$GeoT_EX$ - $Georgian Language in <math>T_EX$

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Abstract

1 Installation

For package installation TEX distribution must be installed. This can be Mik-TeX or TeXLive Windows OS and TeXLive for Linux/Unix and MacOSX systems. It is not necessary, but it is better to have local TEX directory. For Linux/Unix systems you can use \$HOME/texmf See your TEX distribution documentation for more detailes.

1.1 Using MikTeX

- Install MikTeX http://miktex.org.
- Since April 2015 MikTex includes packages: "georgian-babel" and "georgian". Install them Using MikTex package manager.

1.2 Using TexLive

- Create local T_EX directory.
- Download GeoTeX http://tex.tsu.ge and install it in local TEX

1.3 Automatic hyphenation

Automatic hyphenation works. hyph-utf8 is already included in TexLive. For MikTex download hyph-utf8 and install it in localtemf tree. Copy 'languages.ini' file to MikTex's config directory. Do update formats from MikTex's settings manager ('User' and 'Admin' modes). After this system must know about Georgian hyphenation.

2 The First Steps

After package installation user can write documents in Georgian. For this can be used any plain text editor, but there are LATEX suitable Integrated Developing Environment (IDE) Editors, such as Texmaker www.xm1math.net/texmaker, TexStudio Texmaker http://texstudio.sourceforge.net, TeXnicCenter http://www.texniccenter.org, WinEdt Texmaker http://www.winedt.com.

Note, that Georgian input text must be in utf-8 encoding.

There are three basic classes in LaTeX: Article, Report, book. Minimal document has a following form:

```
\documentclass[a4paper]{article}
\usepackage[T1,T2A,T8K,T8M]{fontenc} %use English,
%Russian, Georgian fonts
\usepackage[utf8]{inputenc} %Text Encoding
\usepackage[english,russian,georgian]{babel} %Document's
%language is Georgian
\begin{document}
Document text
\end{document}
```

Because of Georgian script don't fit in one encoding, two encodings T8M and T8K-Asomtavruli-Mkhedruli and Khucuri-Mkhedruli are introduced 1 . If we turn on **amsmath** package, We can have following text: $\bar{\delta}$, $\mathring{\delta}\eta^{\delta}$.

The babel package knows about Georgian and the most therms are translated.

¹see . kaencodings.pdf for detailes

babel loads T8K, and then T8M encoding definition files. This means, that main encoding of the document will be T8M (Asomtavruli-Mkhedruli). If user needs to have basic encoding T8K (Nusxkhuri-Mkhedruli), than in document's preamble must have

```
\usepackage[english,georgian]{babel}
\usepackage[T8M,T8K]{fontenc}
```

In such document text can be in Nuskhuri-Mkhedruli script without any additional command and for Asomtavruli script user needs:

```
\mrglovani
მაგალითად
{\mrglovani ასომთავრული ტექსტი ՇსQԺႧՇԴԺႳႪႨ }
```

which gives: ጜሁ<mark></mark><mark>ው</mark>ልውጜጉሁ<mark></mark>Οъነ

If document's encoding is T8M, than before Nuskha-Khucuri script we need:

{\khucuri ხუცური ტექსტი *ըսվпијин ըդփևըդ*}

Which gives:
ապրակար բոլերը

This is necessary, because Nuskhuri and Asomtavruli are defined in different encodings.

3 Text indexing

TEX uses makeidx and it works for Georgian scripts, but output file is in TEX's internal representation(in therms of macro commands) not in utf-8 and hard to read. For UNICODE texts is the best suited xindy package and works for Georgian scripts, but it is not available for MikTeX distribution. But we can use index and idxlayout packages to have nice output. Add in the preamble:

```
\usepackage{index}
\usepackage[columns=3,totoc=true]{idxlayout}
\newcommand{\Index}[1]{\index{#1}#1}
\makeindex
\renewindex{default}{idx}{ind}{\usepackage[idxlayout]}
```

In this way we can index words in the document on following way Index{bo&y38}. To add index page in the document one can use \printindex} in place of desired output of index page. But this is not enough. After indexing document do:

```
makeindex.exe "filename".idx
```

filename.idx is created after Build command User can also pass the style file (for example. latex.ist) and after this we need to rebuild document again.

4 Nomenclature (Definition of therms and symbols)

Add in the preamble:

\usepackage{nomencl}
\makenomenclature
\renewcommand\nomname{აღნიშვნები}

After file compilation do

makeindex <filename>.nlo -s nomencl.ist -o <filename>.nls

and rebuild file again. Of course there need to be \printnomenclature in the document, where you need nomenclature to be printed.

5 Fonts

T8M and T8K encoded fonts are based on: DejaVu fonts http://dejavu-fonts.org and other avialable Georgian free fonts and can be distributed freely.

6 License Information

This package may be distributed and/or modified under the conditions of the LaTeX Project Public License, either version 1.3c of this license or (at your option) any later version.

7 Additional information

For source of this document and other questions you might have to use Georgian in LATEX pleas visit GeoTEX site http://tex.tsu.ge