LibreOffice on Android

Miklos Vajna

2015-01-31

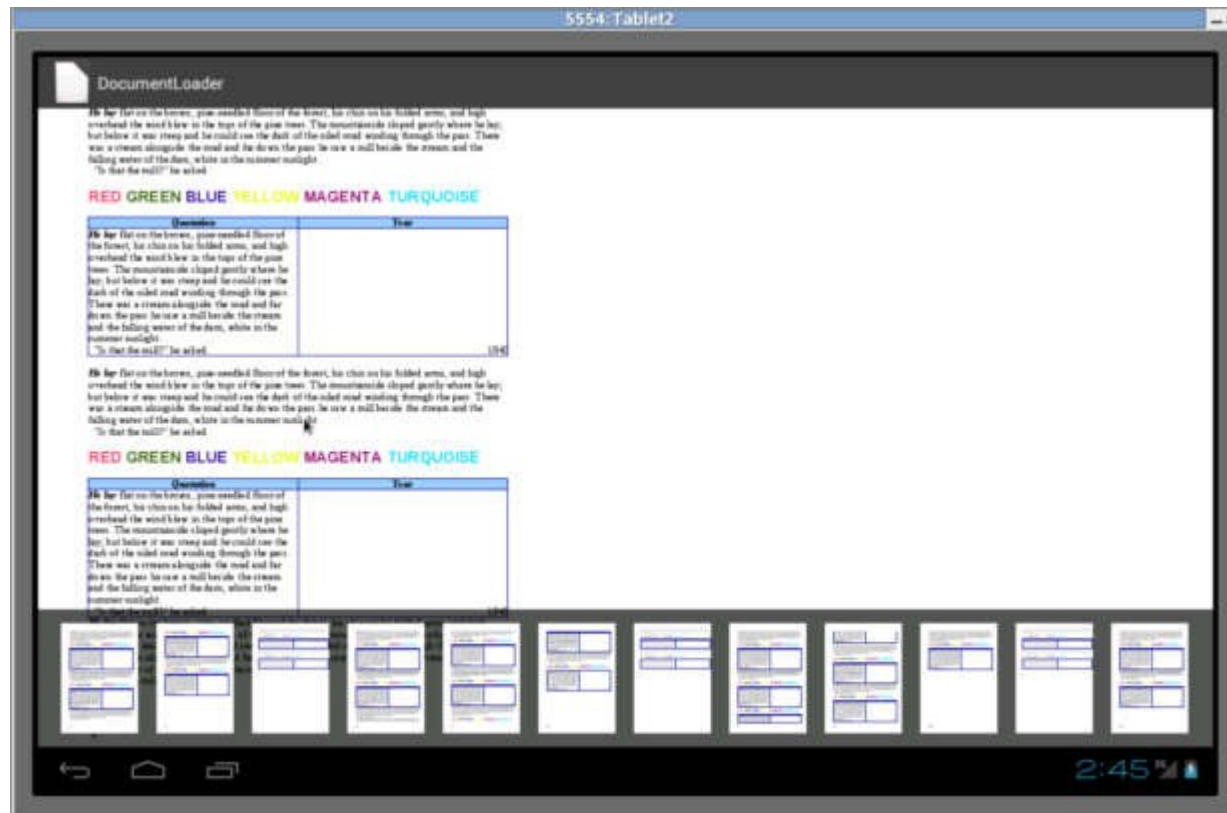# What has been done

Cross-compiling, single .so

- Need to decide what will be run on the machine building LO (build) and on the target platform (host)

- Need a single liblo-native-code.so, due to stupid Android linker limitation (128 libs)

- Need to bypass all unit tests

- Mostly done by Tor Lillqvist back in the SUSE times

DocumentLoader prototype

- This was a viewer application

  - Writer-only

- Rendered each page as a bitmap

  - Problem: what resolution to use

  - Too large: out of the memory

  - Too small: unreadable if you zoom in
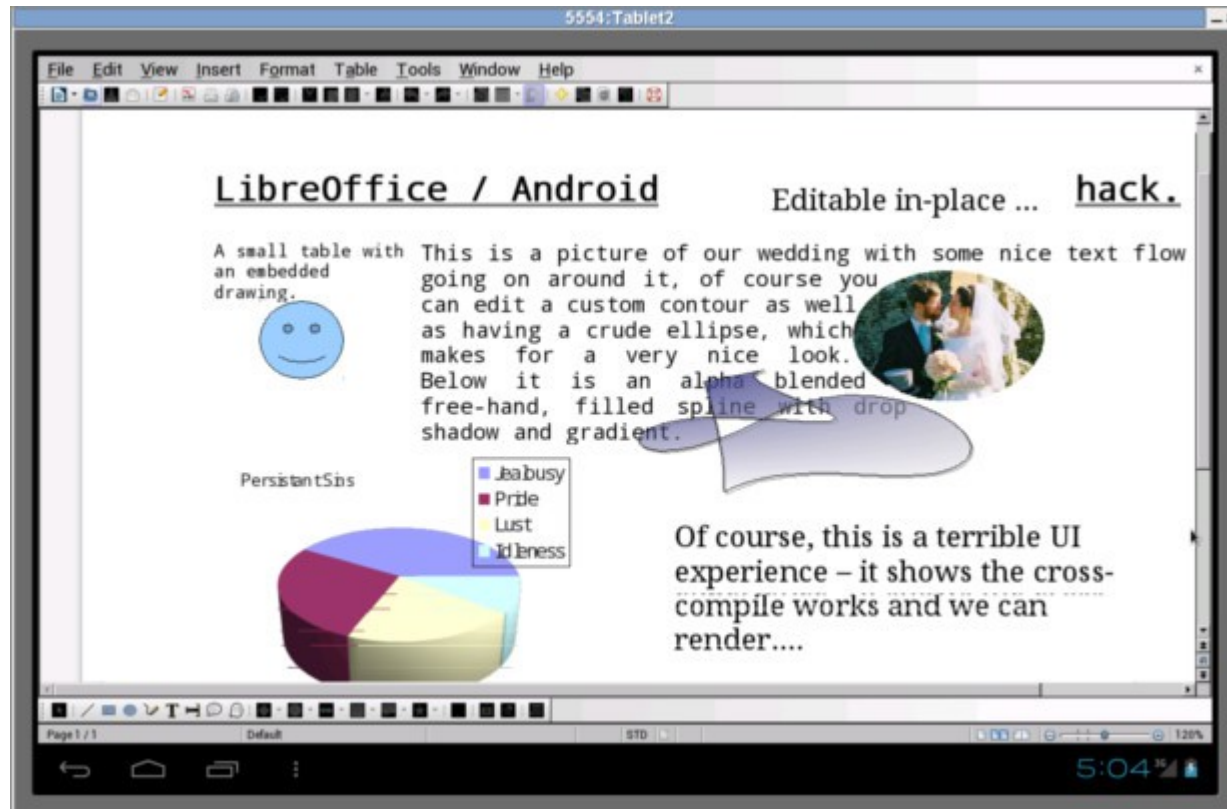
- Again mostly done by Tor Lillqvist

LibreOffice
from COLLABORA

DocumentLoader prototype

Desktop prototype

- This was an editing application

  - Still Writer-only

- Idea: in case the Android device has a real keyboard / mouse attached

- Rendered the whole desktop to a bitmap

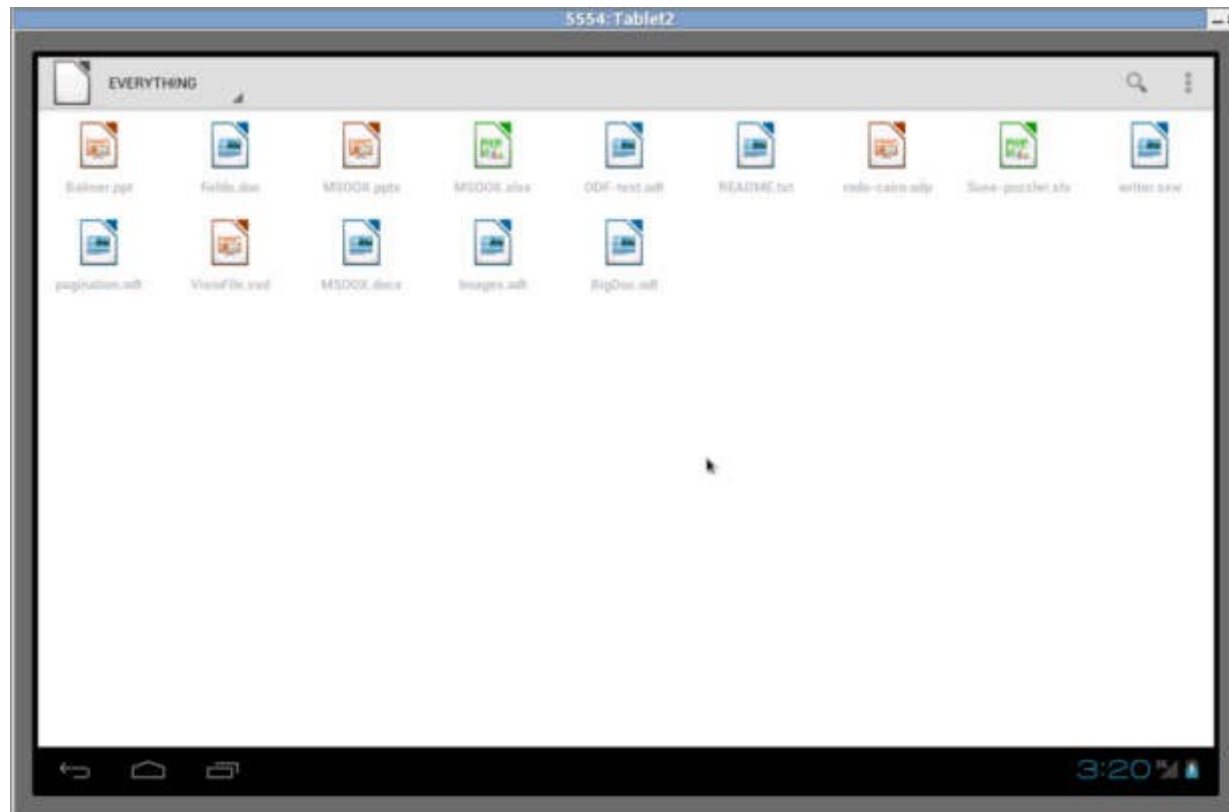 - Again and again … :-)

- Initially by Michael Meeks

Desktop prototype

Document browser

- Idea: most Android phones have no built-in file manager

- Let's add one that uses DocumentLoader for viewing files supported by LO

- Initially by Ian Billet (GSoC)

  - Improvements by Igalia
  - See next talk by Jacobo

Document browser
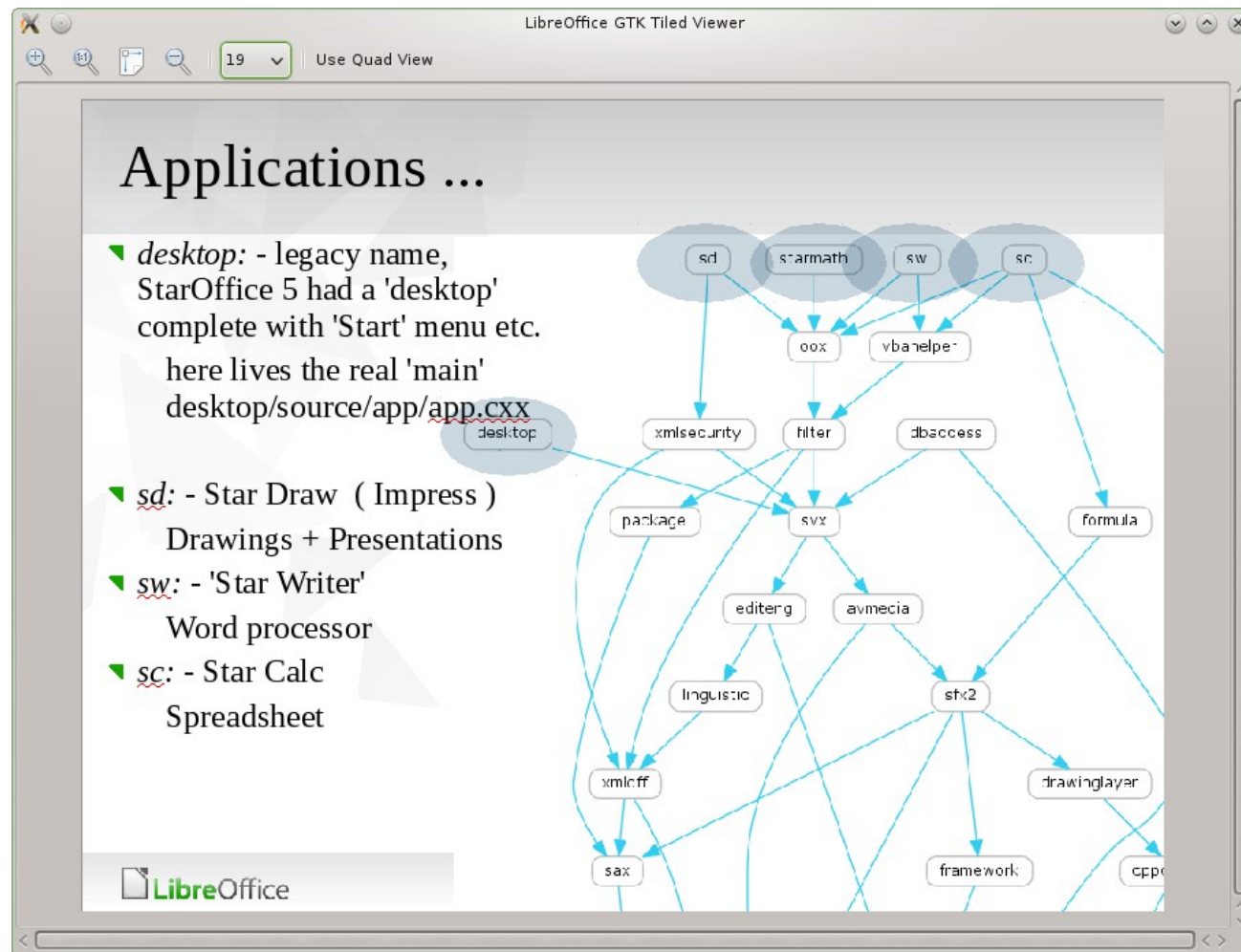
Tiled rendering

- Idea: render many 256x256px tiles

  - Instead of using UNO to render a single huge bitmap

  - Used by Firefox for Android successfully

- Initially for Writer

  - Mostly by Jan Holesovsky (Collabora)

Tiled rendering for Impress

- If we can do it for Writer, it must be possible for Impress and Calc, too

- Tiled rendering for Impress

  - Initially by Andrzej Hunt (GSoC)

- And Calc... no so easy

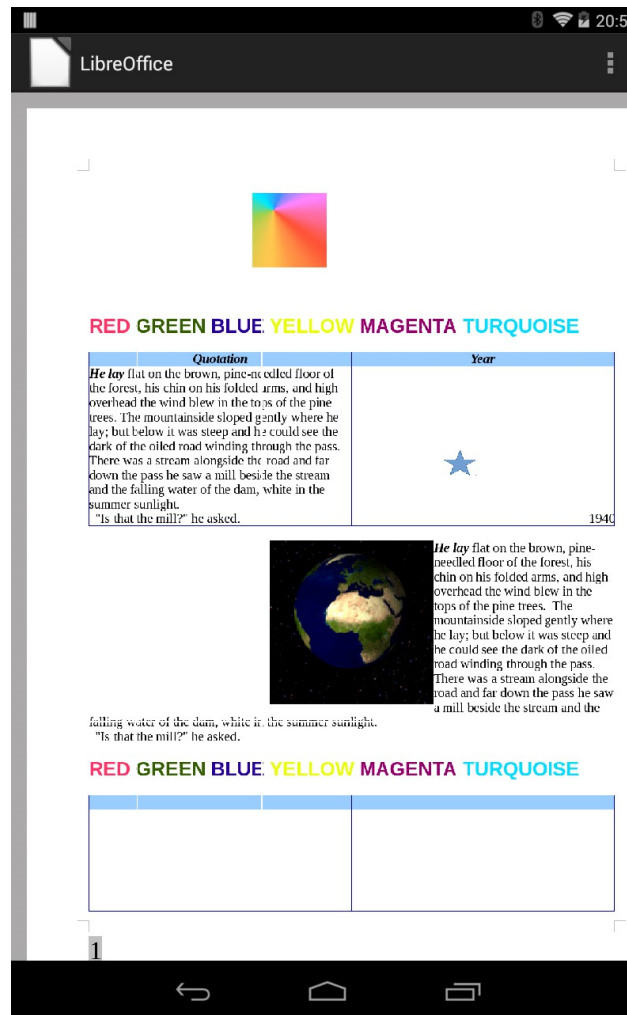 - Was done on a feature branch, never merged to master

Tiled rendering for Impress

Tiled rendering on Android

- ## We use a subset of Fennec
  - ### Firefox for Android

- ## Via LibreOfficeKit
  - ### The tiled rendering API is simply declared unstable
  - ### C + C++ wrapper + JNI

- ## Initially by Tomaž Vajngerl (Collabora)

- ## Thanks to Smoose

Tiled rendering on Android

Play store release

- LibreOffice is for end-users
- One could build from source
- There were even tinderbox daily builds
- The real release is still what's available from the play store
  - https://play.google.com/store/search?q=libreoffice
- Several last-minute fixes

What's cooking?

Tiled rendering / Calc

- Very much in progress

- Simple documents render

- Second try by Kohei Yoshida (Collabora) in a few days

- Still not complete, but at least it's in master
  - Does not cause problems with the desktop rendering

Tiled editing

- If we have a viewer, why not allow editing, too?

- Needs input handling and lifecycle management for tiles

- Firefox renders webpages

  - Javascript → they need to update rendered webpages as well

gtktiledviewer

- Android wants a whole .apk each time
  - See also the mentioned single .so
  - Development not productive
- Let's sort out core + sample LOK client via GTK
- Real 256x256px tiles there by me
- Demo

Basic editing framework, selections

- Kindly sponsored by TDF

- Since doing all the heavy-lifting for free did not happen for quite some time

- Not a product, but enough that the rest can be done as usual development

- Selections, as that requires a working overlay

Blinking text

- Example of changing document

- Without input handling

- Demo on gtktiledviewer + Android

Plans for the near future

Keyboard and mouse/touch

- Keyboard: Unicode + control characters
- Need to map backspace to e.g. .uno:SwBackspace
    - Requires a fully working SfxDispatcher
- Mouse/touch
    - Tap somewhere → blinking cursor appears
    - Long push → selects words
- Demo on gtktiledviewer

Native overlay

- Content that should be outside the tiles
- E.g. blinking cursor
- Selection, handles to adjust it
- And then: the same for Calc, Impress :-)

Summary

- LibreOffice on Android is in progress since 2010
    - Viewer now available in the Play store
    - Editing is actively worked on
    - Sounds interesting?
    - Plenty of easy hacks around the document browser in the bugzilla
- Thanks for listening! :-)
- Slides: http://vmiklos.hu/odp