Odt2braille Developer's Guide

for version 0.0.1, 7 May 2010

by Bert Frees

Table of Contents

Introduction

Read the user's guide here.

1 Hacking

System Requirements

In order to hack odt2braille, you need the following software:

OpenOffice.org

The latest version of the OpenOffice.org office suite can be downloaded here.

OpenOffice.org Software Development Kit

The OpenOffice.org SDK is an add-on for OpenOffice.org. It provides the necessary tools and documentation for programming the OpenOffice.org APIs and creating own extensions. The latest version of OpenOffice.org SDK can be downloaded here. Make sure you install OpenOffice.org first. The version of OpenOffice.org SDK should be equal or lower than the version of OpenOffice.org.

NetBeans

Odt2braille was developed in NetBeans, an integrated development environment. The latest version of NetBeans can be downloaded here. Make sure the Java SE pack is included.

OpenOffice.org API Plugin for NetBeans

To install the OOo API Plugin for NetBeans, launch NetBeans, go to [*Tools* > *Plugins*], then select *OpenOffice.org API Plugin* in *Available Plugins* and click on *Install*. Now relaunch NetBeans and configure the plugin in [*Tools* > *Options* > *Miscellaneous* > *OOo API Plugin*] by selecting the appropriate OpenOffice.org installation and OpenOffice.org SDK folder.

@TODO: NetBeans with OpenOffice.org API plugin may be replaced by Eclipse with OOEclipse plugin.

Odt2braille Source Code

@TODO The source code is available on Sourceforge and can be downloaded directly into NetBeans as follows: => Team - SVN - Checkout => ...

The source code can also be downloaded without NetBeans: => svn checkout http://... *path/to/odt2braille/folder/*

Build

@TODO Build projects with NetBeans: => Open "Projects" window, than right click a project and choose menu item "Build".

Build projects with Apache ANT: => cd to project directory => ant

Build .oxt with NetBeans: => Open "Projects" window, than right click "Odt2BrailleAddOn" and choose menu item "Create OXT" or "Deploy and Run Extension in OpenOffice.org". => .oxt in Odt2BrailleAddOn/dist

Build .oxt with Apache ANT => cd to Odt2BrailleAddOn directory => ant uno-package => .oxt in Odt2BrailleAddOn/dist

Documentation:

Texinfo: => cd to Odt2BrailleAddOn/doc => texi2dvi –pdf odt2braille-user-doc.texi => makeinfo –html [–no-split] [–no-headers] [–css-include=body.css] –output=odt2braille-user-doc.html odt2braille-user-doc.texi => makeinfo –html [–no-split] [–no-headers] [–css-include=body.css] –output=odt2braille-dev-doc.html odt2braille-dev-doc.texi

Javadoc: => cd to directory containing all projects => javadoc [-private] [-author] [-version] [-breakiterator] -d Odt2BrailleAddOn\doc\javadoc -subpackages be.docarch:org_pef_text -sourcepath Odt2BrailleAddOn\src;Odt2Braille\src;DaisyPipeline\src

Downloads:

Apache Subversion: http://subversion.apache.org/ Apache Ant (1.7.1 or higher): http://ant.apache.org/ Javadoc: http://java.sun.com/j2se/javadoc/downloads/index.html#findjavadoc Texinfo: http://www.gnu.org/software/texinfo/

2 Projects

This is an overview of the projects that are created in NetBeans after odt2braille has been succesfully checked out.

Odt2BrailleAddOn

Odt2BrailleAddOn is the OpenOffice.org extension. It makes extensive use of the OpenOffice.org UNO API. It takes care of the graphical user interface (menu's, dialogs, progress bars, etc.) and allows for loading settings from and saving settings to OpenOffice.org or the OpenOffice.org Writer document. For the actual document processing, Odt2BrailleAddOn relies on the Odt2Braille library.

Packages in Odt2BrailleAddOn:

`be.docarch.odt2braille.addon`

Odt2Braille

The Odt2Braille library takes care of the actual document processing. It enables the conversion of a flat xml odt file to a pef (Portable Embosser Format) file. Furthermore, this pef file can be converted to a variety of other generic braille formats, or it can be converted to an embosser-specific braille file (and optionally sent to an embosser device). The braille transcription is powered by liblouisxml, and for the pef processing, Odt2Braille uses the DaisyPipeline library. The Java OpenDocument Library (JODL) is used for creating and cleaning the flat .odt file (see `http://odt2daisy.sourceforge.net/downloads/`).

Packages in Odt2Braille:

`be.docarch.odt2braille`

DaisyPipeline

The DaisyPipeline project contains the `org_pef_text` and `org_pef_text.pef2text` packages. These packages have been adopted from the DAISY Pipeline and have been slightly modified. Their purpose is to convert a PEF 2008-1 document into a plain text braille file (see also the `pef2text` documentation).

Packages in DaisyPipeline:

`org_pef_text` and `org_pef_text.pef2text`

3 Liblouisxml

Liblouisxml is the heart of the braille transcription. It is an open-source library intended to provide complete Braille transcription services for XML documents. Liblouisxml is built on top of liblouis, its translation engine. The translation is driven through text based translation tables which define the translation rules. The formatting of braille is defined in semantic mappings that define how a specific XML input tag is to be rendered in the Braille output. Liblouisxml is embedded in odt2braille as an executable. It can be found in the Odt2BrailleAddOn project under `liblouis/bin`. The translation tables and configuration files are kept under `liblouis/share`.

For more information read the `liblouisxml` and `libouis` manuals.

4 Known Issues, Todo's, Feature Requests

- More flexibility by providing more settings! Create a new tab in the settings dialog for each category of settings. Each language should have its own default settings. E.g.:
  - Left margin, first line indent, lines before, lines after, ... for headings, paragraphs, lists, listitems, tables, footnotes, endnotes, TNs, ...
  - Border lines of tables & textboxes.
  - Headings on new page.
  - Braille page numbers: top or bottom.
  - Print page numbers: top or bottom.
  - Braille & print page numbers on same line.
  - Page numbers on seperate line.
  - Listitem mark for unordered lists.
  - Disable page change indicator.
  - Disable page number to the right of page change indicator.
  - Print page number RANGE instead of single print page number.
  - Volume info and transcription info.
  - Continued suffix.
  - Linefill symbols (table of contents).
  - Special symbols to be included in the special symbols list.
  - Special symbols descriptions.
  - Braille page number format for preliminary pages (e.g. p1,p2, ... or i,ii,iii,iv,... or ?)
  - ...
- Tooltips in dialogs.
- Complete documentation.
- Documentation in Braille.
- Localization
- Support more embossers.
- Only Interpoint55 is tested.
- Keyboard shortcut for braille menu.
- Replace DOM processing with XSL transformation where this is possible. This will result in better performance.
- 8 dot braille.
- When the document is saved as PEF at an existing file location, the file is not overwritten.
- Math
- Tactile graphics.
- Detect which ranges of unicode characters are used in the document and include the appropriate liblouis-tables.

- If the liblouisxml process takes to long (e.g. with Chinese), OpenOffice.org might think the program is not responding.
- The Settings class should be responsible for the correctness of its own members (not responsibility of SettingsDialog).
- OpenOffice.org accessibility for screen readers?
- 'SimBraille' font included in OpenOffice.org distribution?
- OCR plugin for OpenOffice.org?
- Check if the number of cells per line (and the number of lines per page) is sufficient (if too small, this might cause liblouisxml to fail).
- Custom paper size.
- Localization of braille menu.
- Checking of volume lengths: should be dependent on the recto/recto-verso setting.
- When multi-volume feature of liblouisxml is finished: odt2braille code might be simplified.
- UTD: could be used to make a preview of the braille document with print text added for readability/understandability.
- Some liblouisxml bugs (pagination, table of contents, special typeface, ...)
- Auto-update link in Extension Manager (Rss feed)
- ...