227	ausschalten	59890	[abschalten, ausschalten...]	NN,AN,NN,AN	"Sie schaltete das Staubsauger ab." "Er schaltete das Radio aus."
84221	anschalten	59887	[ansstellen, anschalten, ein...]	NN,AN	"Sie schaltete das Licht an."
78914	abraten	55945	[abraten]	NN,AZ,NN,AN,PP	"Sie riet ihm ab, nochmals dort anzurufen." "Sie riet ihm ab, noch..."
77956	anarbeiten	55249	[anarbeiten]	NN,PP	"Sie muss gegen die neuen Richtlinien anarbeiten."
77111	abschalten	54617	[ausspannen, ausruhen, a...]	NN	"Sie kann gut abschalten."
78039	auseinanderhalten	55311	[differenzieren, auseinan...]	NN,AN	"Sie kann die Zwillingsschwester nicht auseinanderhalten."
80008	aufheften	56784	[aufheften]	NN,AN,PP	"Sie heftete das Tuch auf einer einfachen Plastikoberfläche auf."
75029	aufarbeiten	53141	[aufarbeiten]	NN,AN	"Sie hat viel Stoff aufzuarbeiten."
79575	anraten	56554	[anempfehlen, anraten]	NN,AN,AN	"Sie hatte ihm mehr Einfühlungsvermögen angeraten."
83768	abhärten	59546	[abhärten]	NN,AN,PP,NN,AN,PP	"Sie hat ihren Körper durch gesunde Ernährung abgehärtet." "Sie..."
78140	abwarten	55388	[abwarten]	NN,AN	"Sie hat ihren Gedulde für ihn abgewartet."

GernEiT - Main Panel

The main panel displays search results for the term 'Nuss'. It includes a search bar, search history, and a table of synsets. The selected synset (39652) is highlighted, and its lexical units are shown in a table below. A hyperonymy-hyponymy graph is displayed, showing the relationship between 'Nuss' and its various types (e.g., Haselnuss, Walnuss, Erdnuss).

Search

Matching synsets (for a search)

Lexical units of selected synset

Hyperonymy-hyponymy graph of a selected synset

Edit Examples and Frames

This panel allows editing examples and frames for the selected synset. It shows a list of examples with their IDs, text, and frame types. There are buttons to add, delete, and edit examples. Below, there is a section for frames, also with add, delete, and edit buttons.

Create Synset

The 'Create Synset' dialog box allows users to create a new synset. It includes fields for Synset ID, Word Category, Word Class, Paraphrase, and Comment. There are buttons for 'Close Without Saving', 'Reset', and 'Create Synset'.

Create Lexical Unit

The 'Create Lexical Unit' dialog box allows users to create a new lexical unit. It includes fields for LexUnit ID, Orth Form, Orth Var, Old Orth Form, Old Orth Var, and Source. There are checkboxes for Named Entity, Style Marking, and Artificial. Buttons for 'Close Without Saving', 'Reset', and 'Create LexUnit' are present.

Edit Conceptual Relations

This panel shows a list of all conceptual relations in the database. It includes columns for Type, To/From Synset, and the relation itself. There are buttons to delete or follow a relation. A 'Create Conceptual Relation' dialog is also visible, allowing users to create new relations.

GERNEDIT'S FUNCTIONALITIES

- Editing:** GernEiT provides a graphical user interface, implemented as a Java Swing application, which allows accessing, modifying, and extending the GermaNet data in an easy and adaptive way.
- Navigation:** The editor aids in the navigation through the GermaNet word class hierarchies, so as to find the appropriate place in the hierarchy for new synsets and lexical units.
- Search functionalities:** Several ways to search GermaNet are possible, e.g. direct searches for words or database IDs or lists with detailed filters of lexical units or synsets.
- Replacement of outdated tools:** GernEiT replaces the traditional GermaNet development based on lexicographer files, which was error prone and time-consuming, by a user-friendly visual tool.
- Internal consistency:** The editor facilitates internal consistency of the GermaNet data such as appropriate linking of lexical units with synsets, connectedness of the synset graph, and automatic closure among relations and their inverse counterparts.
- Versioning:** An editing history makes it possible to list all modifications on the GermaNet data, with the information about who made the change and the state of the item before modification.
- Export:** GernEiT supports various export functionalities, such as XML or LMF (Lexical Markup Framework, cf. Verena Henrich and Erhard Hinrichs: *Standardizing Wordnets in the ISO Standard LMF: Wordnet-LMF for GermaNet*, in Proceedings of the 23rd International Conference on Computational Linguistics (COLING 2010), Beijing, China, 2010).
- Miscellaneous:** It is possible to retrieve up-to-date statistics of GermaNet. Collaborative annotation by several lexicographers working in parallel is supported.

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