

From Toolbox Database to L^AT_EX Dictionary

Purpose

The purpose of this project is to allow field lexicographers who use Toolbox to store language data to more easily and quickly disseminate their results.

Objective

Export data from Toolbox to L^AT_EX with few intermediate steps

Context

The 7000-word dictionary of the Dagaare language (Niger-Congo, Gur) used in this project the result of a collaboration between language scholars in Ghana and linguists and computer scientists in the US over the course of five years.

Object-Oriented Approach

The benefits of using an object-oriented approach to representing the data in an intermediate stage include the following:

- ▶ Convenient encapsulation of the data
- ▶ Ability to calculate statistics across the database:
 - How many entries are missing certain verb paradigms?
 - What is the average number of senses per lexical item?
- ▶ Customize what Toolbox fields are ignored, such as notes and entry creation date

Key Results

This tool allows one to quickly and easily export a Toolbox dictionary as a PDF. Additionally:

- ▶ Making style modifications to every entry is simplified
- ▶ Users can quickly recreate a dictionary after adding to the database

Program

The program contains two parts:

- Python Script to translate Toolbox fields into L^AT_EX commands
- L^AT_EX Styling sheet to define custom L^AT_EX commands

The following code snippet is an example of one of the custom L^AT_EX commands (for the \lx field marker in Toolbox):

```
\newcommand\LX[1] {\stepcounter{lx} \item[\textbf{#1}]}
```

The Python script executes the following code:

```
file = open("dagaare4.db")
outputfile = open("texConvert.tex", 'w')
text = file.read()
entries = parseTB(text)

for entry in entries:
    outputfile.write(entry.toTex() + '\n')
```

The flowchart below demonstrates how Toolbox, the Python script, and L^AT_EX work together to create a formatted dictionary. An example of a formatted entry is also found below.

di [dì] v. (1) to eat, to consume • *Bibiiri sen ka ba maŋ di bondirii kye gaa sakuuri.* (2) to burn, to blaze • *Vũũ di la a tuu zaa.* The whole shrub has been burnt down by fire. (3) to erode, to make sore • *A bie noore die la ka ba sage na di bonzaa.* The child has a sore mouth and refuses to eat anything. (4) to overcome, to win (5) to assume a throne (6) to judge • *Ba di la ba zɔɔre sereɛ na baare.* They have finished judging that case of fighting. **diee, dire, dire, diribe, diraa, diribe**
di dansee to give witness
di dapaaloŋ to show elegance
di demmo to converse
di dɔɔloŋ to show bravery
di dɔgeɛ to suffer
di kannyiri to be patient
di naŋ to be scarce
di naaloŋ to gain wealth or authority

