Once Upon a Primitive Slideshow
- and other news from Impress -

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Graphics Stack Legacy

- LibreOffice Applications
  - Accessibility
  - Toolkit
  - Forms
  - ...

- VCL
  - WindowsGDI
  - fontconfig
  - KDE
  - CoreGraphics
  - psprint
  - gtk
Graphics Stack: SlideShow

LibreOffice SlideShow

Canvas implementations
- cairo
- WindowsGDI+
- WindowsGDI
- VCL
- OpenGL
- DirectX
- CoreGraphics
- psprint
OpenGL Slideshows
OpenGL render actions

```cpp
struct CanvasHelper::Action
{
    B2DHomMatrix maTransform;
    GLenum meSrcBlendMode;
    GLenum meDstBlendMode;
    rendering::ARGBColor maARGBColor;
    B2DPolyPolygonVector maPolyPolys;

    ::boost::function6< bool,
                        const CanvasHelper&,
                        const B2DHomMatrix&,
                        GLenum,
                        GLenum,
                        GLenum,
                        const rendering::ARGBColor&,
                        const B2DPolyPolygonVector& > maFunction;
};
```
Canvas::drawLine():

mpRecordedActions->push_back( Action() );
Action& rAct=mpRecordedActions->back();

setupGraphicsState( rAct, viewState, renderState );
rAct.maFunction = ::boost::bind(&lcl_drawLine,

_1, _2, _3, _4, _5,
    aStartPoint, aEndPoint);
(Non-)Primitive Slideshows
Separates model & view
  – SdrObject (model)
  – ObjectContact & ViewObjectContact: view + “content” of the view

Bins ad hoc output/geometry generation, instead employs factored-out graphics tooling (basegfx)

Provides scene-graph like hierarchy of view content, makes it easy to “plug in” different renderers
DrawingLayer: What & Where

libreoffice/drawinglayer/

BasePrimitive2D

Polygon*Primitive2D

VclPixelProcessor2D

VclMetafileProcessor2D

CanvasProcessor2D
SlideShow: What & Where

libreoffice/slideshow/

SlideShowImpl

View

Slide

Shape

1..n
0..n
Reworking SlideShow

(feature/slideshow/primitives) $ libreoffice/slideshow
Current Branch State

2017bbd Wrap up plain XCanvas with view-specific render state.
9fa9ea0 Remove inline SCM comments and unused parameters.
6b1231f [API CHANGE] Avoid excessive compound struct use for XCanvas.
c60e725 Die, wrapper code, die.
5d7c894 Rework slideshow to use XCanvas directly.
dd675b0 Kill remaining linker usages of cppcanvas.
339e182 Cleanse sd of cppcanvas helper use.
85e6215 [API CHANGE] Have XCanvas provide all-surface erase-to-color.
e0c1dc6 Move slideshow over to use drawinglayer primitives.
21b68db More detailed docs on drawinglayer primitive UNO api.
20f1564 Fix some transformation bugs in canvasprocessor, add logging.
6d8f77b First cut at resuscitating primitive2canvas processor.
What's up next?

- OpenGL charting integration with Impress
- Better text implementation in OpenGL Canvas
- Finish grunt work in slideshow, bust then-unused code
- Profit! :)

(faster, cleaner, more lightweight implementation)
Contacting us
- Development: libreoffice@lists.freedesktop.org
- IRC: #libreoffice-dev on freenode.net

Useful links
- Build HowTo: http://wiki.documentfoundation.org/Development/Native_Build
- Source code docs: http://docs.libreoffice.org/
thb@libreoffice.org
With Code also from Rodo and Armin Le Grand