New (and Revived) Features in LKB-FOS

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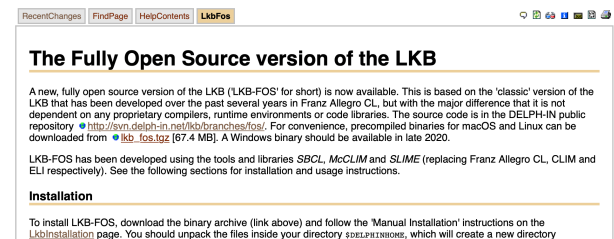
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Basic Information

LKB-FOS is based on the 'Classic' and 'LOGON' versions of the LKB, but is built using only open source compilers and libraries

Porting the LKB to an open source foundation required changes – so why not make improvements at the same time?

Webpage `http://moin.delph-in.net/LkbFos` contains information on installation, features, hints and tips, troubleshooting

Source code at: `http://svn.delph-in.net/lkb/branches/fos/`

Precompiled binaries for Linux and macOS available via the LkbFos webpage

README in the binary distribution contains a change log and brief descriptions of new features

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System Configuration

Three instantiations of the LKB: 'Classic LKB', 'LOGON LKB' and LKB-FOS

In script files and Lisp code, use read-time conditionals #+ and #− to distinguish between them

Classic LKB	`#-:tsdb`
LOGON LKB	`#+(and :tsdb (not :lkb-fos))`
LKB-FOS	`#+:lkb-fos`
Linux	`#+:linux`
macOS	`#+:darwin`
Windows	`#-:unix`

LKB-FOS does not automatically start up the [incr tsdb()] podium; the user must execute `(tsdb:tsdb :podium)`

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A few parameters and functions have changed since publication of the LKB User Manual (in Copestake 2002 *Implementing Typed Feature Structure Grammars*)

8.3.4 Packing `*chart-packing-p*`, `*gen-packing-p*` are true by default (c.f. p.199)

9.1.1 System behaviour As well as `*maximum-number-of-edges*`, `*...-tasks*`: there is `*unpack-edge-allowance*`

9.1.2 Display parameters As well as `*parse-tree-font-size*`, `*fs-type-font-size*`, `*type-tree-font-size*`, `*dialog-font-size*`:
there are `*comparison-dependencies-font-size*`, `*comparison-discriminant-font-size*`, `*comparison-tree-font-size*`, `*summary-tree-font-size*`;
removed `*fs-title-font-size*`;
can also reset `clim:*default-text-style*`

9.2.3 Generator parameters added `*gen-start-symbol*`; use `*gen-first-only-p*` instead of `*gen-maximal-number-of-realizations*`

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LOGON LKB and LKB-FOS both contain (all or part of) [incr tsdb()], which pro-
vides: `tsdb::read-model`, `*unpacking-scoring-hook*`, `tsdb:tsdb` – see the LKB-
FOS update presentation for details

NB Selective unpacking can be used without a trained maxent model to get n
random parses / realisations, e.g.

```
(setq *first-only-p* 20)
(setq *unpacking-scoring-hook* (constantly 0.0))
```

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LKB Feature Matrix

Feature	Classic LKB	LOGON LKB	LKB-FOS
LKB GUI	✓	✓	✓
emacs interface	✓	✓	✓
LUI interface / LSP server	✓	✓	✓
[incr tsdb()] podium	✗	✓	✓
maxent models	✗	✓	✓
native Linux version	✓	✓	✓
native macOS version	✗	✗	✓
open source compiler and libraries	✗	✗	✓
PVM	✗	✓	✗
WWW demo	✗	✓	✗
SVMs, language models	✗	✓	✗
external MT system interface	✗	✓	✗
responsive GUI	✗	✗	✓
good multilingual support	✗	✗	✓
double-clickable app on macOS	✗	✗	✓
fast grammar load, parse, generate	✗	✗	✓

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Gaps, Shortcomings, Risks

Unhappy bits of code

- patches to McCLIM (mostly work-arounds for missing functionality)

- redefinitions of parts of Swank (the Lisp side of emacs interface)

Non-standard look-and-feel on macOS (text fields, menu and window appearance)

[incr tsdb()] currently only on Linux, since depends on C programs:

- `tsdb`

- `swish++` (mostly used to package up a Tcl/Tk interpreter)

Concern about the impact of Linux Wayland on X.org

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Development Plans

2020 Summit: unified grammar configuration, chart mapping, grandparenting in selective unpacking, Windows version

And previously

- 2019: LkbWishlist, updated version of classic LKB

- 2018: port improved type hierarchy display and computation of GLB types back to classic LKB

- 2017: mouse click/select in editable text fields, macOS Aqua appearance

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