Document themes in LibreOffice
Impress and elsewhere

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About Miklos

From Hungary

- More details:
  https://www.collaboraoffice.com/about-us/

Google Summer of Code 2010 / 2011

- Rewrite of the Writer RTF import/export

Then a full-time LibreOffice developer for SUSE

Now a contractor at Collabora
Document themes in LibreOffice Impress and elsewhere
Document themes

Colors

- A set of 12 colors
- A pair of black/white, a pair of light/dark, 6 accent colors, a pair of hyperlink colors

And the rest

- Fonts
- Formattings
- we ignore these for now
Application support: Impress

Impress

- Document themes are specific to a master page
- Unlike text documents, a single presentation can have multiple themes this way

And the rest

- Tomaz Vajngerl initially started his theme prototype in Writer, it’ll have a single theme / document when we get to it
- Calc?
Impress color support

Shape text

- Focusing on this one as a start
- When you refer to a theme color, it can have effects: lighter / darker
  - These are supported in Impress

The rest

- Color in solid fill
- Color in gradient fill
- Line color
- Etc.
Use-case: update themed colors

The whole point of document themes in one sentence:

- When selecting colors, pick them from the color set of the theme
- So when the theme changes, the uses of the color are also updated
- Allows designing generic templates, where only the organization color has to be customized

Interaction with styles

- Independent concept, think of theme colors as named colors
  - The two can work together
- A style can refer to a color, defining additional effects
Per-master-page themes

Difference from Writer, where there is only one theme

- The used theme is defined based on what master page is selected

Trade-off

- Want fast rendering? Pre-calculate colors when the theme changes
- Want simple updater code? Only have references to theme colors, calculate them as part of rendering
- Going with the first for now
UI: define a theme

Switch to master page mode

- Sidebar → Properties → Slide → Master view button
- Slide menu → Slide properties → new Theme tab there

Specifying individual colors

- Theme colors are empty by default
  - Perhaps the design people want to suggest a good default theme at some stage
- Color picker interacts with the existing color palettes (where the color is just copied)
UI: refer to a theme

From the menu:

- Format → Character → Font effects tab → Font color
- The special “Theme colors” palette is the interesting one, it shows colors from the current master page

Sidebar

- Properties → Character → Font color has a similar color picker
- Can select theme colors there as a special palette
- Each row is one theme color
- Each column in the base color + various pre-defined effects on it
How is this implemented?
Document model

Refer to a theme: SvxColorItem

- Has the mColor member for the theme color
- New members:
  - Theme index: -1 if not a theme color, allows the actual update
  - Tint/shade: not used by Impress for now, will be needed for Writer
  - Luminance modulation / offset: these allow lighter / darker variants

The theme itself: SdrPage → SdrProperties

- New (optional) svx::Theme member
- A theme: name + color set
- A color set: name + list of 12 colors
UNO API

Refer to a theme:

- CharColorTheme
- CharColorTintOrShade
- CharColorLumMod
- CharColorLumOff

Theme itself:

- Draw page → master page → new Theme property
- Theme: name, color scheme name, color scheme
- Color scheme: the 12 color values (integers)
Rendering

Decided that the update happens at a UI level

- So rendering should be easy, no logic change is needed there...

...but need to rendering lighter / darker colors

- tools/ Color already has an ApplyTintOrShade(), added by Tomaz
- New ApplyLumModOff() that applies the luminance modulation / offset effect
  - Meant to be bit-by-bit compatible with PowerPoint
Filters

OOXML

- They have the markup for this already
- Complexity: some of this was already preserved via grab-bags
  - Logic: if the doc model has the info, then use it
  - Otherwise read the grab-bag

ODF

- Refer to a theme: new loext:theme-color, loext:color-lum-mod and loext:color-lum-off attributes for shape text
- The theme itself: master pages can have a new <loext:theme> child element:
  - loext:color-table as a child, loext:color as a sub-child, similar to what color palettes do
Tests

CppunitTests

- CppunitTest_ooxDrawingml for the PPTX import
- CppunitTest_tools_test for the Color effects
- CppunitTest_svx_styles for how to apply a new theme
- CppunitTest_sd_export_tests-ooxml2 for PPTX export of the theme itself
- CppunitTest_oox_export for the PPTX export of referring to a theme
- CppunitTest_xmloff_draw for the ODP filter
- CppunitTest_sd_uiimpress for the sidebar

UITests

- UITest_cui_tabpages for the “define theme” UI
- UITest_cui_dialogs for referring to a theme
User interface

The theme itself

- New tabpage on the slide properties dialog
- SvxThemePage in cui/

Referring to a theme

- SvxCharEffectsPage in cui/ hosts the color picker
- That has a special palette: Theme colors (similar to existing Document colors)
- Same for the sidebar, but that dispatches an UNO command to set the new color
  - That is also extended with theme index + effect parameters as needed
Documentation

How to add a new help page for a new tab page?

- Recently added new tab page: text column properties of shape text
- Great work from Mike Kaganski, but the help page was forgotten
- Added that first, just two widgets

Theme tab page of master slide properties

- Main point is to document the purpose of the 12 colors
- The OOXML spec doesn’t have much details, but one can guess based on the sample usage
- black/white, lighter/darker text color, 6 accent colors, normal/followed hyperlinks
Thanks

Collabora is an open source consulting and product company

- What we do and share with the community has to be paid by someone

SUSE

- Made most of this work possible by Collabora
Summary

Good initial support for document themes in LibreOffice:

- Focusing on Impress
- Focusing on colors
- Focusing on shape text... as a start

Thanks for listening! :-)

- Slides: https://people.collabora.com/~vmiklos/slides/