

LibreOffice on Android

struggles of a largish native app

Introduction

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- AKA cloph on irc/elsewhere
- part of the project since the very beginning (infra side)
- since a few years employed by TDF
 - initially part-time as infrastructure administrator
 - later fulltime as sysadmin and release engineer
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Timeline

- September 2011:
first successful cross-compilation with the NDK
(efforts did start in May)
- alonside: August 2011:
start of mergelibs feature
- April 2012 first pokes at a UI
(Impress Remote App accepted as GSoC
project as well as the LibreOffice for Android
project)

First hurdles

- linking time
- text relocations / non-PIC from external libraries
- buildsystem still in rework to gbuild (gnu make)

Timeline (cont)

- May 2012:
DocumentLoader – renders a predefined sample document to a bitmap to display, android bugs along the way
<https://issuetracker.google.com/issues/36949059>
- birth of tiled rendering API effort
- June 2012:
had the DocumentLoader and an experimental UI
→ LibreOffice4Android to combine the two
- July 2012:
start of x86 support
- August 2012
ndk 8 with gold linker
- yet another “desktop” frontend

Where to go?

- multiple UI efforts started, still unclear where it will lead to, all gates open for experiments
- different coding styles/philosophies right from the get-go

Timeline (cont)

- February 2013:
text input and touch events
- March 2013:
zooming
- refining what was already there
rework scaling, add scrolling, similar stuff

Problems

- kinda isolated, not much other people payed attention
- Impress remote was much easier to get into and see results with
- build system still undergoing restructuring

Timeline (cont)

- June 2014:
Android Viewer project landed, using mozilla's Fennec (LOAndroid)
- also June 2014:
LOAndroid2 using GLES2 (mozilla gecko)
- also June 2014:
LOAndroid3 (based on LibreOffice4Android)
use ant/make to get and apk...

Problems

- choices everywhere.....
- how do others deal with it?

Timeline (cont)

- July 2014:
use LibreOfficeKit
use tiledrendering
- September 2014:
merge LibreOffice4Android & LOAndroid3
- October 2014:
redraw on orientation change
- December 2014:
obsolete DocumentLoader
dump LOAndroid and LOAndroid2
priority based rendering (low-res tiles)
support Draw documents

Problems

- yay – LibreOfficeKit!
now there is a plan on how to deal with rendering/interaction
- first taste of Lifecycle issues
- consolidating work

Timeline (cont)

- January 2015:
callbacks from LibreOfficeKit to JNI/Java
add Calc documents
handle keyboard input
- February 2015:
swipe gesture for presentation
text selections
- March 2015:
select graphic objects
use appcompat-v7
introduce editing toolbar

Timeline (cont)

- April 2015:
bin old eclipse workspace/UI form 2012
handle italics/strikeout/underline
- May 2015:
editing as opt-in, settings for sort/filter options
bin “desktop” app and documentloader
- Android port “matures”
android/experimental/LOAndroid3
→ android/source

All good, right?

- kinda – progress was mostly due to a tender
- but laid the foundation for current workings

Timeline (cont)

- June 2015:
owncloud provider
- September 2015:
save to owncloud
also refactor, fix obsoleted stuff to bump
appcompat-v7 version
- October 2015:
Android Studio layout editor improvements
cleanups
migrate to gradle!
AssetsManager in java and native code

Timeline (cont)

- November 2015:
fix corner cases with some docs
add bottom formatting toolbar
search, undo/redo
- December 2015:
storage access once more (OTG/external storage)
- 2016 was a slow year
mostly fixing document provider bugs, struggle with different devices
refresh using material guidelines and icons
- November 2016:
gradle with instant-run
confirm save when closing

Problems

- tender was over, laid foundation, so that gained some interest, but still kinda hard to work and debug it
- volunteer priorities not necessarily those of endusers
- Fix my bug!!einself!

Timeline (cont)

- January 2017:
revamp document selector once more
reduce use of static context objects
- February 2017:
add recently used documents
yet another change to document providers
- March 2017:
insert numbering/bullets
bottom toolbar refresh increase/decrease font
size and similar
add way to create new document

Timeline (cont)

- April 2017:
android lint fixes
search: move view to result
add page count indicator
redo creation of documents (backwards compatibility)
double-tap zoom in/out
- May 2017:
presentation mode
- June 2017:
start of calc UI
- July 2017:
resize/change width/hide columns/rows

Timeline (cont)

- August 2017:
Font color, color picker
support for password protected documents
`extractNativeLibs="false"`
- September 2017:
drop workarounds for ndk-gdb
- November 2017:
insert pictures (but not in writer)

Problems

- mostly minor things
- still struggling with the size of the project (hitting the 100MB limit)
- external libs also need updates (removal of ant support)

Timeline (cont)

- January 2018:
 - option to show hidden files/folders
 - fix timing related crashes
 - unified headers and llvm-c++
 - dynamic permissions (AKA yet another rework of the storage stuff)
 - further removal of static context usage
 - add slides to presentation
 - font background color
- February 2018:
 - add sheets to calc

Timeline (cont)

- March 2018:
clipboard actions
- April 2018:
improvements to dynamic permission handling
- May 2018:
insert/delete tables in Writer
- July 2018:
more unhandled exceptions
developer mode
rename/delete worksheets and slides
- August 2018:
store edited document when switching apps/resume with the edited document
pdf export, printing
clear format

Problems

- People picked up interest again
- too bad that there we're still lacking behind