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

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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
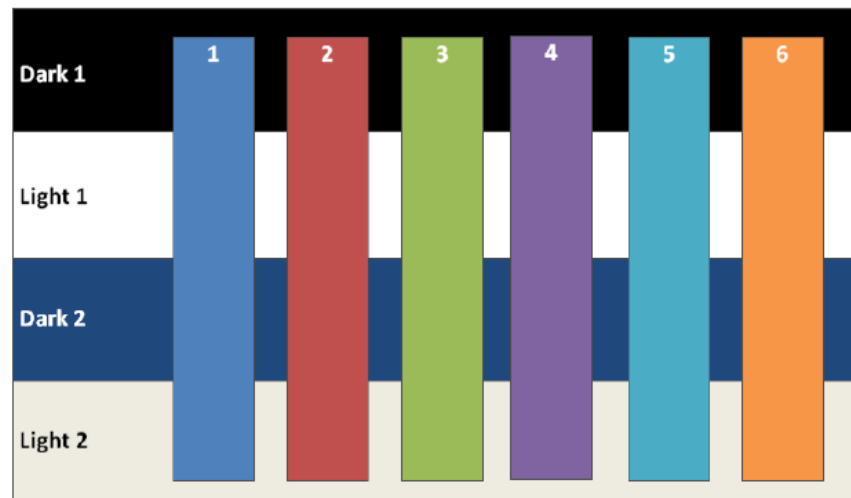
- Calc?

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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

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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)

Slide Properties

Slide	Background	Transparency	**Theme**

General

Name: Office Theme

Color Set

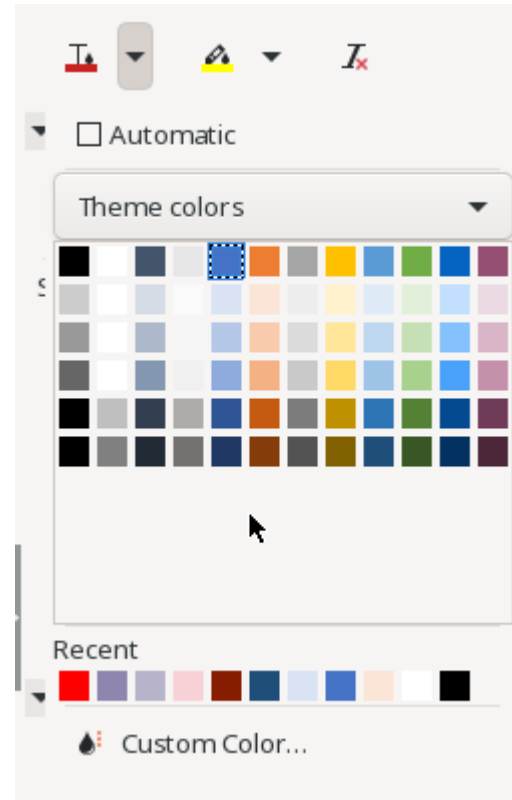|	
Name:	Office
Background - Dark 1:	▮ Black
Text - Light 1:	▯ White
Background - Dark 2:	▮ #44546A
Text - Light 2:	▯ #E7E6E6
Accent 1:	▮ Accent 1
Accent 2:	▮ #ED7D31
Accent 3:	▮ #A5A5A5
Accent 4:	▮ #FFC000
Accent 5:	▮ #5B9BD5
Accent 6:	▮ #70AD47
Hyperlink:	▮ #0563C1
Followed Hyperlink:	▮ #954F72

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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?

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Document model

(via pinimg.com)

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 ligher / 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

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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)

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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

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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
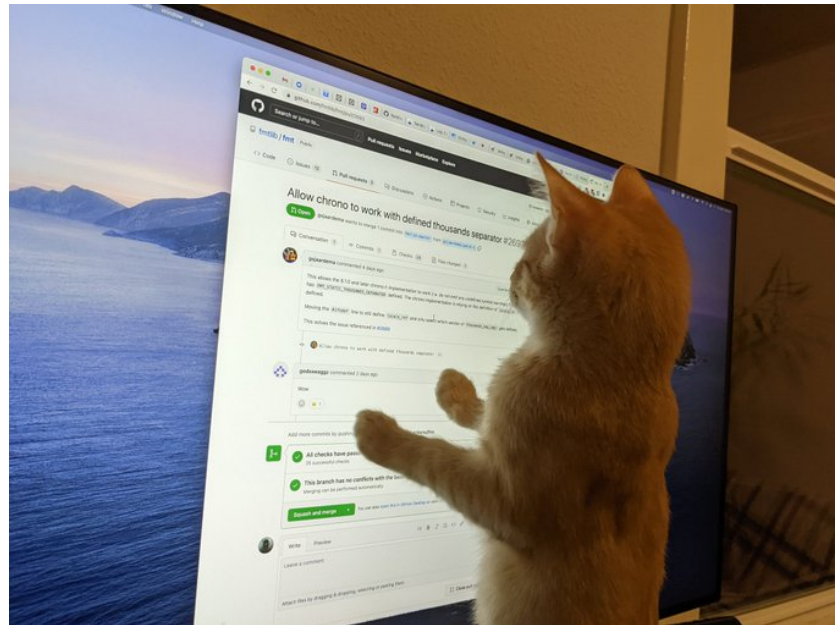
Tests

CppunitTests

- CppunitTest_oox_drawingml 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

(via @vzverovich)

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 this work by Collabora possible

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/