

Creating Accessible Documents with LibreOffice Writer

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Liberté 0 / Freedom #0



Liberté 0

<http://liberte0.org/>



Overview

- Accessibility: short introduction
- LibreOffice Writer features
- Accessible authoring
- Export to PDF
- LibreOffice Accessibility Issues

Accessibility: Introduction (1)

- Blind users
 - No pointing device
=> **keyboard access**
 - UI & content rendered as Braille and/or synthetic speech
 - = **sequential** access
- Access depends on text alternatives and other metadata exposed through (**accessibility**)
APIs



Accessibility: Introduction

- Other vision deficiencies:
 - Colour blindness (red-green)
 - Loss of peripheral vision, loss of central vision, blurred vision, ...
 - Persons who need magnification (even x32 or x64)

Normal

The contrast ratio is: 4,28:1

Protanopia

The contrast ratio is: 1,79:1

Accessibility: Introduction

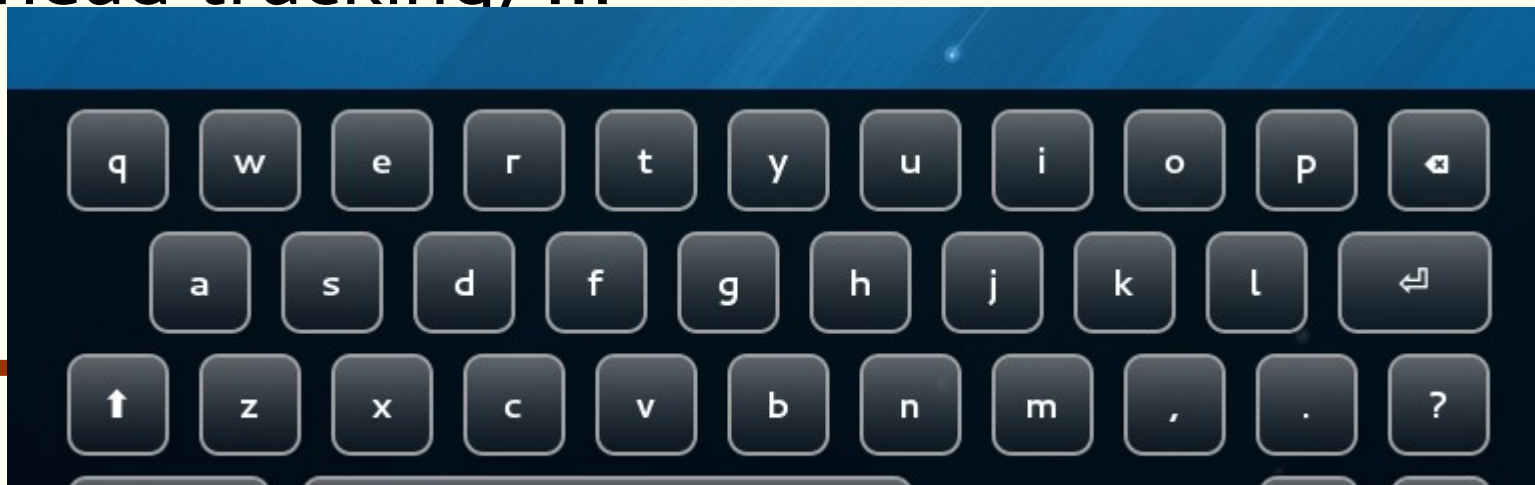
- Hearing-impaired users
 - If congenitally deaf, native language = sign language
- Captioning for video
- Transcripts for audio



American Sign Language family
(Cc-by-2.0, David Fulmer, Wikipedia)

Accessibility: Introduction

- Motor-impaired users
 - Due to muscular dystrophy, MS, ...
 - Use of pointing device may be difficult, even impossible
 - => keyboard access
 - => alternative input devices, e.g. eye tracking, head tracking, ...

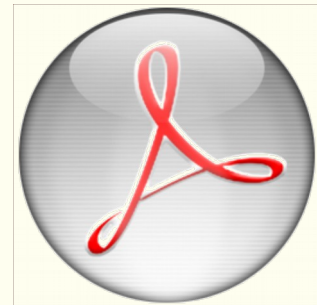
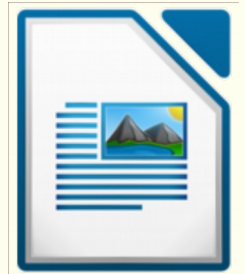


Accessibility: Introduction

- Dyslexia, learning disabilities, cognitive impairments
 - Make text easier to read
 - Use illustrations
 - Fonts for dyslexia, e.g. OpenDyslexic
 - People with dyslexia also use specific software for reading (typically commercial)

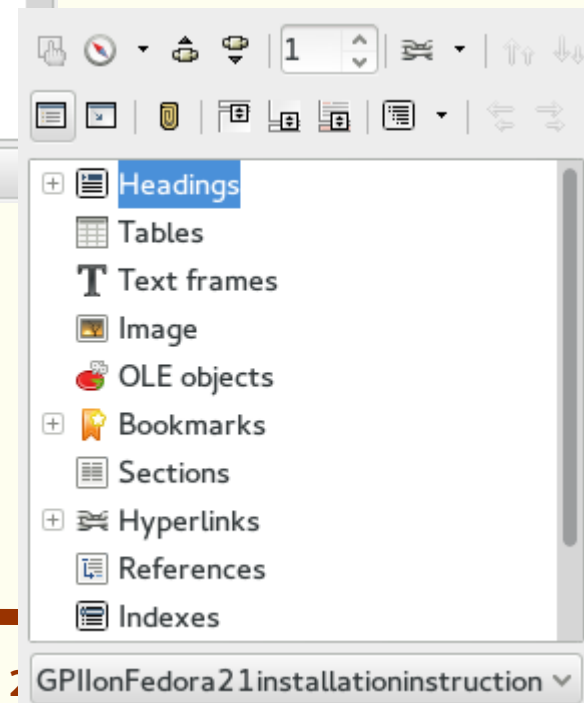
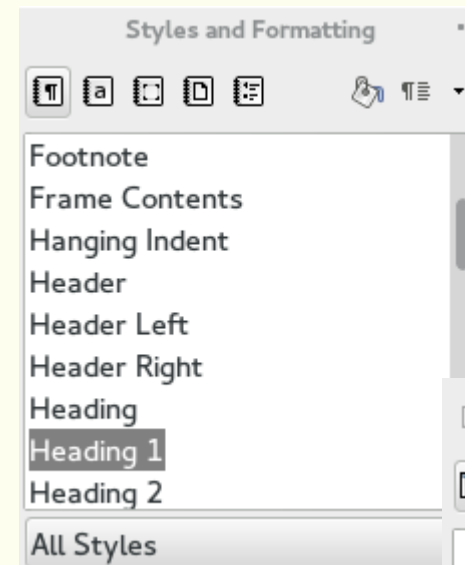
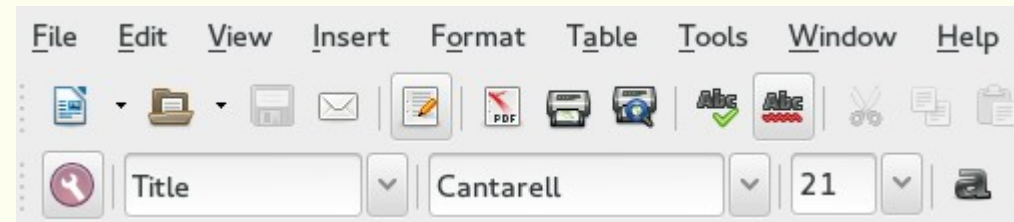
LibreOffice Writer Features: 1

- File formats:
 - OpenDocument Format (ODT)
 - export to/save as PDF, XHTML, DocBook, DocX, ...
 - export to DAISY, Braille
- Export to accessible document requires **accessible source document**



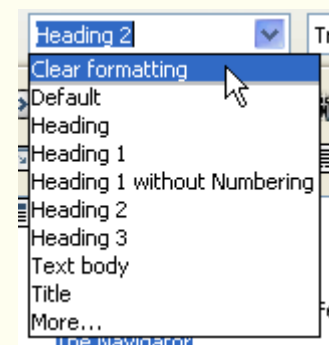
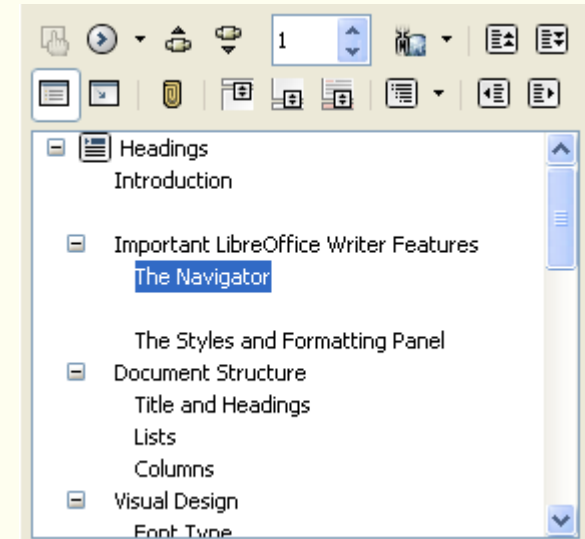
LibreOffice Writer Features: 2

- Applying styles
- Styles and Formatting panel (F11)
- Navigator (F5)



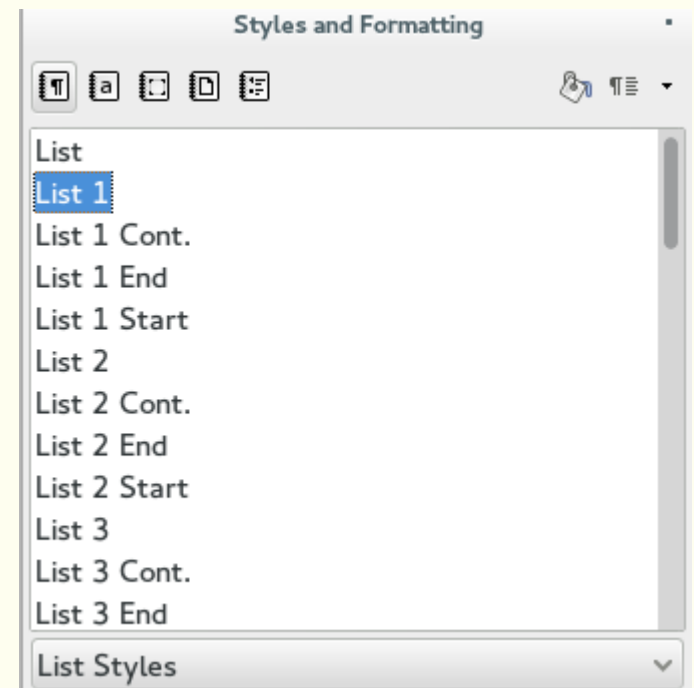
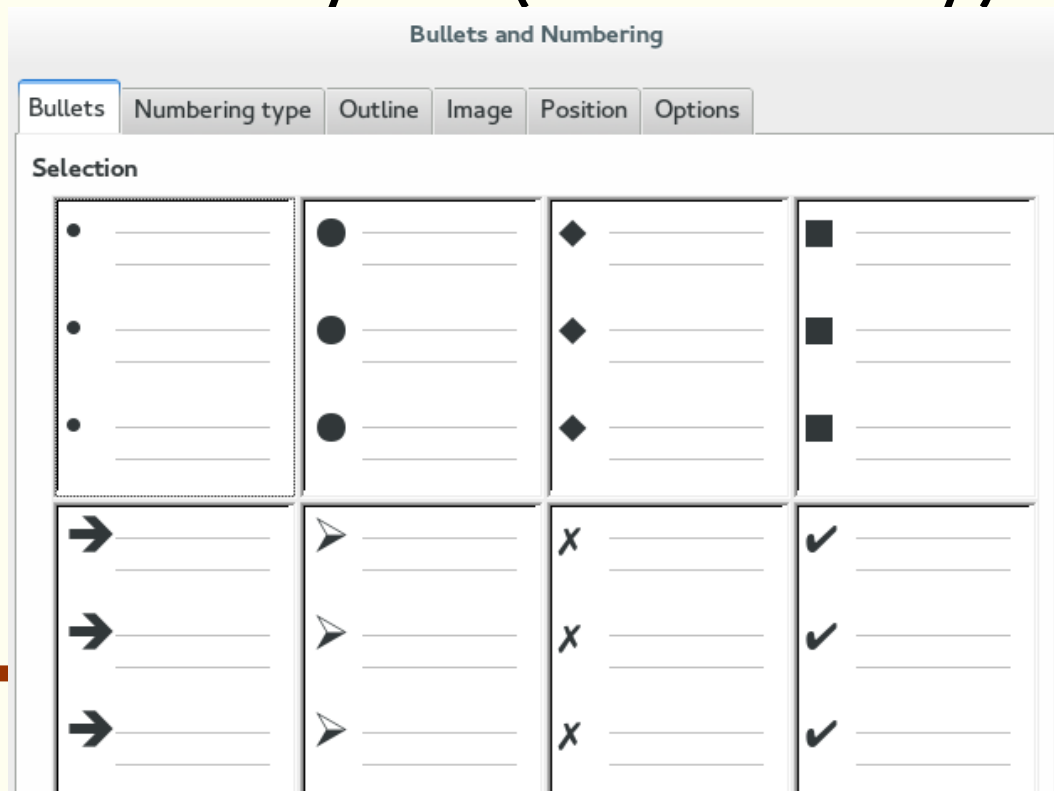
Document Structure

- Document title: Title & Subtitle
- Structure: Heading 1, Heading 2, ...
- Find empty headings with Navigator →
“Clear formatting” in styles



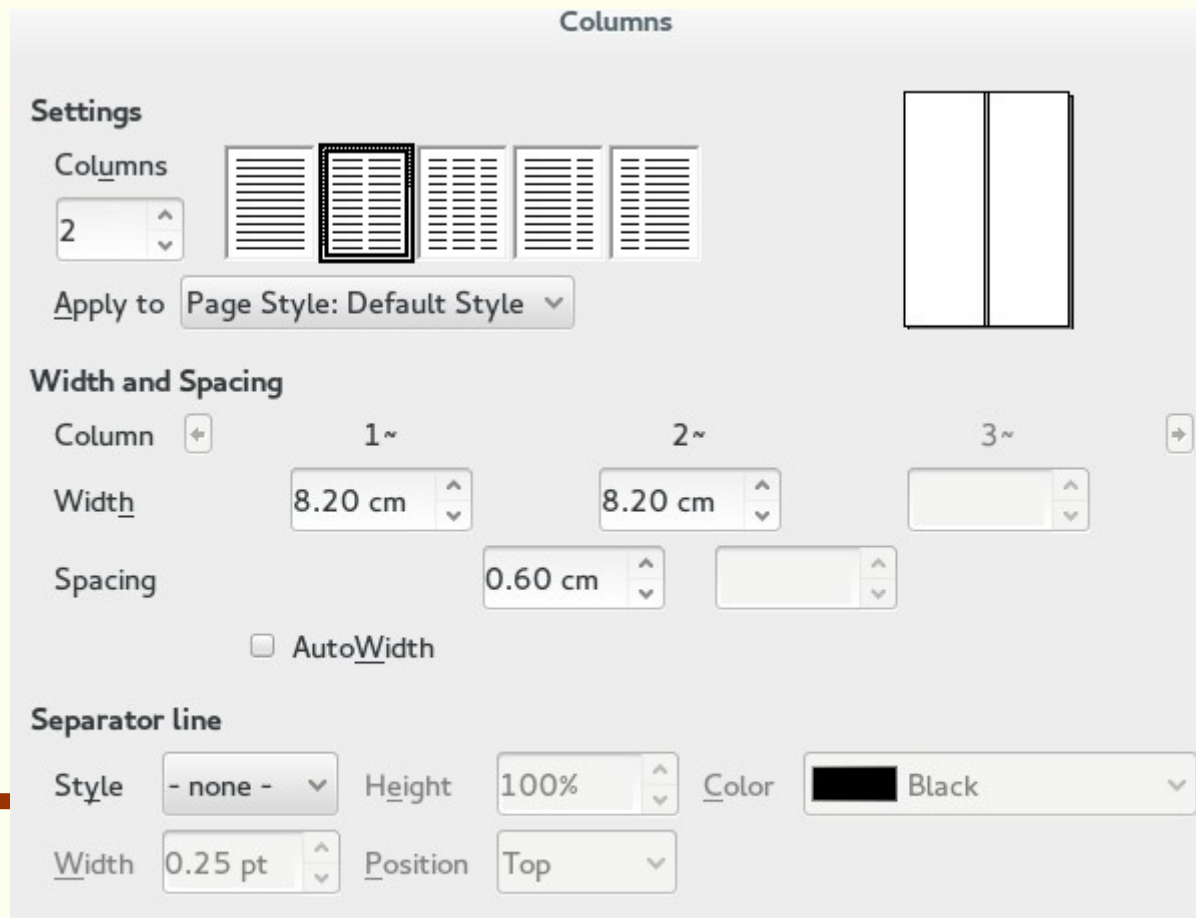
Lists

- Toolbar buttons for unordered and numbered lists
(or Format → Bullets and Numbering)
- List styles (more fiddly)



Columns

- Don't use tables or whitespace (e.g. tabs) to fake columns
- Format -> Columns...



Visual Design

- Avoid justified text (rivers of whitespace)
- Avoid long spans of
 - text in ALL CAPS
 - *italicised* or underlined text
- Font faces designed for use on screens:
 - Sans-serif: Verdana, Trebuchet MS, Calibri, Cantarell (?)
 - Serif: Georgia, Cambria, (Caladea?)

Font Face Readability

A few criteria:

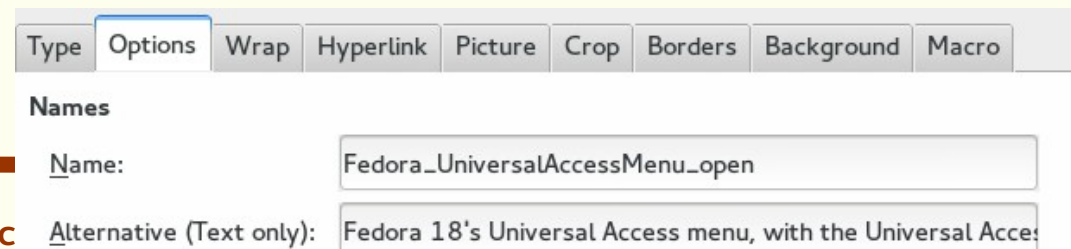
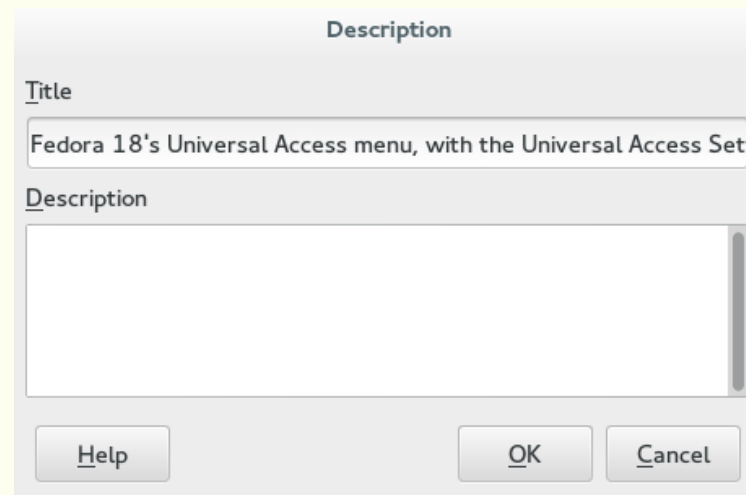
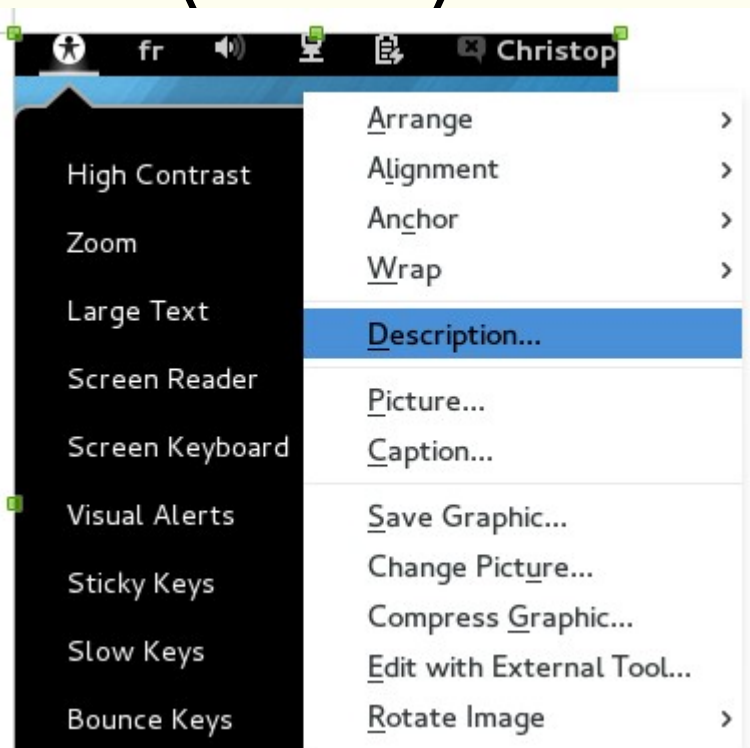
- Distinguish 1 l I
- Size of punctuation marks
- Width of the letters
- Spacing between letters

See also

- <http://www.aph.org/research/lpguide.htm>
- <http://www.lighthouse.org/accessibility/design/accessible-print-design/making-text-legible>

Images and Non-Text Objects (1)

- Add alternative text: context menu →
 - Description... → Title & Description
 - Picture... → Options: Alternative (Text only) (=Title)



Images and Non-Text Objects (2)

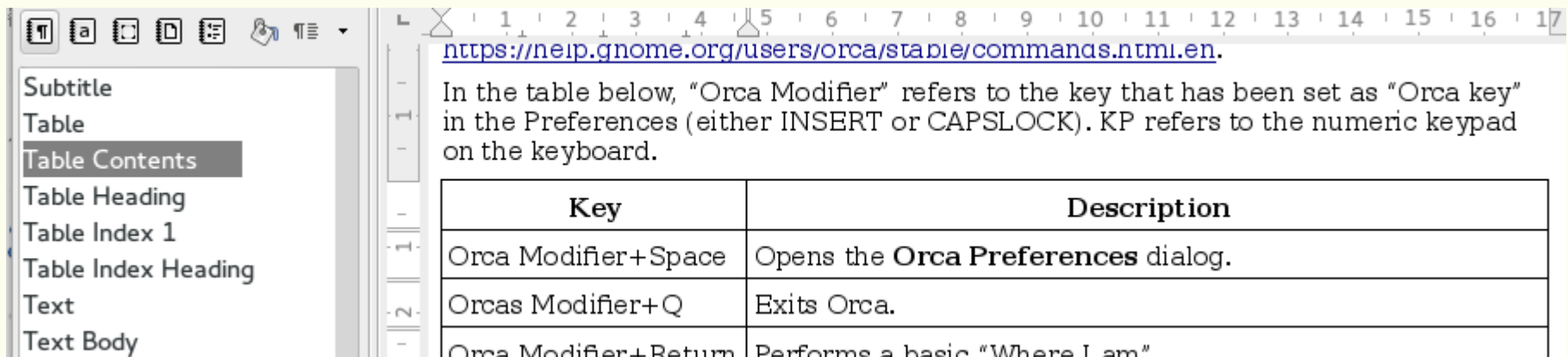
- OOo 3.2-3.4 & Libo 3.x-4.3 bug:
 - Text alternatives deleted after changing *anchor*
- OOo 3.2-3.3 & LibreOffice 4.3 bug:
 - Text alternatives deleted after adding *caption*
- => add text alternative *after* caption and/or anchor change

Images and Non-Text Objects (3)

- Export to (X)HTML: bugs:
 - LibO 4.x: "image title" → alt attribute
 - OOo 3.4: "image description" → alt attribute
- Save as HTML: "image title" → alt attrib
- Math & scientific formula
 - Safest option = replace MathML with image + description

Tables (1)

- Don't use tabs or spaces to fake tables
- Menus: Table → Insert → Table...
- For header row: change style from "Table Contents" to "Table Heading"



The screenshot shows a text editor window with a table. The left sidebar shows a list of styles, with "Table Contents" selected. The main text area contains a URL, a paragraph of text, and a table.

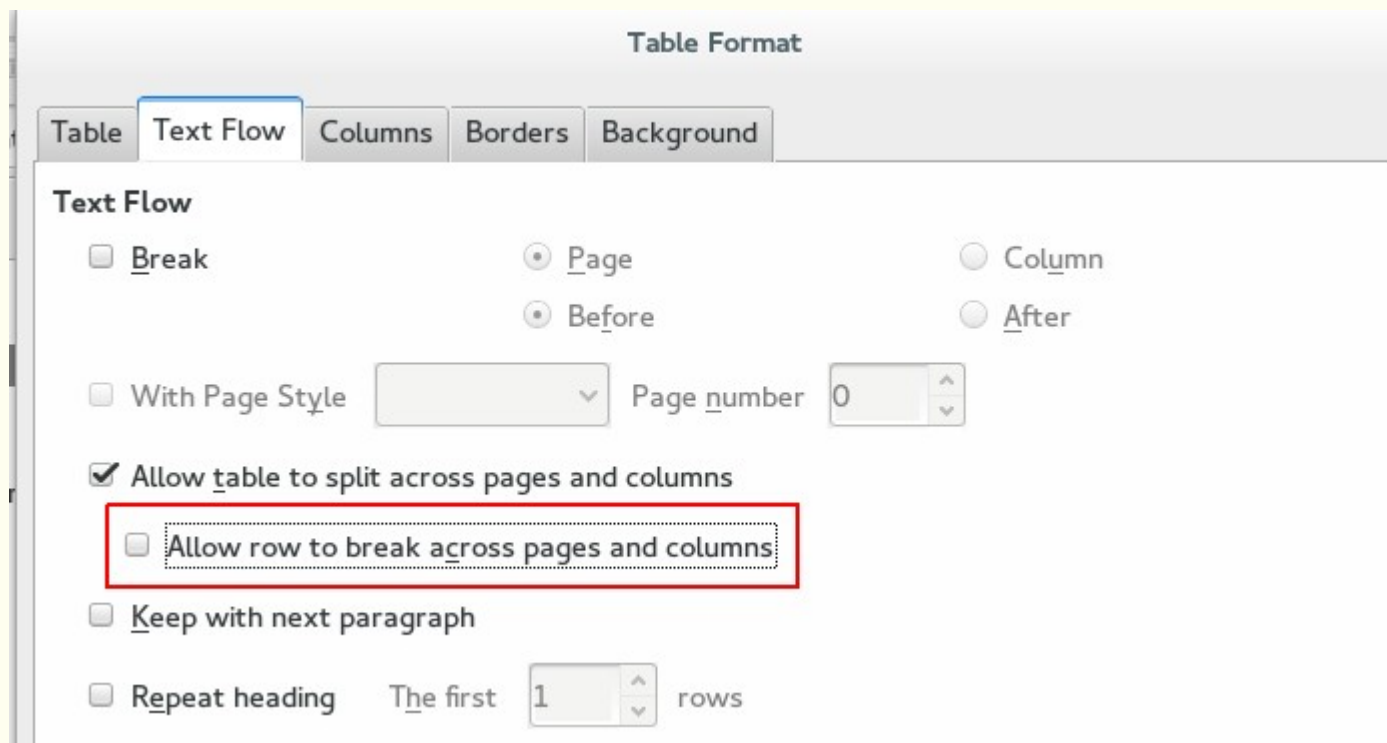
<https://neip.gnome.org/users/orca/stable/commands.ntml.en>

In the table below, "Orca Modifier" refers to the key that has been set as "Orca key" in the Preferences (either INSERT or CAPSLOCK). KP refers to the numeric keypad on the keyboard.

Key	Description
Orca Modifier+Space	Opens the Orca Preferences dialog.
Orca Modifier+Q	Exits Orca.
Orca Modifier+Return	Performs a basic "Where I am"

Tables (2)

- Make header row repeat
- Disable the option "Allow rows to break across pages and columns"

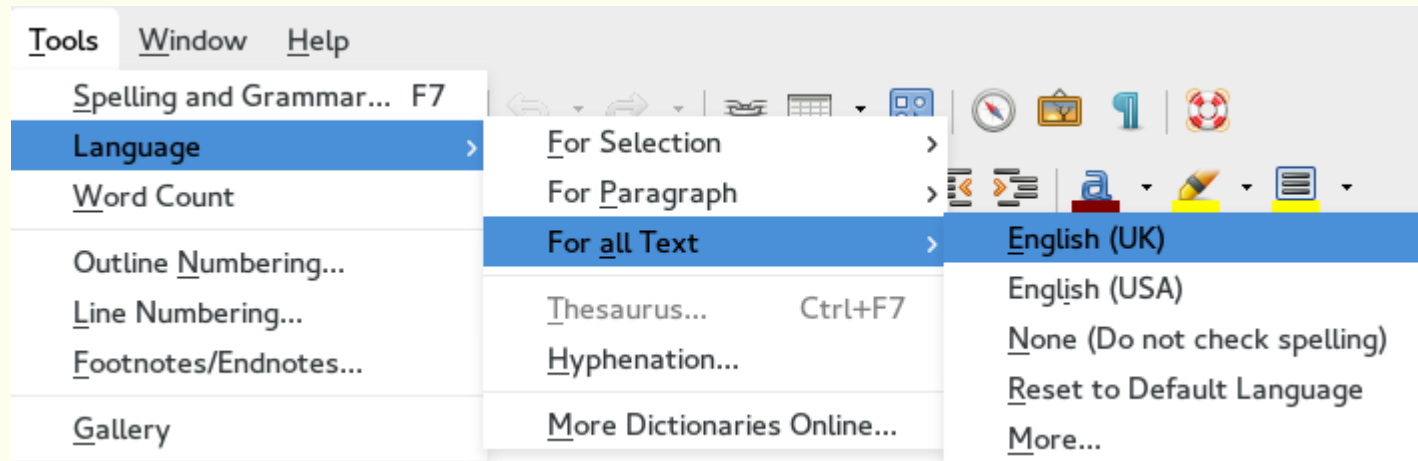


Tables (3)

- Never nest tables inside other tables!
- Avoid merged cells
- Break up complex tables into simpler ones
- (Avoid empty cells => "not applicable" / "no" / ...)
- Avoid images inside tables

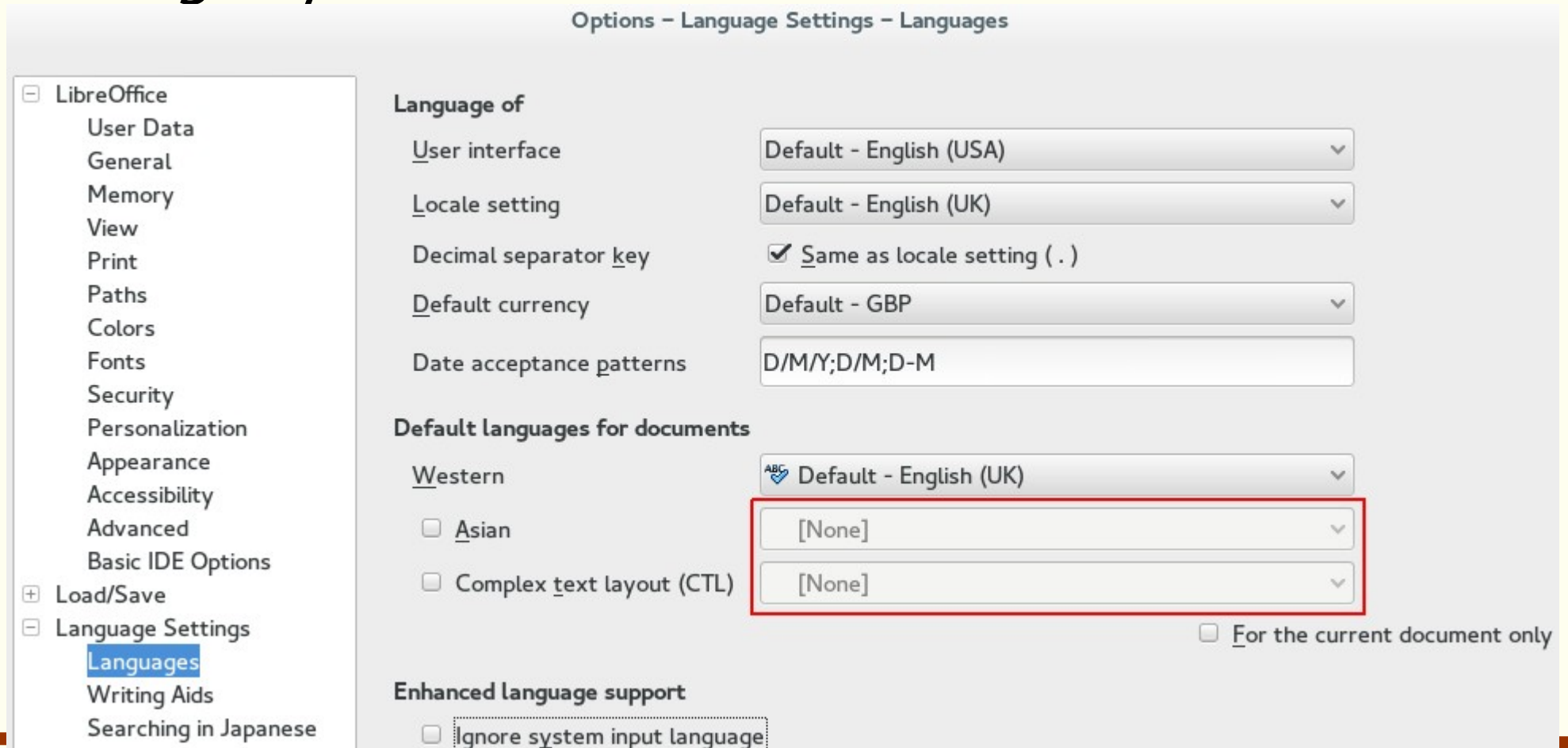
Language & Language Changes

- Mark up the default language of a document
- Mark up language changes in the document



Monolingual Documents

Set **unused** language types to “None” to avoid ambiguity!



The screenshot shows the 'Options - Language Settings - Languages' dialog box. The left sidebar lists various settings categories, with 'Language Settings' expanded and 'Languages' selected. The main area is divided into several sections:

- Language of**:
 - User interface: Default - English (USA)
 - Locale setting: Default - English (UK)
 - Decimal separator key: Same as locale setting (.)
 - Default currency: Default - GBP
 - Date acceptance patterns: D/M/Y;D/M;D-M
- Default languages for documents**:
 - Western: Default - English (UK)
 - Asian: [None]
 - Complex text layout (CTL): [None]
- Enhanced language support**:
 - ignore system input language

At the bottom right, there is a checkbox labeled 'For the current document only' which is currently unchecked.

Multiple Languages: styles.xml

```
<style:default-style style:family="paragraph">
```

```
<!-- ... -->
```

```
<style:text-properties (...)
```

```
fo:language="en" fo:country="GB" (...)
```

```
style:language-asian="zh" style:country-asian="CN" (...)
```

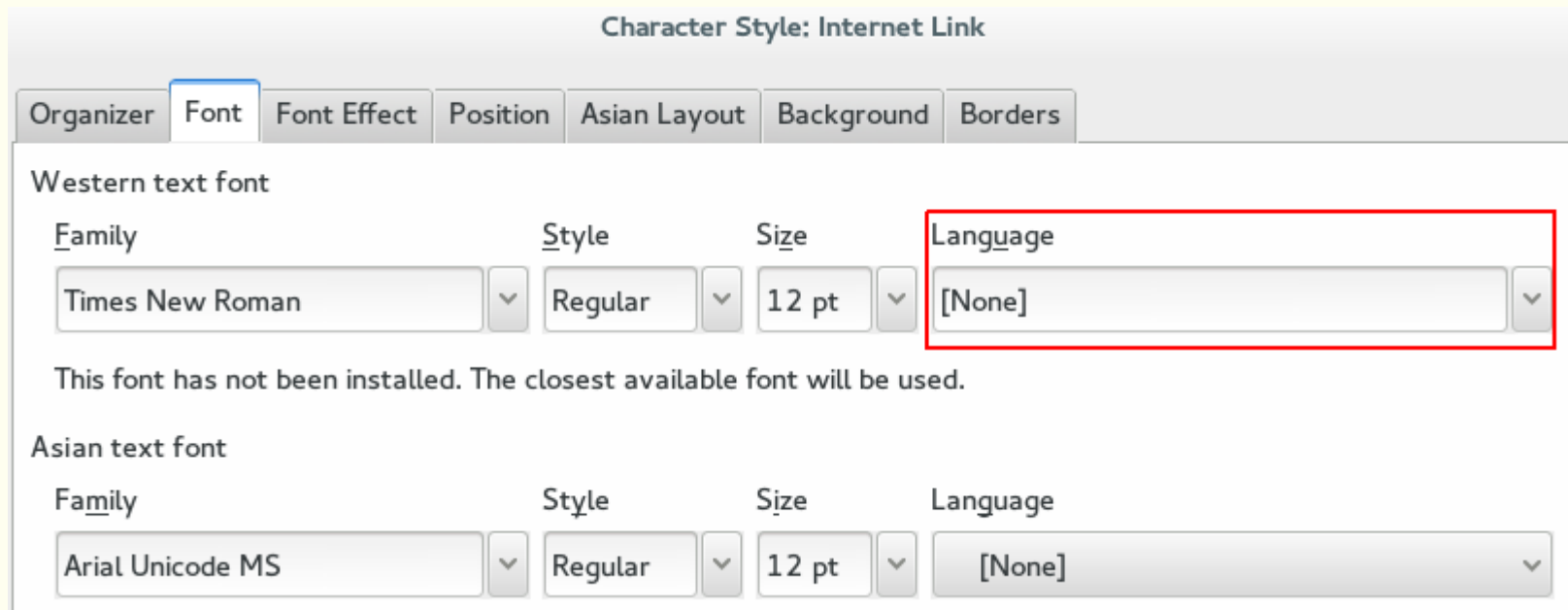
```
style:language-complex="hi" style:country-complex="IN"/>
```

```
</style:default-style>
```

It is not enough to disable Asian & CTL languages!

Language of Hyperlinks

- By default, hyperlinks have no language
 - Set each hyperlink's language, or
 - Modify the style “Internet Link”

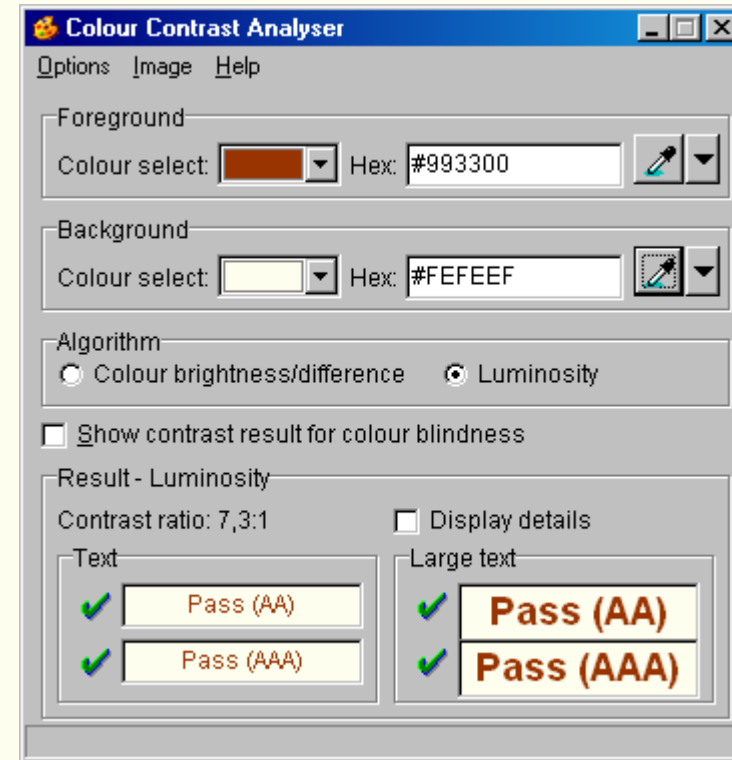


Language in Exported Formats

- Export to (X)HTML:
default language and language changes need to be defined again
- Save as HTML: preserves language changes
- Export to PDF:
check language in document properties; if necessary use Adobe Acrobat to correct the language, e.g. "en-GB" → English

Colour and Contrast

- Don't rely on colour alone to convey information (diagrams!)
- Sufficient contrast between foreground and background information in text, charts and images
 - Paciello Group Colour Contrast Analyser (GPL2)
 - Color Oracle (Java, MIT licence)




ODT Accessibility Checker

- AccessODF
<http://accessodf.sourceforge.net/>
- Evaluate accessibility
 - Errors
 - Warnings
 - Repair suggestions
 - Sometimes (semi-)automatic repair

Not compatible with current versions of LibreOffice or OpenOffice. (LibreOffice 3.x – 4.0; OpenOffice 3.3 – 3.4.1)

Issue:

 Image without text alternative

Description:

The image has no text alternative (Title and/or Description). A text alternative ensures that the

Suggestions:

To define a title and a description for an image, go to Format > Object > Description. The

Check Clear

Repair Ignore

Export to PDF

- General tab: check
 - "Tagged PDF"
 - "Export Bookmarks"
- Initial View tab: check
 - "Bookmarks and Page"
- These checkboxes remain checked

General

- Embed OpenDocument file
- PDF-A-1a
- Tagged PDF
- Create PDF form
- Submit format
- Allow duplicate field names
- Export bookmarks
- Export comments
- Export automatically inserted blank pages
- View PDF after Export

LibreOffice Accessibility Issues (1)

- Accessible title and description on image disappear when caption is added
- Accessible title and description on image disappear when anchor is changed (e.g. to "As character")
- Extension manager: tabbing out of list of extensions does not work when focus is on non-removable extension

LibreOffice Accessibility Issues (2)

- No explicit connection between label and field in extension GUI created through UNO API?
- Default language for presentation / spreadsheet not visible in status bar of Impress / Calc
- No language identification for sections / spans of text in Impress and Calc
 - (Calc: create language-specific styles)

LibreOffice Accessibility Issues (3)

- Impress PDF export
 - Text alternatives for images are not preserved
 - “All of the text on this page lacks a language specification” (each slide)
 - “Tab order may be inconsistent with the structure order” (some slides)
 - “None of the comments or other types of annotations on this page are contained in the structure tree” (some slides)

Questions? Comments?

- Contact:
 - strobbe@hdm-stuttgart.de
 - Twitter: [@RabelaisA11y](https://twitter.com/RabelaisA11y)
 - <http://cstrobbe.github.io/AccessibilityResources/>
- See also
 - **Accessible Digital Office Document project:**
<http://adod.idrc.ocad.ca/>