

# DEB II – Dictionary Writing Systems Platform

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# Outline

- 1 DEB II Development Platform
  - Introduction
  - Server side
  - Client side
- 2 Current DEB projects
  - DEBDict
  - DEBVisDic
  - PRALED – Prague Lexical Database of Czech
  - Czech Onomastic Dictionary
  - Other possibilities
- 3 Conclusions and Future Directions
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- platform for dictionary writing systems development
  - basically any XML data
- strict client-server architecture
- server
  - server side functionality
  - database backend
- client
  - only simple functionality
  - graphical interfaces
  - web interfaces

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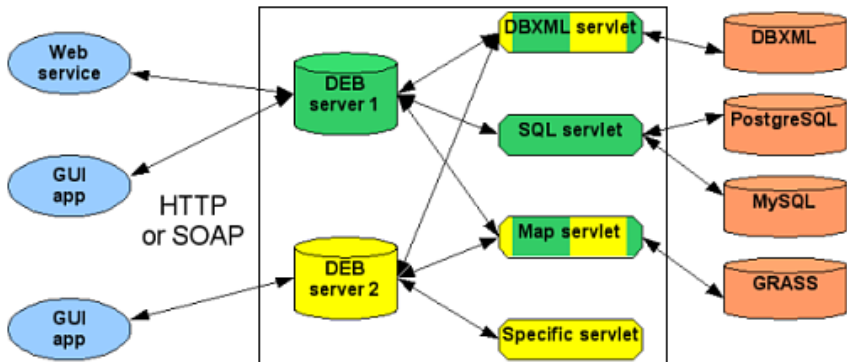
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DEB uses AJAX-like communication

## Server side

- database backend – Berkeley DB XML
  - native XML database
  - supports XPath and XQuery
- implemented in Ruby programming language
  - object-oriented, interpreted
- built from small parts, called *servlets*
  - each servlet provides single service
  - allows a modular composition of all services
- HTTP communication with JSON for data structures

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  - fetching individual documents
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- client applications mostly oriented to the graphical user interfaces (GUI)
- Mozilla platform provides complete tools for software development
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- *XUL* – XML User-interface Language
  - mark-up language for GUI design
- *CSS* – Cascading Style Sheets
  - graphic appearance of the application
- *JavaScript*
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# Assets of DEB Platform

- data stored on the server
- functionality mostly on the server, lightweight clients
- good team cooperation
- authentication and authorization tools provided by the server
- different interfaces over the same data structure, reusable by many clients
- homogeneity of the data structure and presentation

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# DEBDict

Simple DEB client demonstrating several basic functions of the system

- available as installable package or web-service
- multilingual user interface (English, Czech, others can be easily added)
- queries to several XML dictionaries (of different underlying structure) with the result passed through an XSLT transformation
- connection to Czech morphological analyzer
- connection to an external website (Google, Answers.com)
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The screenshot shows a web browser window titled "DEB Dictionary Browser". On the left is a sidebar with a "Choose dictionary" section containing a list of options: "dictionary - SSČ", "dictionary - SSJČ", "foreign words dictionary", "dictionary - SSČ" (highlighted), "thesaurus", "dict. - SČFI verbal", "dict. - SČFI nonverbal", "Diderot", "all dictionaries", "morph. analyzer ajka", "google", "Answers.com", "Wikipedia", and "map of Czech Republic". The main content area displays the entry for the word "pes" in red. The entry includes the plural form "psa m", a list of numbered definitions, and grammatical information such as "psíce -e ž fena(syno)", "psík -a", "psíček -čka", and "pejsek -ska m (mn. 1. -ci, -kově, 6. -cích) zdrob. expr.". At the bottom of the main area, it says "Slovník spisovné češtiny". The browser's status bar at the bottom shows "Count: 9", a "news" link, and the version "DEBDict 1.5.0".

DEB Dictionary Browser

Choose dictionary

dictionary - SSČ

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thesaurus

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map of Czech Republic

**pes**

, psa m

1. *šelma ochočená k hlídání, lovu ap.*, hlídač, lovecký, ovčácký pes, pozor, zlý pes!, pustit psa z řetězu,

2. *samec psovité šelmy*, liščí pes, je to pes, nebo fenka?,

3. *expr. bezohledný, krutý člověk*, být (na někoho) pes, život je pes, [x] ani pes po něm neštěkne, *expr. je zapomenut*; , být na někoho jako pes, *zlý*; , být poslušný, věrný jako pes, honit, zastřelit někoho jako psa, *bez citu*; , každý pes jiná ves, (*pořek.*) (*o nesourodých věcech*); , (ani) pes by od něho kůrku nevzal, *expr. je v opovržení*; , pes, který štěká, nekouše, (*pořek.*); , práce ap. pod psa, *hanl. velmi špatná*; , vypadat jako spráskaný pes, *být schliplý n. unavený*; , (hledat, kde je) zakopaný pes, *hlavní potíž, překážka*; , (venku je,) že by ani psa nevyhnal, *velmi špatně počastí*; ,

**psíce** -e ž fena(syno):

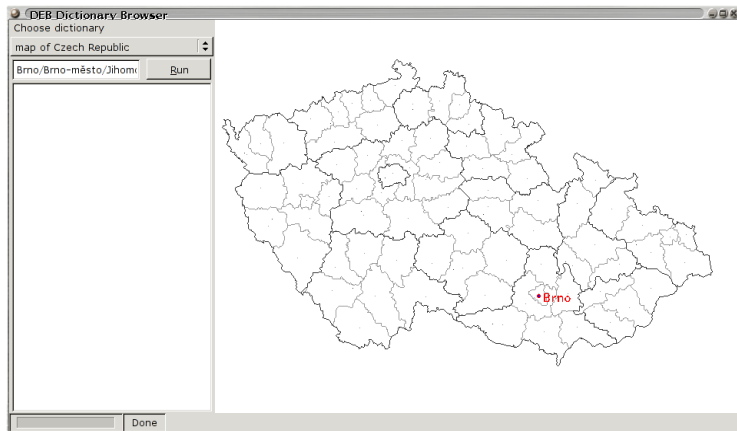
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Slovník spisovné češtiny

Count: 9 [news](#) DEBDict 1.5.0



The screenshot shows a web browser window titled "DEB Dictionary Browser". The address bar contains "google" and the search input field contains "Discworld". The search results are displayed under the heading "Web" and show "Results 1 - 10 of about 2,420,000 for Discworld. (0.20 seconds)".

The first result is "The L-Space Web - A Terry Pratchett / Discworld Web Site". The description states: "Information on Terry Pratchett and his work. An exceptional resource." The URL is [www.lspace.org/](http://www.lspace.org/) - 8k - 12 Oct 2005 - Cached - Similar pages. Sub-links include "Books & Writings - Art & Graphics" and "The Carpet People - Index page - Fandom". A note says "More results from www.lspace.org >".

The second result is "TerryPratchettBooks.com". The description says: "Look for Terry Pratchett's latest Discworld novel, THUDI in stores this ... Welcome to the Discworld. It started out as a parody of all the fantasy that was ...". The URL is [www.terrypratchettbooks.com/](http://www.terrypratchettbooks.com/) - 14k - Cached - Similar pages.

The third result is "TerryPratchettBooks.com" with a sub-link "Discworld Travel Guide. Lost? Confused? Need some help navigating the morass? Dip into this handy travel guide and discover the world of Terry Pratchett ...". The URL is [www.terrypratchettbooks.com/discworld/](http://www.terrypratchettbooks.com/discworld/) - 13k - Cached - Similar pages.

The fourth result is "Discworld MUD". The description says: "Discworld MUD is a multiplayer, text-based online game based on the Discworld books as written by Terry Pratchett. On Discworld you will meet many of the ...". The URL is [discworld.imaginary.com:5678/](http://discworld.imaginary.com:5678/) - 9k - 12 Oct 2005 - Cached - Similar pages.

The fifth result is "Discworld Monthly - The free newsletter about Terry Pratchett and ...". The description says: "This page has moved to a new server and is now located at: <http://www.discworldmonthly.co.uk/>. You should be re-directed in a few seconds, if not please".

On the right side of the browser window, there is a "Sponsored Links" section with three entries: "Discworld Merchandise" (Clarecraft Figures, Books, Diaries, Audio Books, Thud and more! [www.bonsaitrading.com](http://www.bonsaitrading.com)), "Paul Kidby Discworld Art" (For all your Hogswatch needs. New! Guild of Assassins Bag. [www.PaulKidby.com](http://www.PaulKidby.com)), and "Discworld Forums" (Terry Pratchett fans' message boards, games and live chat [www.terrypratchettbooks.org/](http://www.terrypratchettbooks.org/)).

# DEBVisDic

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- contains all the main features present in VisDic
- client-server architecture
- new windowed interface
- connection to other resources (e.g. morphological analyzer, dictionaries)
- connection of other existing applications to the DEB wordnet server (e.g. VisualBrowser)

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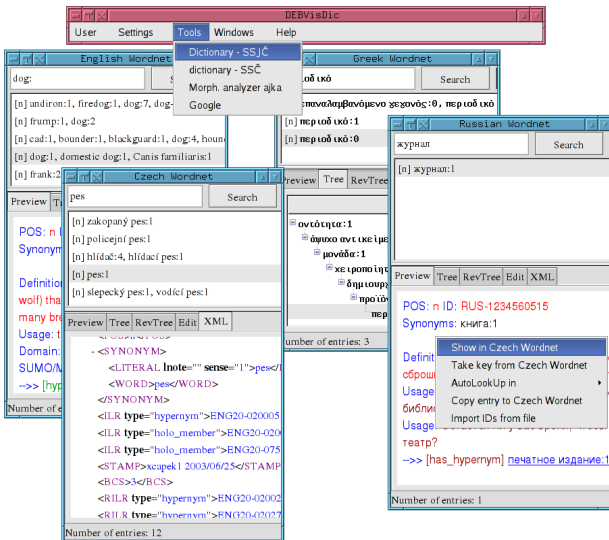


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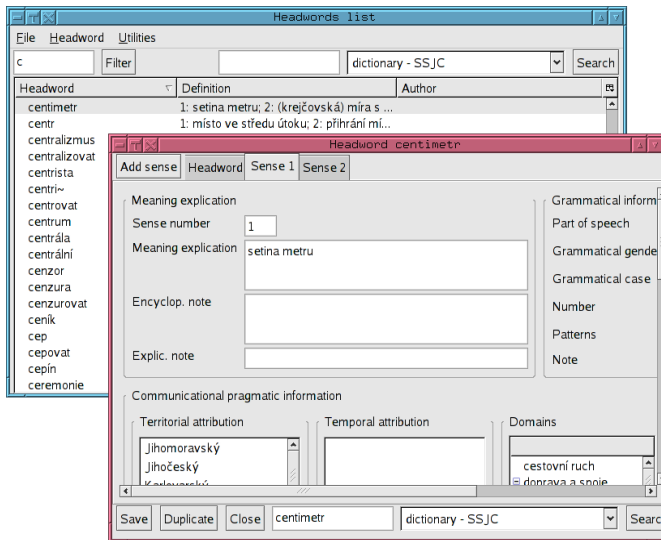


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- preparation of new comprehensive and exhaustive database of lexicographic information for Czech language – Czech lexical database, CLD

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# Czech Onomastic Dictionary

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The screenshot displays the DEB II software interface, showing a dictionary entry for the word "DOUBRAVA". The main window is titled "Vypis karet" and contains a table of entries. A "Seznam hesel" (List of words) window is open on the left, and a "Hledani hesel" (Search words) window is open in the bottom left. A map window shows the location of "Kubřetov". A detailed entry window for "DOUBRAVA" is open in the foreground, showing various fields and options.

Heslové slovo	Standardizovaná podoba	Zápis	kód pj	Pád	Rod	Druh	Číslo	Tvar	Poloha	Vlastn.	Stáří	M...	Objekty	P/N	Lot.
DOUBRAVA	Doubrava	Doubrava	aa	1	f	sa	sg.	část ...	4			čub...	vlak...	p	Hvozdec
DOUBRAVA	Doubrava	Doubrava	aa	1	f	oj	sg.	čtverec svah				vlak...	vlak...	p	Oprostovice
DOUBRAVA	Doubrava	Doubrava	aa	1	f	sa	sg.	čtverec svah					vlak...	p	Hradec nad ...
DOUBRAVA	Doubrava	Doubravy	aap	1	f	pj	pl.						vlak...	p	Slušovice
DOUBRAVA	Doubravův zleb	Doubravův zleb	ab	1	m	ap	sg.						vlak...	v	Jančovice
DOUBRAVA	Doubrava přední	Doubrava přední	aa	1	f	sa	sg.						vlak...	p	Střelice
DOUBRAVA	Doubrava přední	Doubrava přední	aa	1	f	sa	sg.	trojúh... tovina lame...					vlak...	p	Bílá u Jevička
DOUBRAVA	Doubrava přední	Doubrava přední	aa	1	f	pj	sg.	svah lame...					vlak...	p	Kubřetov
DOUBRAVA	Doubrava přední	Doubrava přední	aa	1	f	sa	sg.	trojúh... mímý...					vlak...	p	Zástřizly
DOUBRAVA	Doubrava přední	Doubrava přední	aa	1	f	sa	sg.	trojúh... mímý...					vlak...	p	Lišov
DOUBRAVA	Doubrava přední	Doubrava přední	aa	1	f	sa	sg.	trojúh... mímý...					vlak...	p	Naloučany
DOUBRAVA	Doubrava přední	Doubrava přední	aa	1	f	sa	sg.	trojúh... mímý...					vlak...	p	Starý Hroze...
DOUBRAVA	Doubrava přední	Doubrava přední	aa	1	f	sa	sg.	trojúh... mímý...					vlak...	p	Úšov
DOUBRAVA	Doubrava přední	Doubrava přední	aa	1	f	sa	sg.	trojúh... mímý...					vlak...	v	Slarovice
DOUBRAVA	Doubrava přední	Doubrava přední	aa	1	f	sa	sg.	trojúh... mímý...					vlak...	p	Zástřizly

**Seznam hesel**

Utility	Kartičky	Hesla
DOUBRAVA	001	
DĚDNA	001	
DĚL	004	
DĚLEC	001	
DĚVIS	001	
DĚVHÝ	006	
DO	009	
DOBÍŠ	001	
DOLEK	002	
DOLINA	002	
DOLNÁ	017	
DOUBÍ	002	
DOUBRAVA	175	
DOUBRAVA 2	001	
DRUHÝ	006	
DUB	001	
DUBÍČEK	001	
DUBOVÝ	001	
DŮL	006	
DVŮR	004	
DŽUNGLE	001	

**Hledání hesel**

Výraz: D\*

Cancel OK

**Karta 1129019107-129**

Heslové slovo: DOUBRAVA  
 vedlejší poj. vztah  
 Standardizovaná podoba: \*Doubrava  
 Zápis: \*Dóbrava  
 Kody PJ: aa (1a)

Mluviccké kategorie  
 Slovní druh: subst. propr. P. 1  
 Mluviccký rod: f  
 Mluviccký pád: 1.  
 Číslo: sg.  
 Skupina (řazení): 1.

Lokalizace  
 Kunštát/Blanšev/Blahoměřský  
 Zobrazit na mapě  
 Poznámka: Toubof

Objekt  
 Tvar: -  
 Poloha: -  
 Vlastnost: -  
 Stáří užití: -  
 Motivace: -

Lidový výklad  
 Poznámka

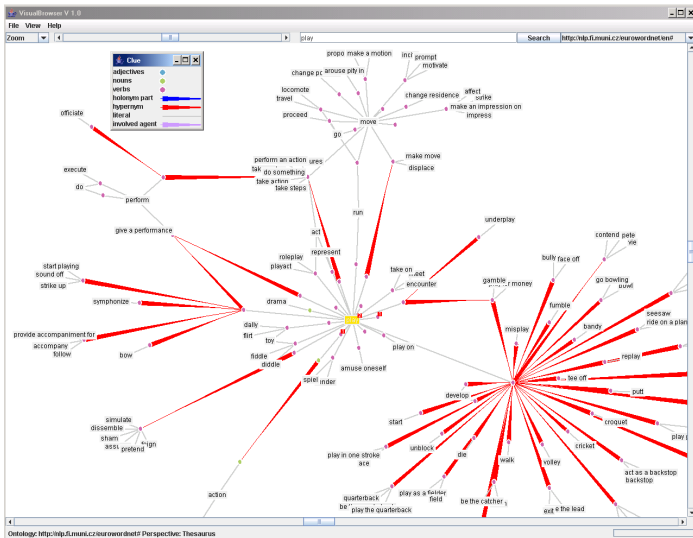
SM: VM

# VisualBrowser

- Java application that can visualize the data in RDF scheme, not a DEB client
- connection to DEB server and visualization of WordNet data

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## Other possibilities

Client doesn't have to be implemented in XUL. Any application/service using HTTP or SOAP protocol can be a client.

# Outline

- 1 DEB II Development Platform
  - Introduction
  - Server side
  - Client side
- 2 Current DEB projects
  - DEBDict
  - DEBVisDic
  - PRALED – Prague Lexical Database of Czech
  - Czech Onomastic Dictionary
  - Other possibilities
- 3 Conclusions and Future Directions
  - Conclusions
  - Future Directions

# Conclusions and Future Directions

- about 90% of server part completed
- several client applications under development are used in running projects
- high modularity and configurability
- versatile base for implementation of individual and powerful dictionary writing tools

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## Future of DEB II

- optimize server part
- add new servlets for linguistic resources (corpora, word sketches, analyzers, ...)
- prepare server installation packages
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