GSoC students' panel

Organizer: Miklós Vajna

2013-09-25

Andrzej Hunt: Implement Firebird SQL connector for LibreOffice Base

About Me

- 3rd year Engineering Student at Cambridge – reading modules mostly in Information Engineering for next two years.

- 2nd GSOC – implemented the Impress Remote Control in 2012.

- Row for the Cambridge Uni. Lightweight Rowing Club – currently President (and not in Milan since responsible for the training camp that is running now).

Firebird Integration (GSOC 2013)

- Implement embedded Firebird SDBC driver.

- Alternative to / replacement for embedded HSQLDB driver.

- Frees us from another Java dependency for Base (however Base wizards and reportbuilder still need Java for now).

- Frees us from JNI slowness.

- Firebird DB (.fdb) stored within .odb, extracted as temporary file while running.

- Perhaps less elegant HSQLDB writing directly to the .odb file (implemented by overloading Java's IO).

- But ensures the .odb is always in a safe state (user reports of corruption with HSQLDB exist, but are unconfirmed).

- Theoretically also usable for external files and remote databases, but not yet implemented (possible Easyhack?).

Firebird vs HSQLDB performance: Test Details

- Insertion of ~120'000 words (dump of english aspell dictionary), retrieval of all data.

- Insertion using PreparedStatement.

- Retrieved using "Select *", ResultSet iterated over and Strings retrieved again.

- Sources/instructions in dbaccess/qa/unit/embeddeddb_performancetest.cxx

Firebird vs HSQLDB Performance: Results
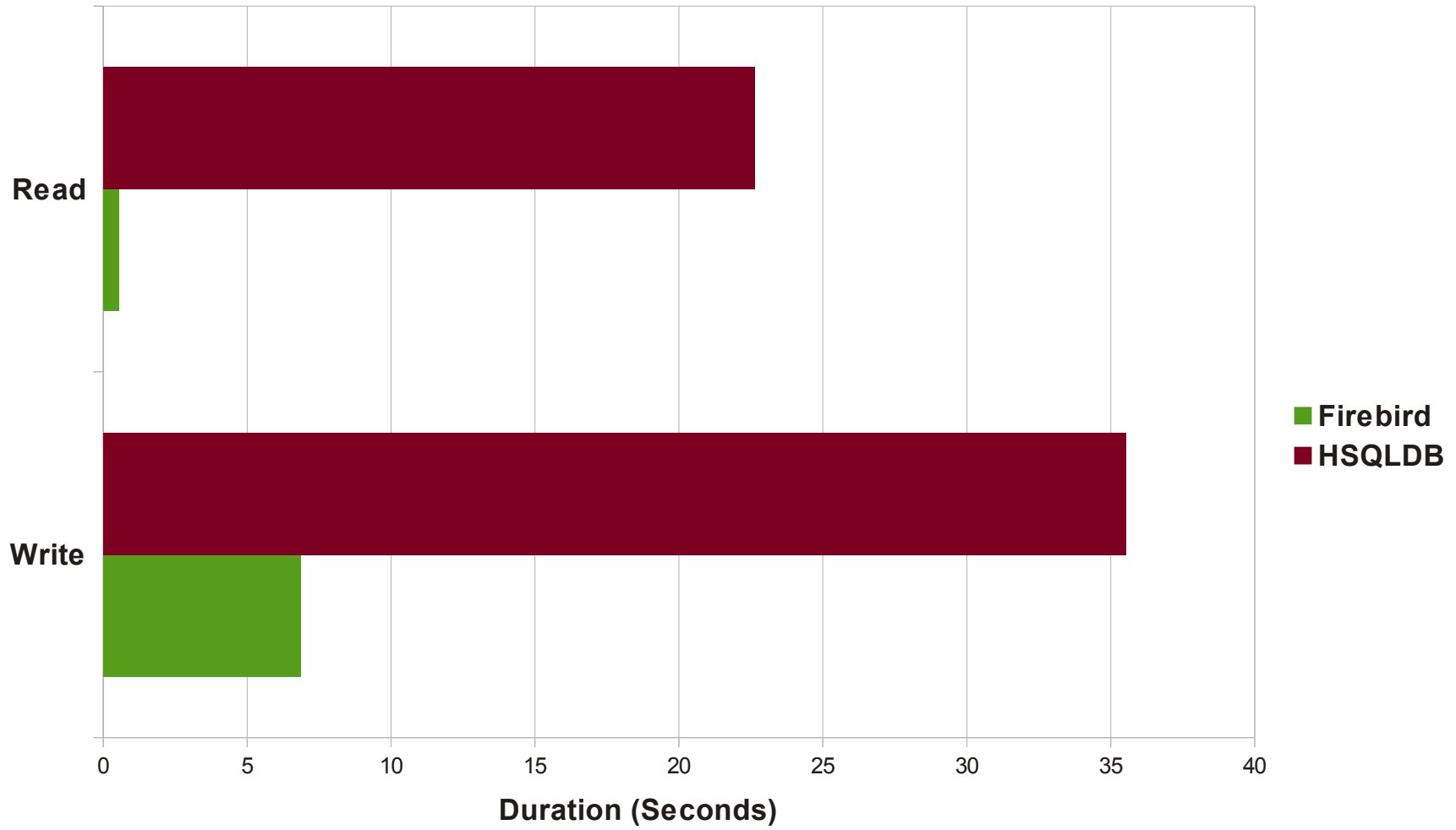
Firebird vs HSQLDB Performance: Further Info

- Main issue for HSQLDB probably JNI use (I.e. This is not an accurate measure of HSQLDB vs Firebird performance in their respective native environments).

- HSQLDB within LO has a 220k record limit, limiting this aspect of testing.

- Firebird figures only valid for Strings without type conversion:

  - Implicit type conversion for ResultSet permitted by API and has to be handled by driver.

  - Base (dbaccess) gui uses the correct types / doesn't make use of implicit conversion -- benchmark without conversion still appropriate for us.

  - Conversion only relevant for external usage of sdbc drivers, not for Base?

  - Benchmarking for other datatyes (and performance hit for conversion) being developed.

Firebird/Base Future

- De-Javaifying Base completely – reportbuilder and Wizards are still written in Java?

- Blobs still require proper implementing – being done right now.

- Firebird 3 – saner build system, cross-compilable, more datatypes – potentially better for future use (uses same API)? Stable Release Mid-2014.

- HSQLDB parser in C/C++? JVM still needed for Base use, so conversion using HSQLDB perhaps more sensible for now – in the long term Java-free conversion would be better?

- Possiblility of raw SQL storage in .odb to allow for more flexibility/reliability with db changes? (Performance/size hit unknown)

- SQL Export from Base? Tool doing so for firebird already exists, could be reused?

Impress Remote for Android
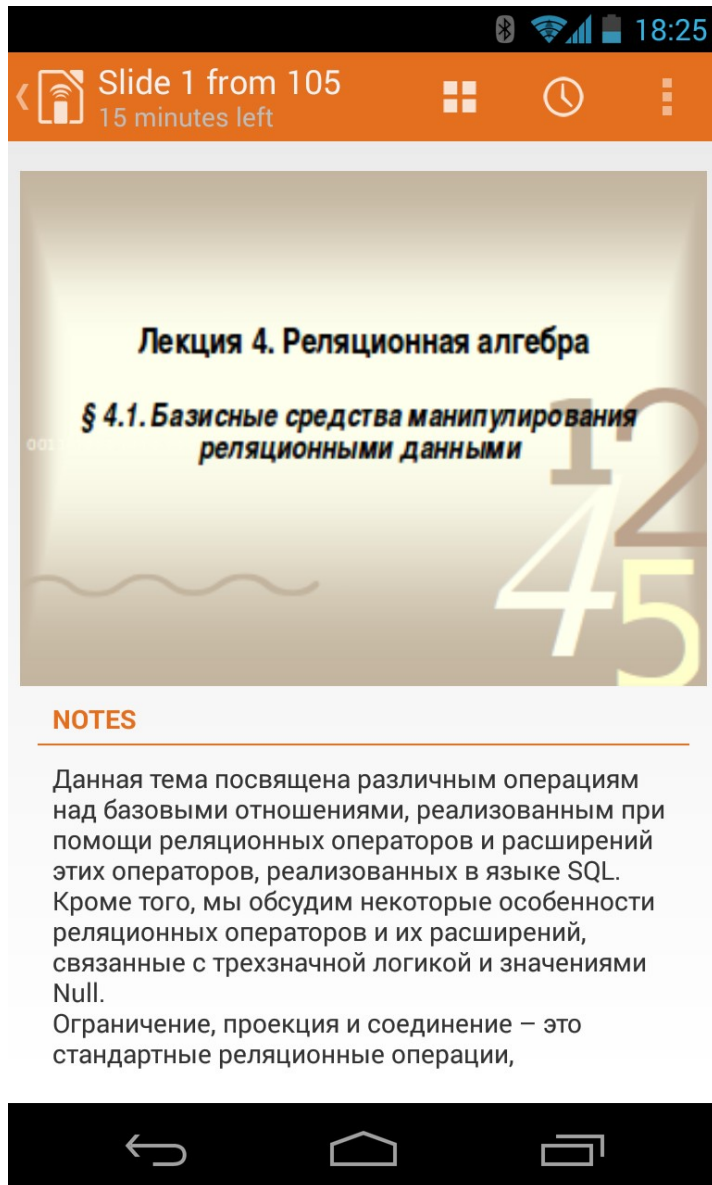
Artur Dryomov

Polotsk State University

Novopolotsk, Belarus

artur.dryomov@gmail.com

Impress Remote for Android

85% of current users are using Android 4 and higher.

It's time to follow guidelines!
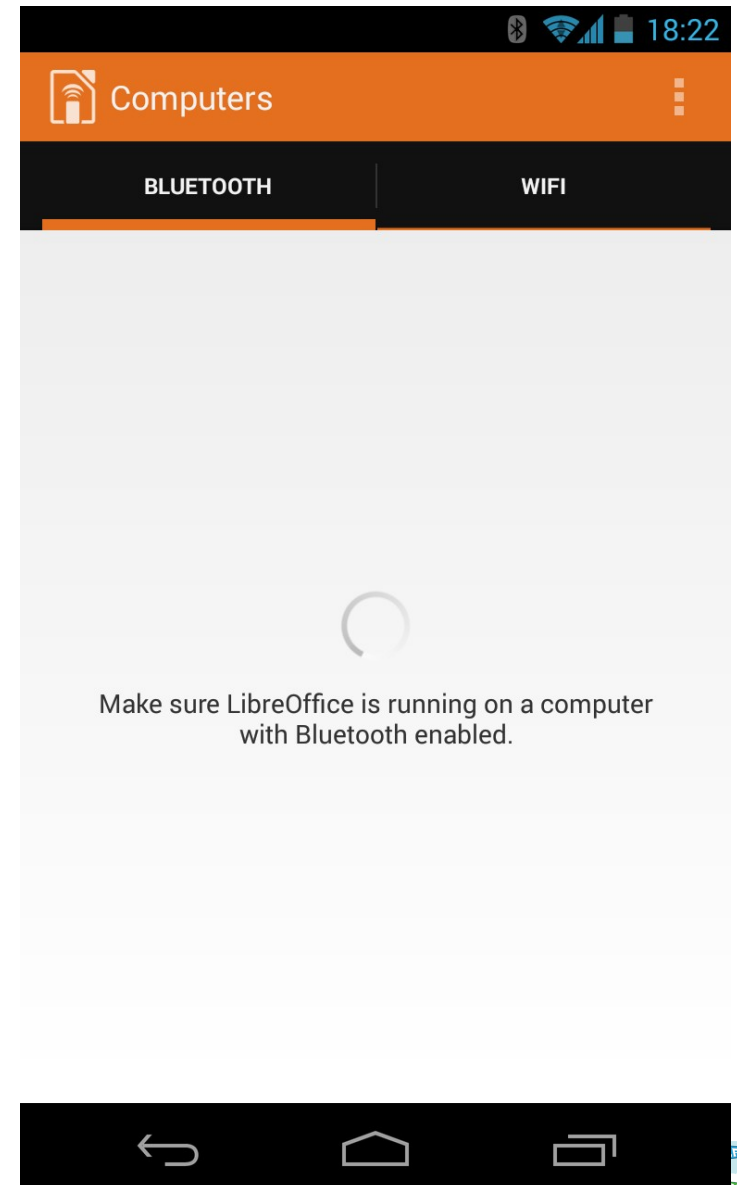
Impress Remote for Android
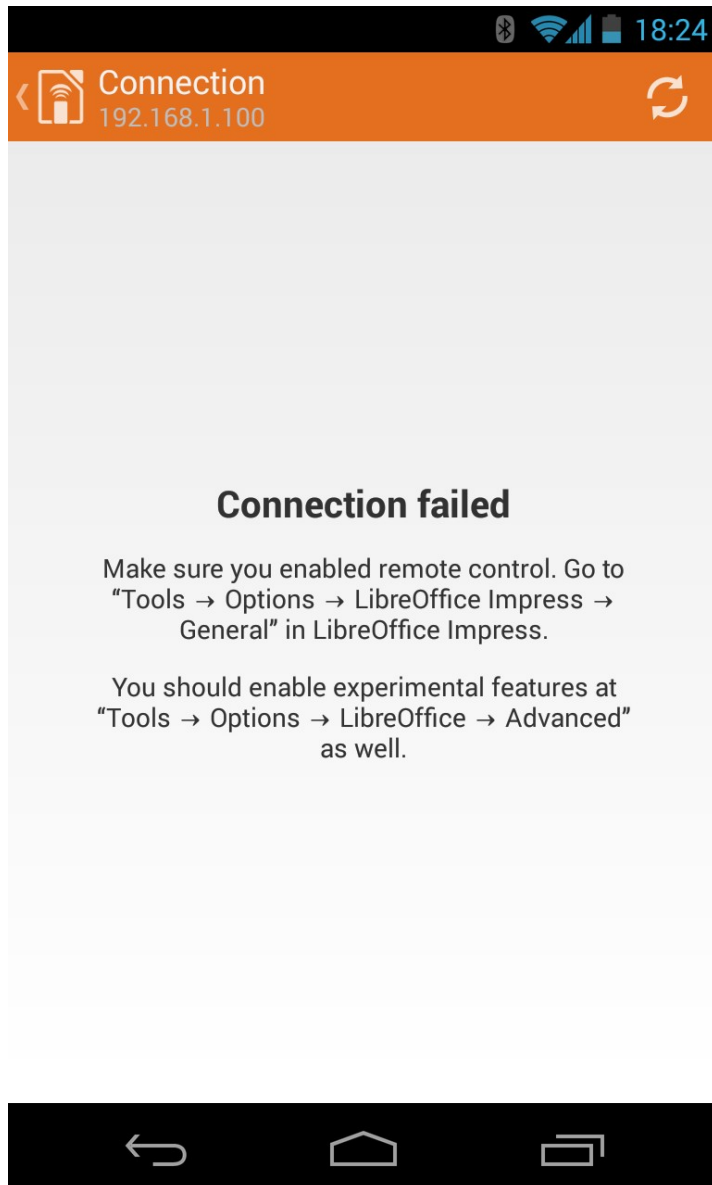
Problem: it is hard to connect to a desktop suite.

Solution: provide in-app instructions to follow users in the process.
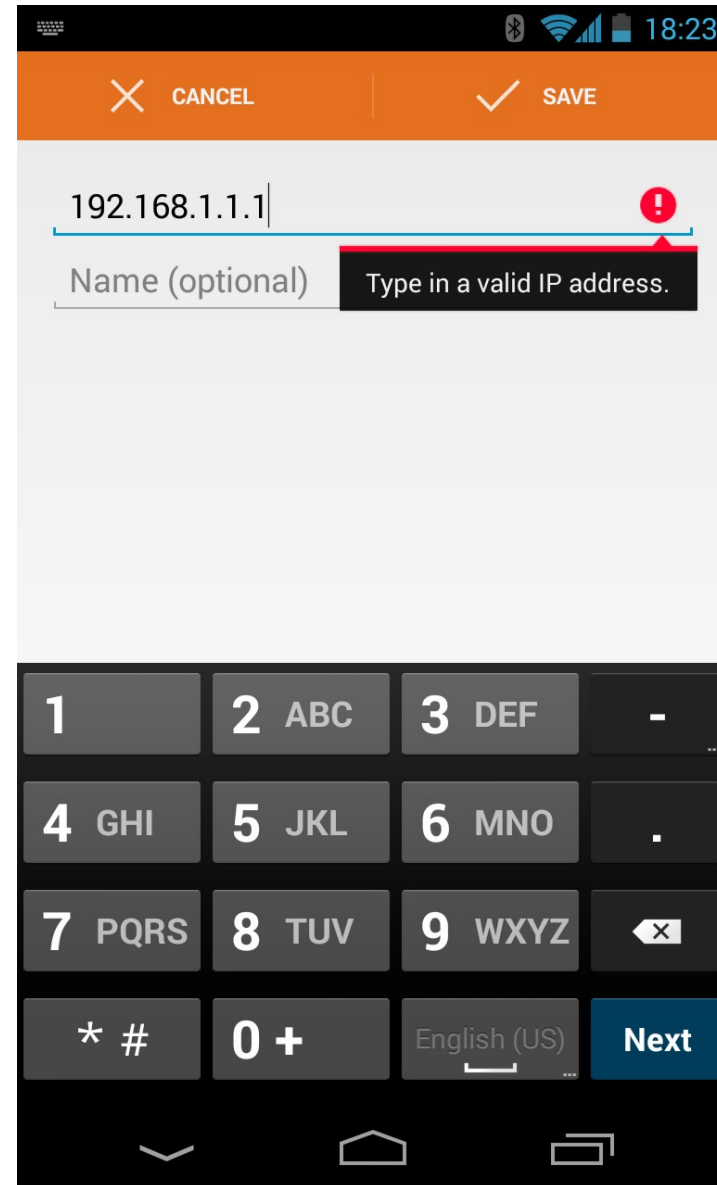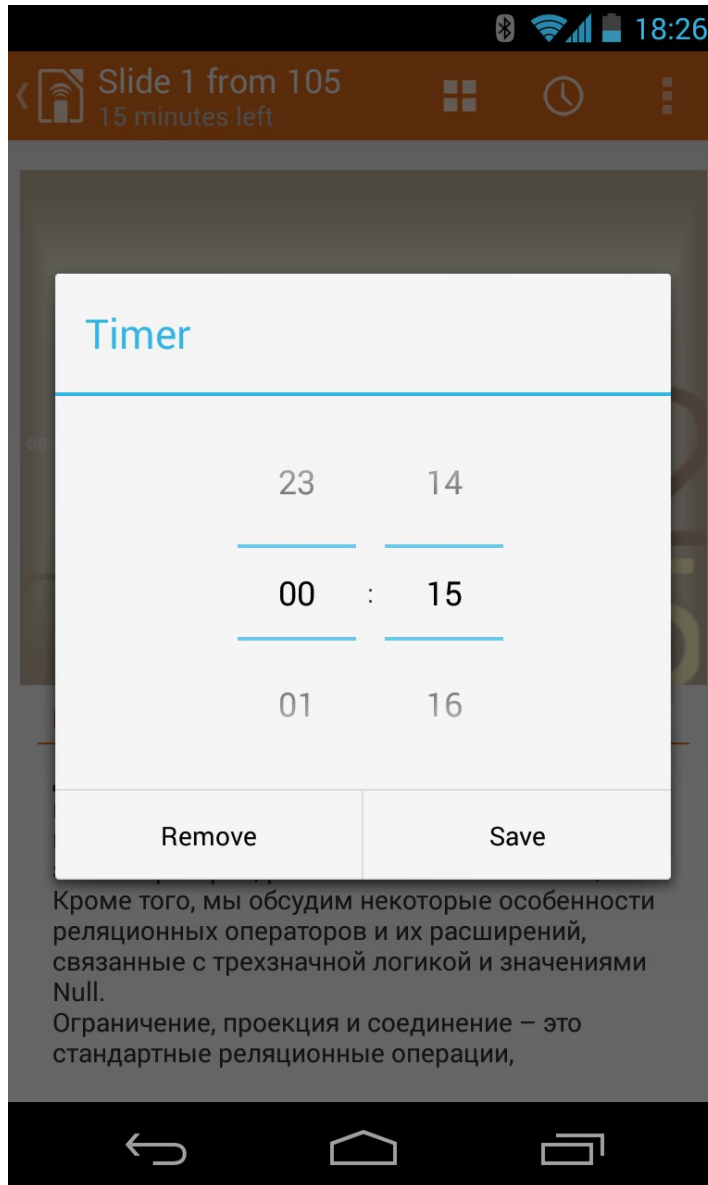
Impress Remote for Android

Problem: performance and out of memory troubles when loading dozens of slides.

Solution: dynamic loading in a separate process.

Impress Remote for Android

Impress Remote for Android

Lessons learned

- Follow guidelines.

- Listen to your users.

- Measure and optimize.

- Think about backward compatibility

Cuong Cao Ngo: Extend support for Document Management Systems

Features

- Connection to Google Drive
- Properties dialog : view and edit properties of remote CMIS files.
- Version dialog : view and compare versions of CMIS files.

Connection to Google Drive through libCmis
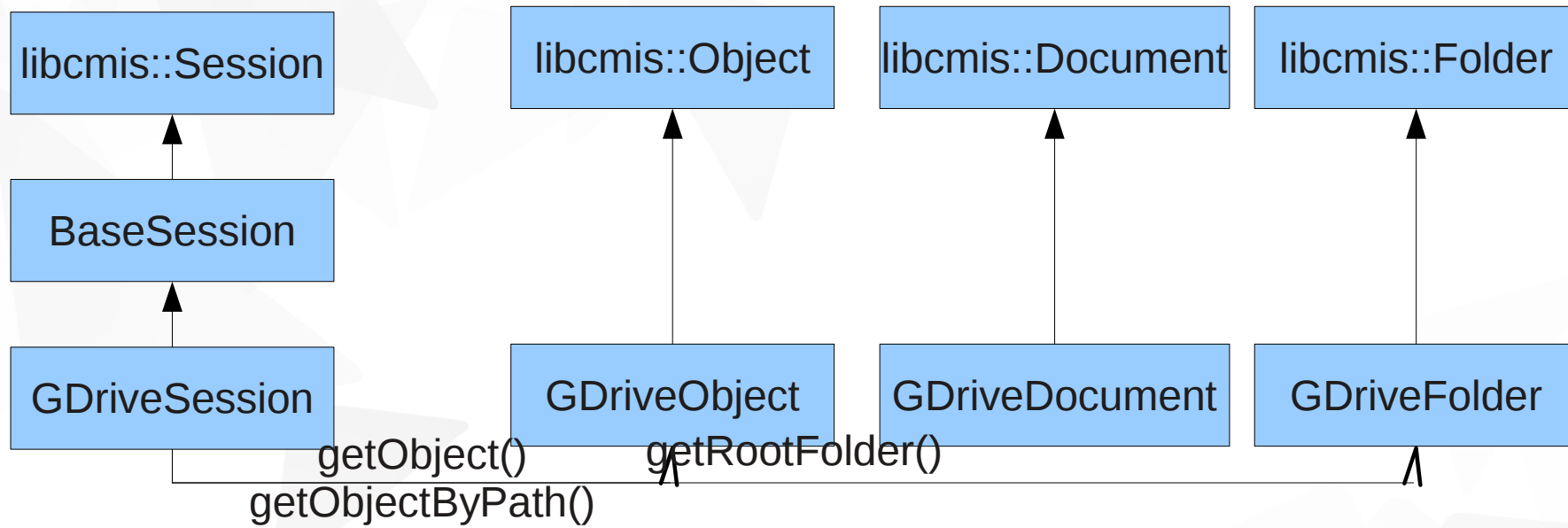
Connection to Google Drive

- Current features in the master branch:
  - Browse Google Drive files
  - Open files.
  - Save files
  - Convert Google file format to ODF format and then convert back.
- Current issues:
  - The file picker can't open files without extension.
  - The file picker UI is not so clean
  - After saving, the new saved content can't be registered (UCB problem).

Connection to Google Drive, screenshot
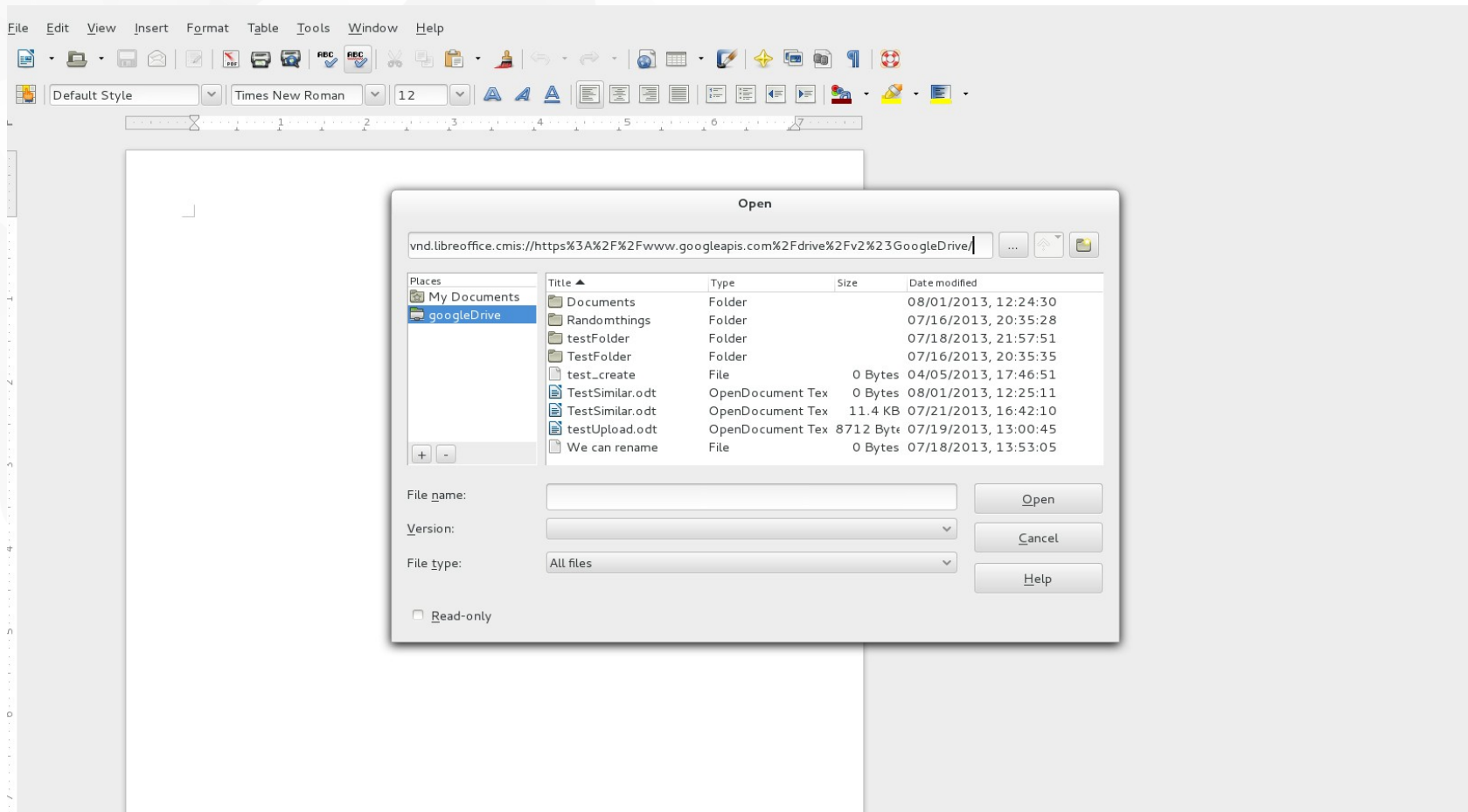
Properties dialog
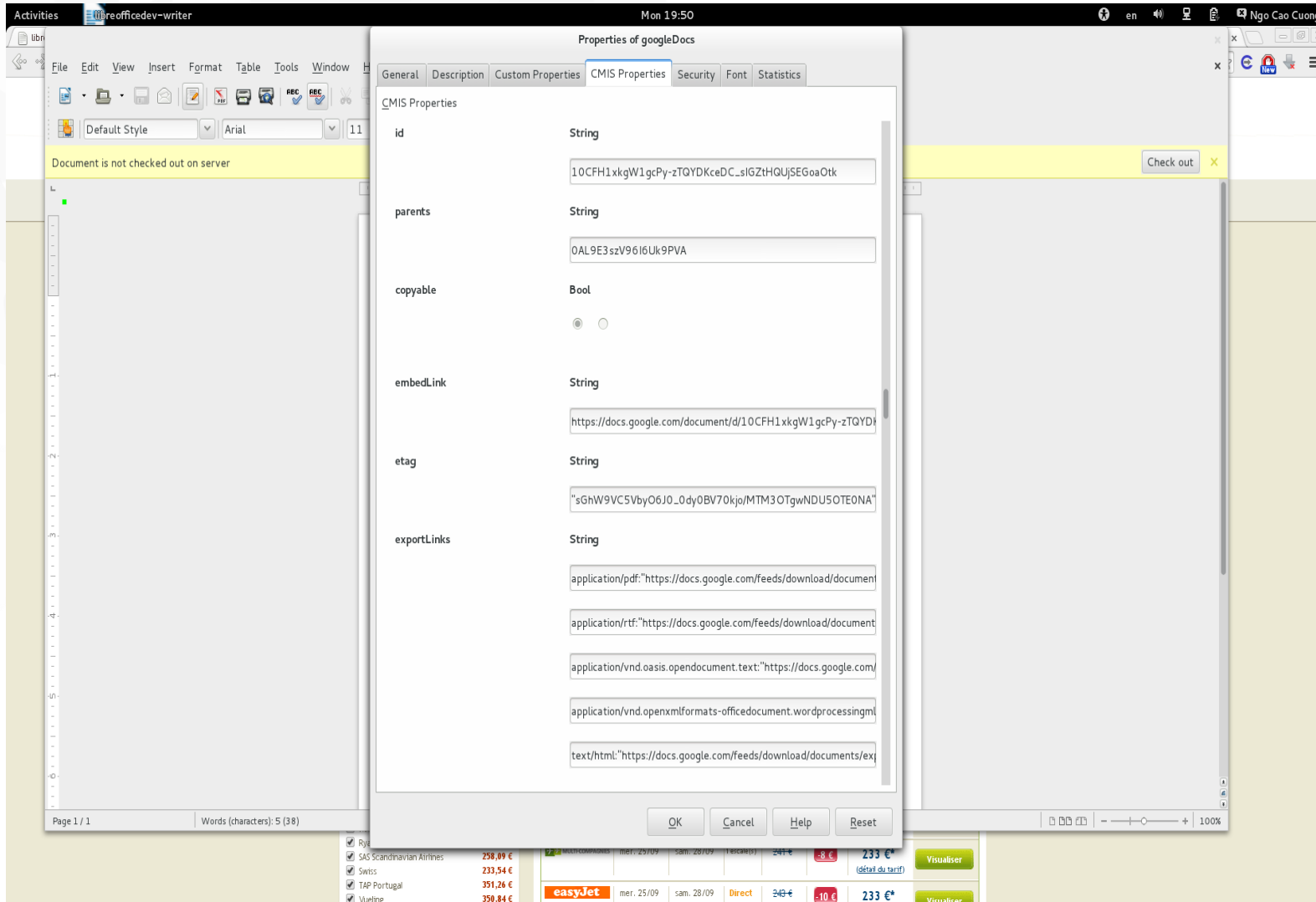
◥ Fetch and edit properties.

◥ Each property can have multiple values.

Version dialog

- In the current master: only the displaying version list is working.
- To be implemented: open and compare different versions.

Efe Gürkan YALAMAN: Implementing an about:config functionality

Introduction

- Important: All of the grammar rules are suspended during my presentation. Be prepared.

- Who am I ?

- Why I participated GSOC ?

We need Expert Config because

- We have a lot of options.(~24.000)

- I don't want to modify xml's.

- Options dialog is complex.

  https://wiki.documentfoundation.org/Design/Whiteboards/Options

Is it done? What the status?

- Yes and no.
- We have a working page . . . :-)
- With annoying performance and design issues. :- I

Further works

- Will continue to work on it.

- Filterbar(search bar), Shrinking labels(?),Moving the page, cleaning unneccessary code, better type handling …

- Thanks for your time.

Nicolae-Alexandru Ivan: Implementing Proper Table Styles in Writer

- The problem:

  The existing table auto-formats are a collection of properties which are to be applied to each cell. Adding/removing cells requires reapplying the auto-format in order for the table to maintain correct overall formatting.

- The solution:

  Implementing proper table style support in Writer. More precisely, the table should have an assigned style, and each operation supported by the table should guarantee that the style properties are still respected after making the relevant changes.

Steps

- Implementing the table style support in Writer model and layout

- Implementing the ODF import/export filter

- Creating an UI for defining/modifying table styles

Current Implementation:

- A class for box properties

- A class for table properties, also containing an array of the above class

- Properties applied directly to the box, paragraph and table

Target:

- Use existing table/row/cell format classes

- Have a chain of formats, so that the properties can be retrieved from the parent(style) if not set in the base format(direct formatting)

So Far

- Current classes completely removed

- All operations concerning tables (apart form saving and loading) take the style into account

- Some work on getting the filters to work on importing/exporting the styles - there are other things that need to be done before working on the actual filters :(

Krisztian Pinter: Use Widget Layout for the Start Center

Introduction

- I'm from Hungary, I study at Eötvös Loránd University.

- Thanks for the LibreOffice team for accepting my proposal.

- Thanks for Kendy and Caolán for putting up with me.

- I hope my contribution is of worth.

The old StartCenter

- Used resources and manual positioning.

- Hard to play around with.

- Bare bones.
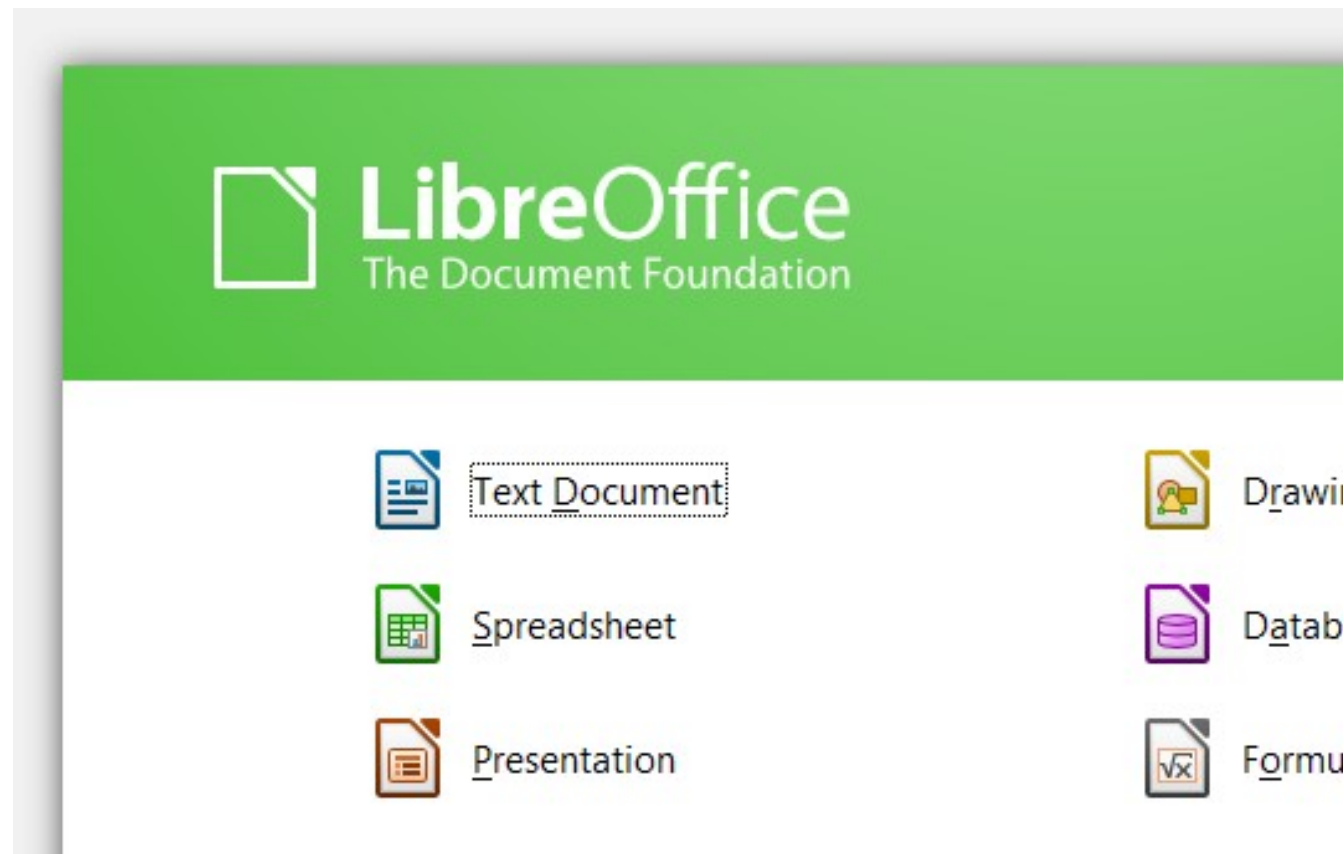
The new StartCenter

- Uses Widget Layout, more modern.

- Easier to play around with.

- More functional.

- The good bits of design are from Mirek. Rest is me.
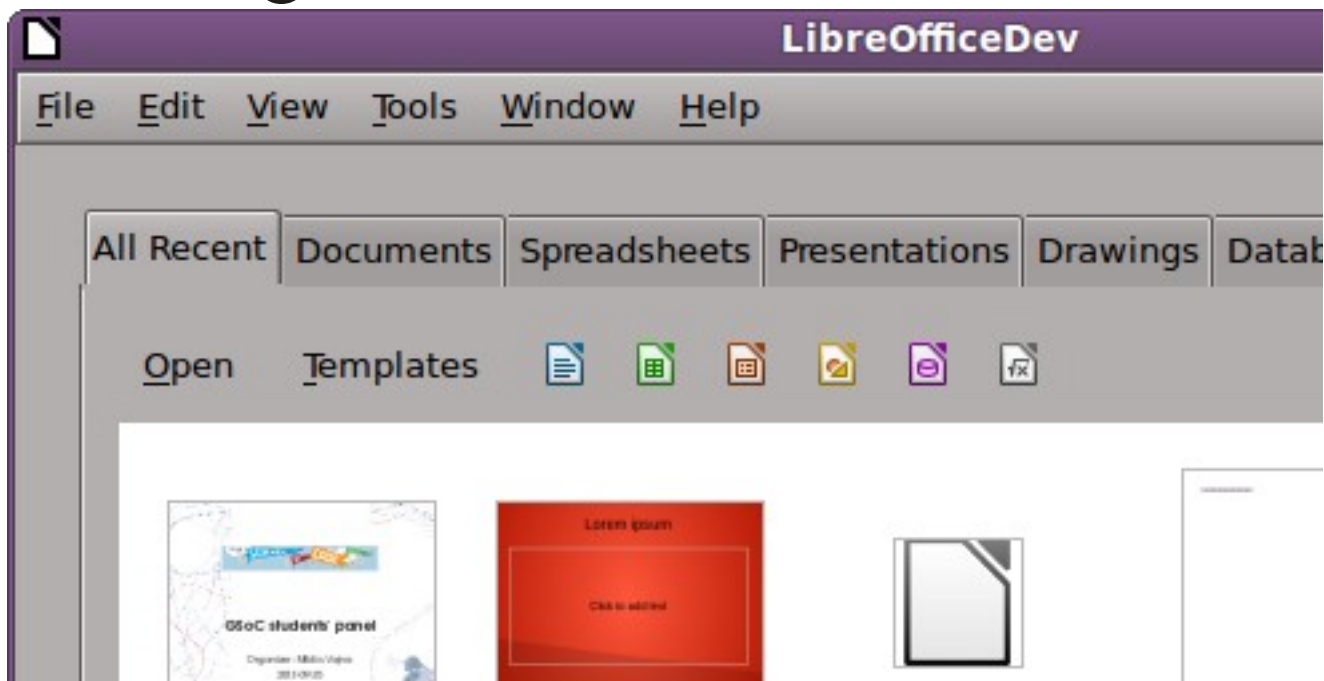
Implementation

- Step 1: Convert the old SC to use the Widget Layout.

- Step 2: Make it better.

- Tried to keep the code simple.

- Performance.

Challenges faced

- LibreOffice code base.

- Circular dependencies.

- Integrating templates.

Minh Ngo

National Technical University of Ukraine «KPI» / Institute for Applied System Analysis

VLC Integration into LibreOffice

Architecture

Libre Office
avmedia

| avmedia win | avmedia GStreamer | avmedia VLC |
| | | VLC Wrapper |

| libvlc |
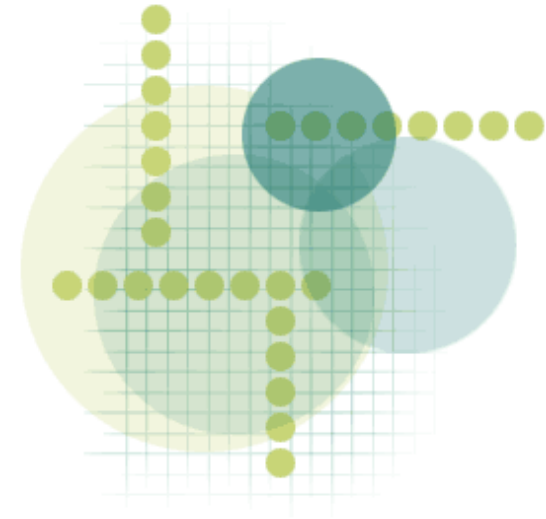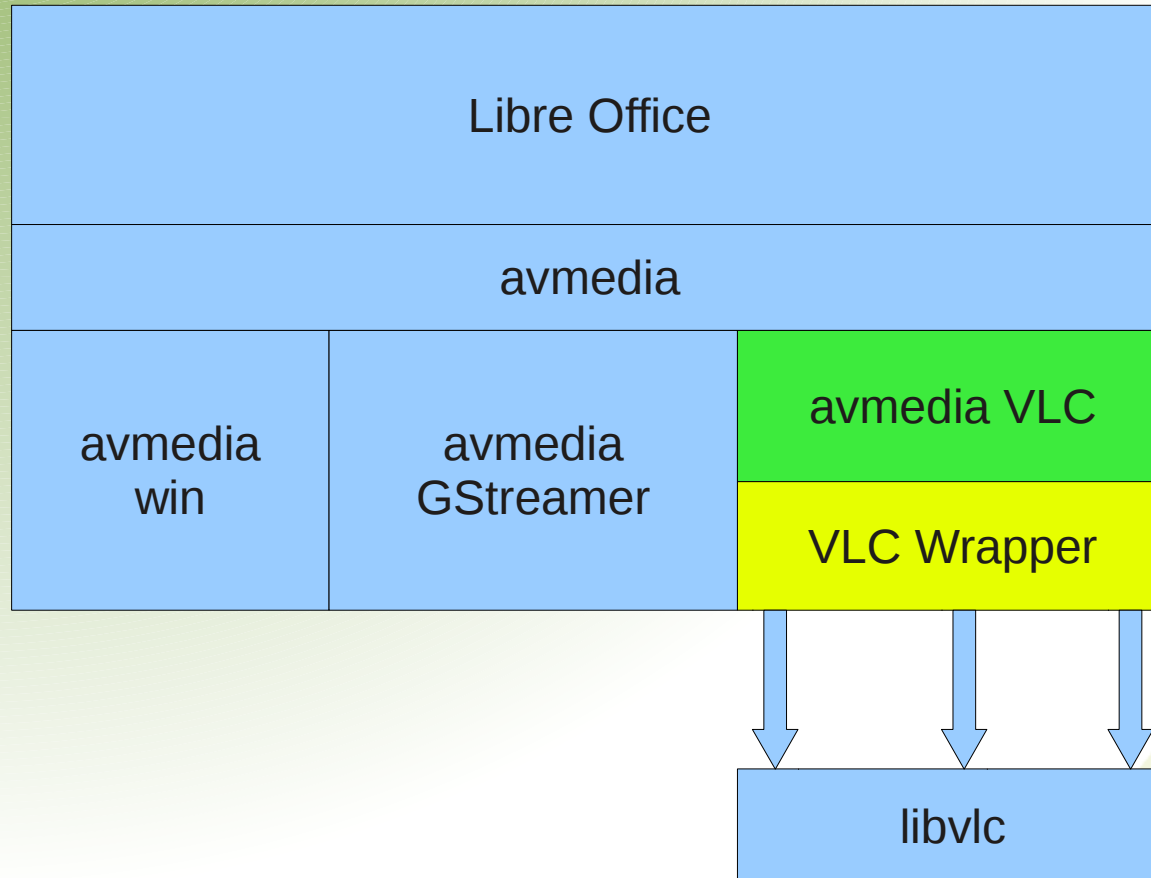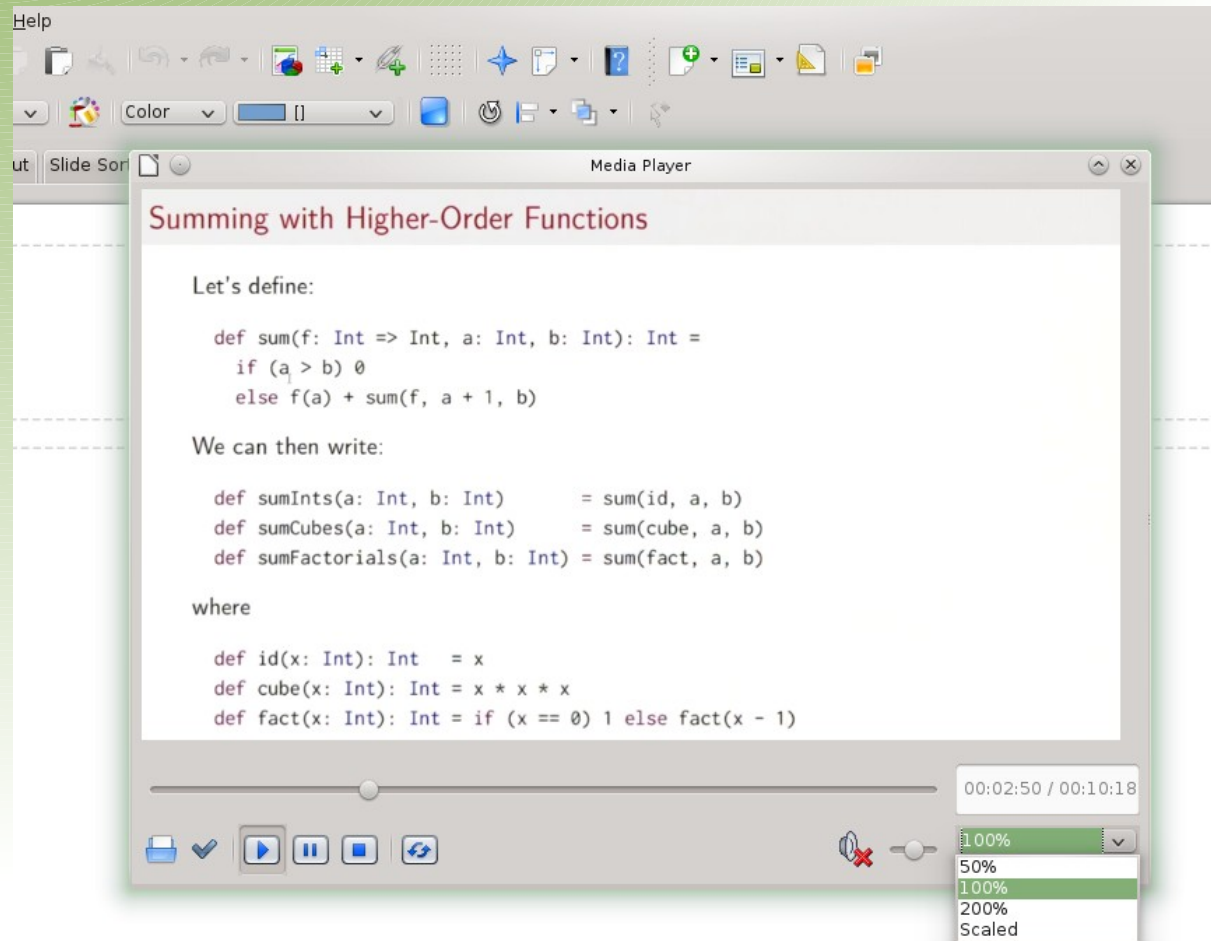
How does it work

What I've done...

… What I've done

LibreOffice

Prashant Pandey: Improve toolbars in LibreOffice
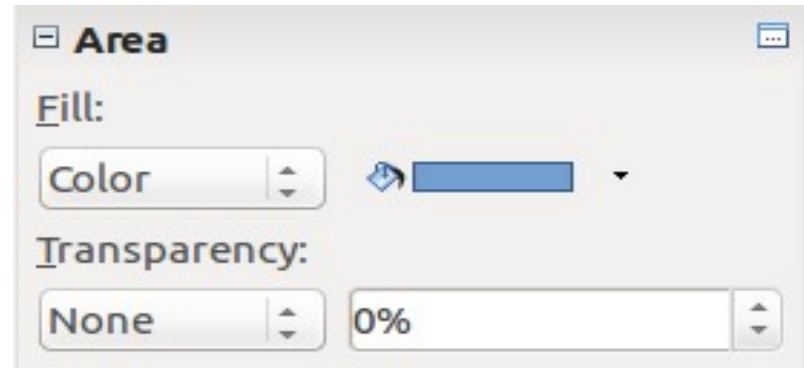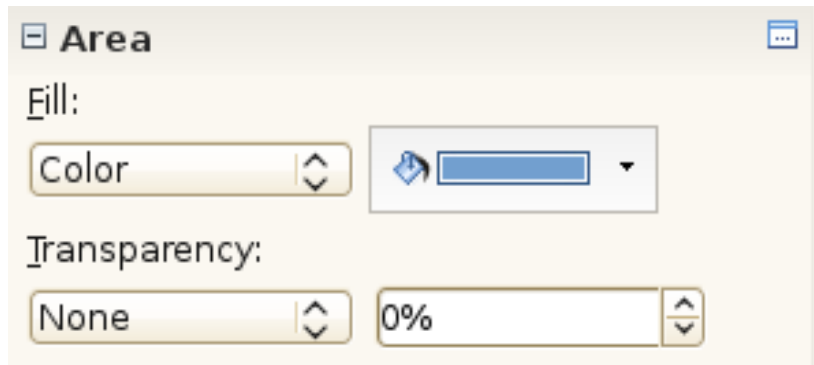
Sidebar-Number-Format
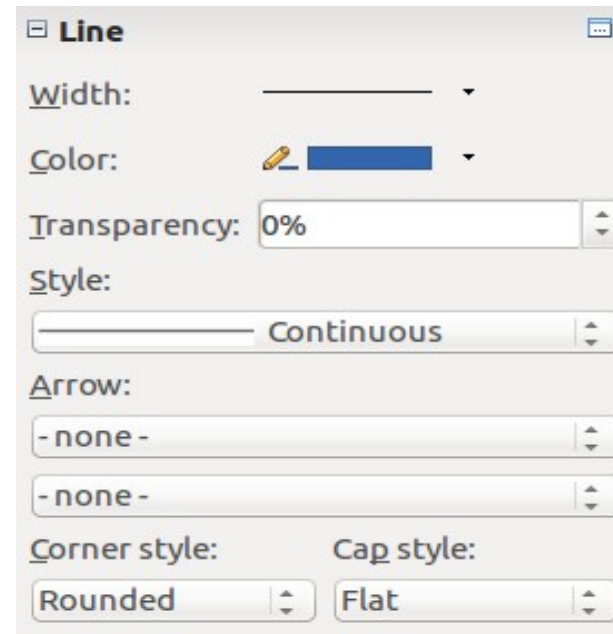
Sidebar-Cell-Appearance
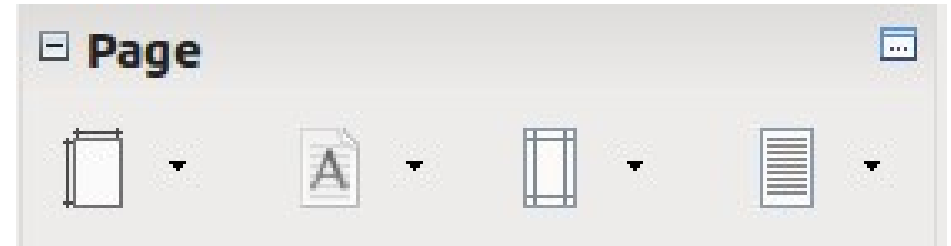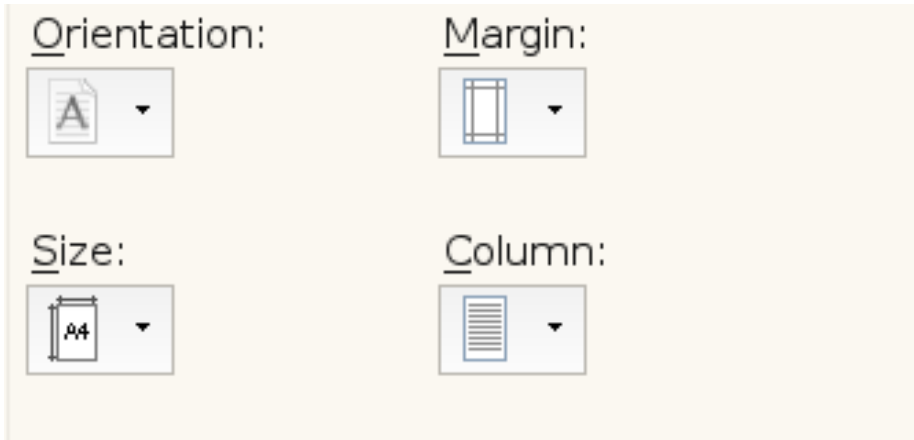
Sidebar-Page

Sidebar-Alignment
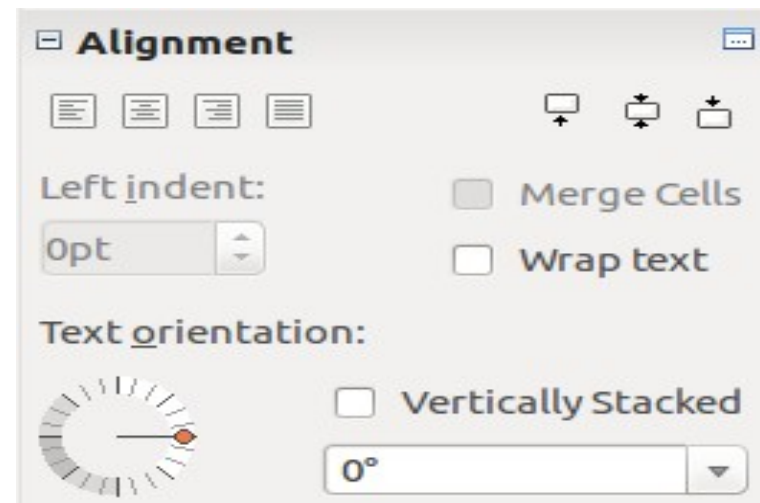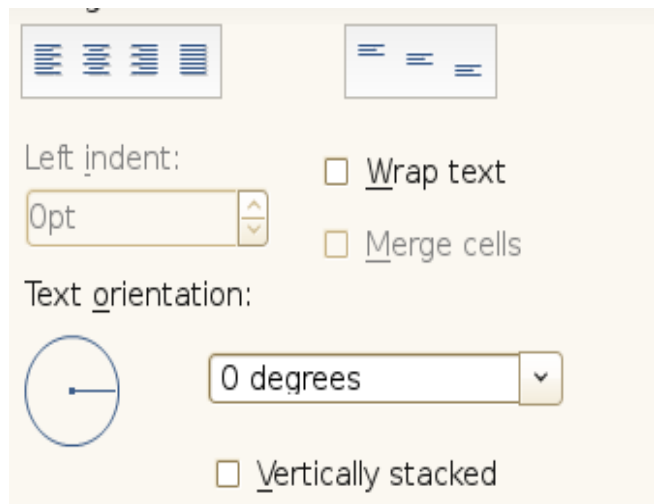
Sidebar-Area

Sidebar-Line
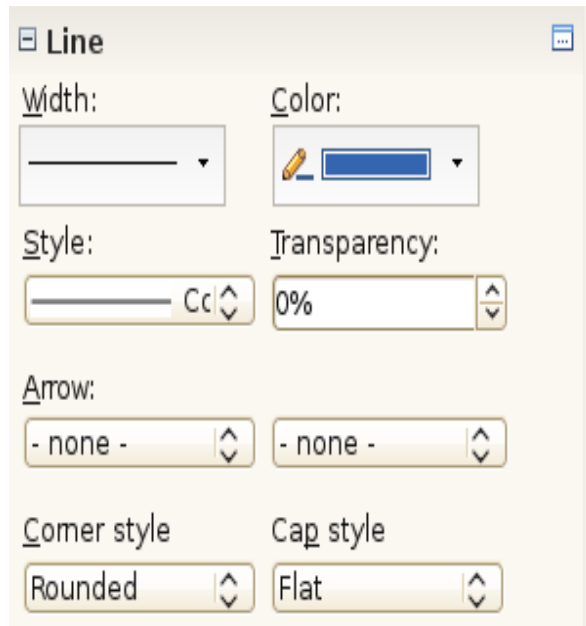
Sidebar-Position-and-Size
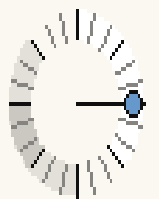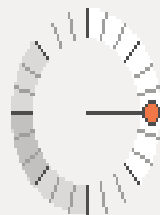
Show Hidden Icons in a Toolbar Row

Suppose any toolbar

On minimizing the window, previous view:
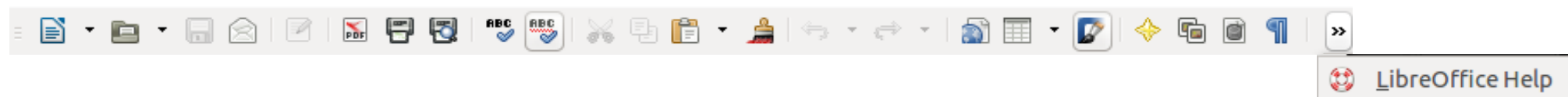
On minimizing the window, current view:
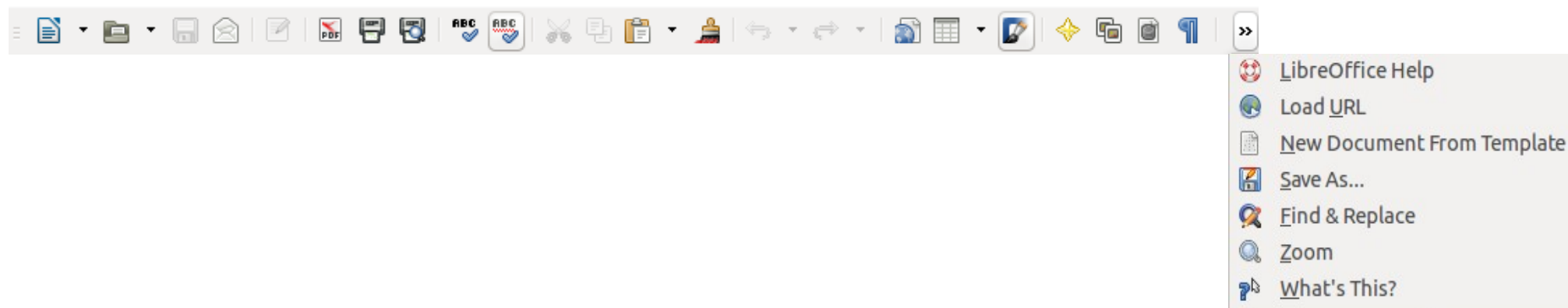
Fixing problem with Sidebar Alignment (i)

Previously:
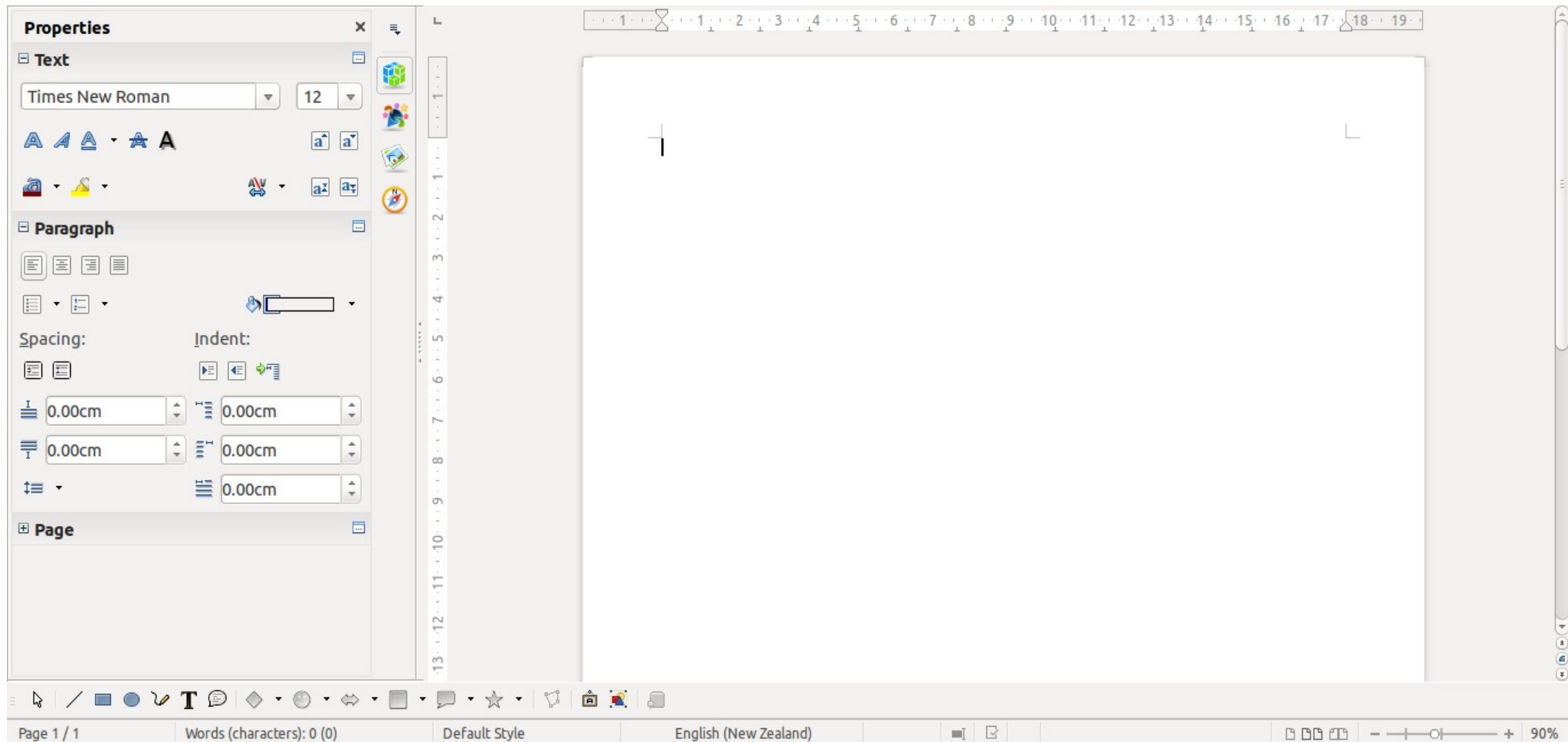
Fixing problem with Sidebar Alignment (ii)

Currently:
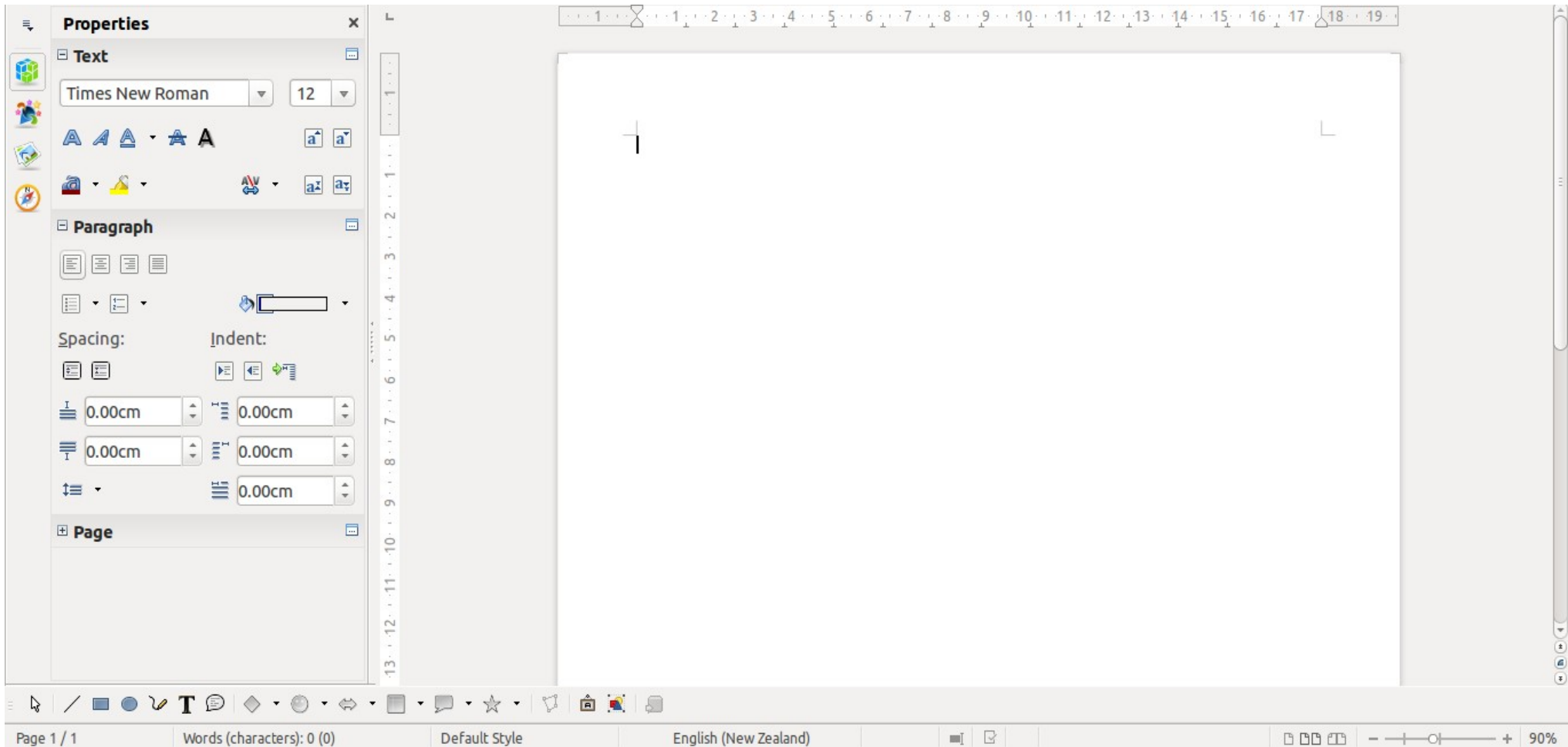
Code Completion in BASIC IDE
by Gergő Mocsi

A LibreOffice Google Summer of Code Project 2013

Mentor: Noel Power
Co-mentor: Andras Timar

LibreOffice
The Document Foundation

Features

- Code completion
- Extended types
- Autoclose parenthesis
- Autoclose double quotes (strings)
- Autoclose procedures
- Autocorrection
- The feature is configurable via a tab page in menu Tools/Options/LibreOffice → Basic IDE Options
- When experimental features are turned off, the whole options page is inaccessible

Code Completion

- It helps the programmer to write the source code
- Here it works on extended types (will be explained later)
- I use the BASIC parser to identify variable declarations
- Behavior: a ListBox appears when pressing the dot after a variable's name (like `"aVar."` [listbox appears]), and if the variable is a UNO interface/struct, its methods and variables are listed
- It uses the `com.sun.star.reflection.CoreReflection` call to get the type's methods
- Nested reflection also works (like `aVar.aMethod1.aMethod2` etc., Listbox will appear for aMethod1 and aMethod2)

About the UI

- It is made up from a ListBox inside a Window
- It is positioned under the current line (or over, if needed)
- There is just only one column, the method/variable name
- Arrow navigation works inside the ListBox, it inserts the selected entry on pressing Enter or on double clicking on it with the mouse
- Esc key dismisses the window
- Also, when typing the method's name, and pressing the Tab key once, it will complete the selected entry, pressing the Tab key again will cycle through the matches with the longest prefix, like: `"aVar.aMeth"` is typed, and will cycle through "aMeth1, aMethod2, aMethod3" entries, other entries are not hidden

Extended types

- The key of autocomplete was to enable usage of UNO interfaces/structs as BASIC variable types

- Example: "`Dim aPicker As com.sun.star.ui.dialogs.XfilePicker`" is a valid variable definition, its methods can be accessed via the "." operator: "`aPicker.getDisplayDirectory()`"

- Identifying of the variable definitions are done by the BASIC parser

- When the dot is pressed, the source file gets parsed, the symbol table saved, and the variable name, scope and type gets extracted

Autoclose parenthesis

- Simple feature: when typing "(", the corresponding ")" gets inserted
- This option can be turned on/off from the Tools/Options menu

Autoclose double quotes

- This feature autocloses the double quote when writing a string
- Example: `str = "aaa` gets autoclosed
- This can be also turned on/off from the Options menu

Autoclose procedures

- This feature also helps code writing
- It autocloses "Sub .. " with "End Sub" and "Function …" with "End Function"
- It can be turned on/off from the Options menu

Autocorrection

- Enabling this feature will autocorrect the defined variable names of all types, not just the new, "extended types"
- Example: "Dim intVar as Integer", and when writing "Intvar", will be corrected to "intVar"
- Keywords are also autocorrected (the list of the keywords is grabbed out from the parser)
- Examples: Integer, String, ReDim, ElseIf, etc.
- Also can be turned on/off from the Options menu

LibreOffice
The Document Foundation

Basic IDE Options page

fice-writer   Sat Sep 21, 18:34 en

Untitled 1 – LibreOffice Writer

Options – LibreOffice – Basic IDE Options

- LibreOffice
  - User Data
  - General
  - Memory
  - View
  - Print
  - Paths
  - Colors
  - Fonts
  - Security
  - Personalization
  - Appearance
  - Accessibility
  - Advanced
  - **Basic IDE Options**
- ⊞ Load/Save
- ⊞ Language Settings
- ⊞ LibreOffice Writer
- ⊞ LibreOffice Writer/Web
- ⊞ LibreOffice Base
- ⊞ Charts
- ⊞ Internet

Code Completition

☐ Enable Code Completition

Code Suggestion

☐ Autocorrection

☐ Autoclose Quotes

☐ Autoclose Parenthesis

☐ Autoclose Procedures

Language Features

☐ Use extended types

ListBox in action

Vishv Brahmbhatt: Slide Layout Extendibility

Slide Layout's Work

- ## Debugging
  - ### Issues:
    - HardCoded PlaceHolder Objects.
    - Unable to store the modified properties of PlaceHolder Objects in Slide Layout.
    - Creation of new Placeholder object required duplication of current objects.

Slide Layout's Work:Continued

- Solutions
    - Parsing placeholder objects from XML file.
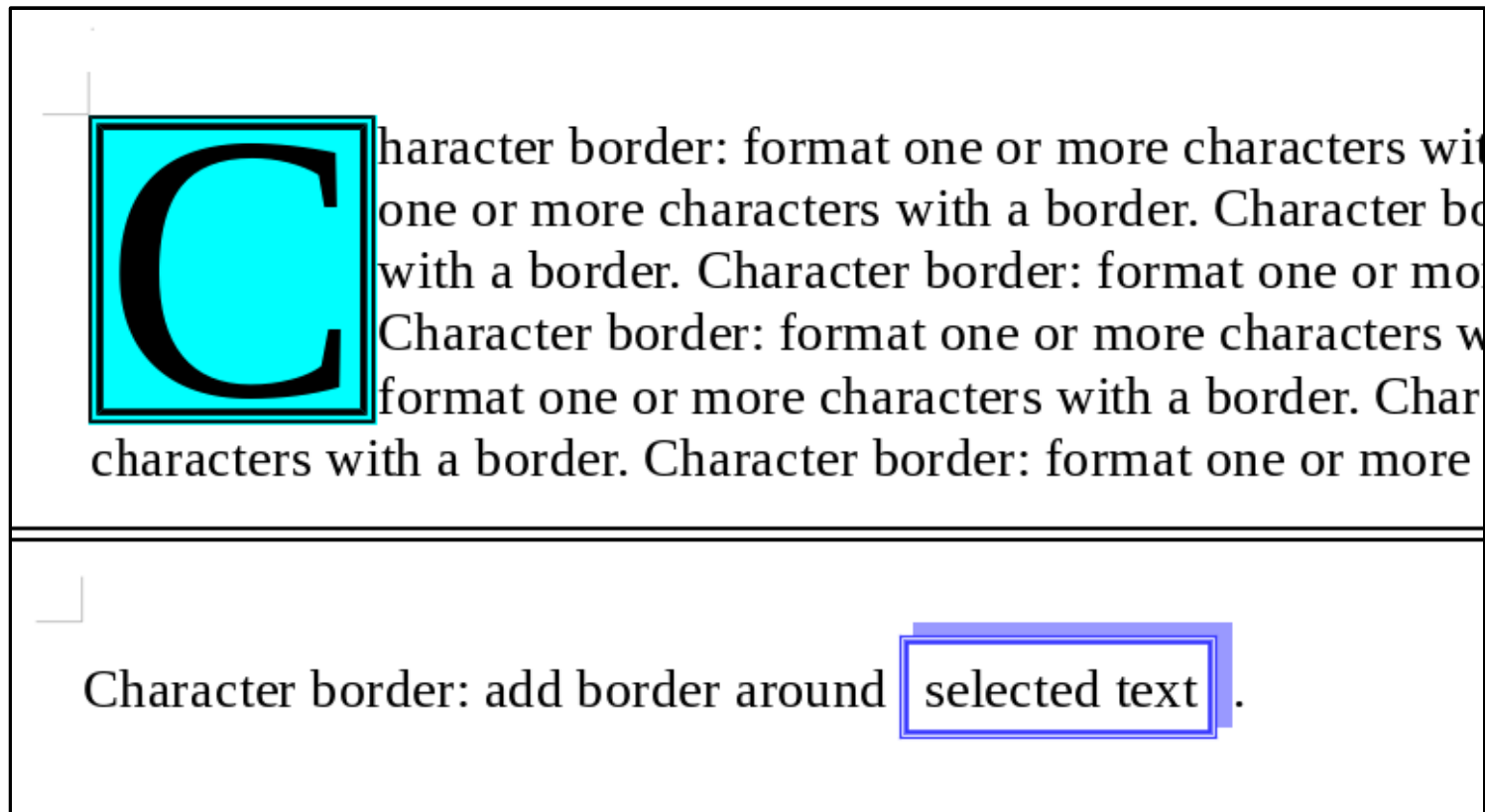   - Parsing master presentation objects from XML file.

Future Plans

- Solutions
  - Storing mechanism.
  - User Interface.

Tamás Zolnai: Writer: Border around characters

What does character border means?
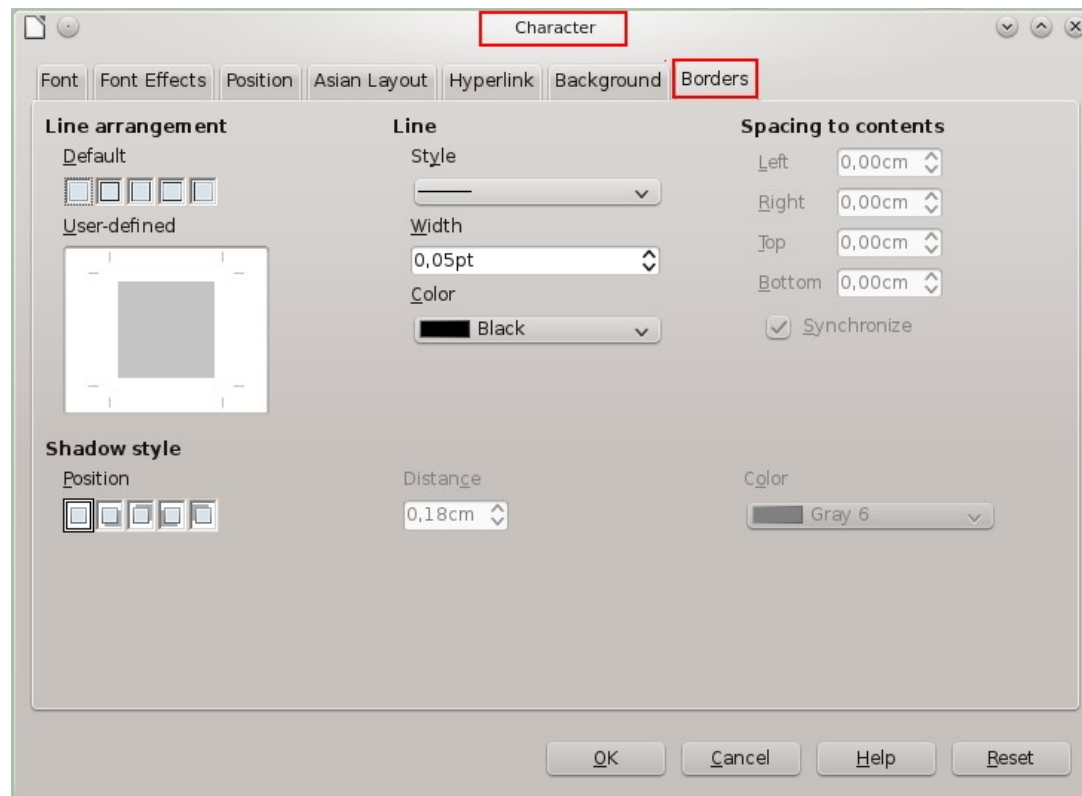
- Border around one or some characters

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What does character border means?

- Borders in Writer

  - Table, frame, page, paragraph and character

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Why is character border important?

- Users need

  - LO bugzilla:
    https://bugs.freedesktop.org/show_bug.cgi?id=35155

  - AOO bugzilla:

    https://issues.apache.org/ooo/show_bug.cgi?id=17930

- MS Word interoperability

- Consistency

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Border merge

- If two text ranges' all border properties is equal then they will be rendered within one border.

- Why merge?

    - Both implementation of character attributes and the ODF format specification make it necessary

    - MS Word works on the same way. File formats also specify border merge.

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Border merge

- Note: Border merge also imply background merge which means the whole border group will have one coherent background .
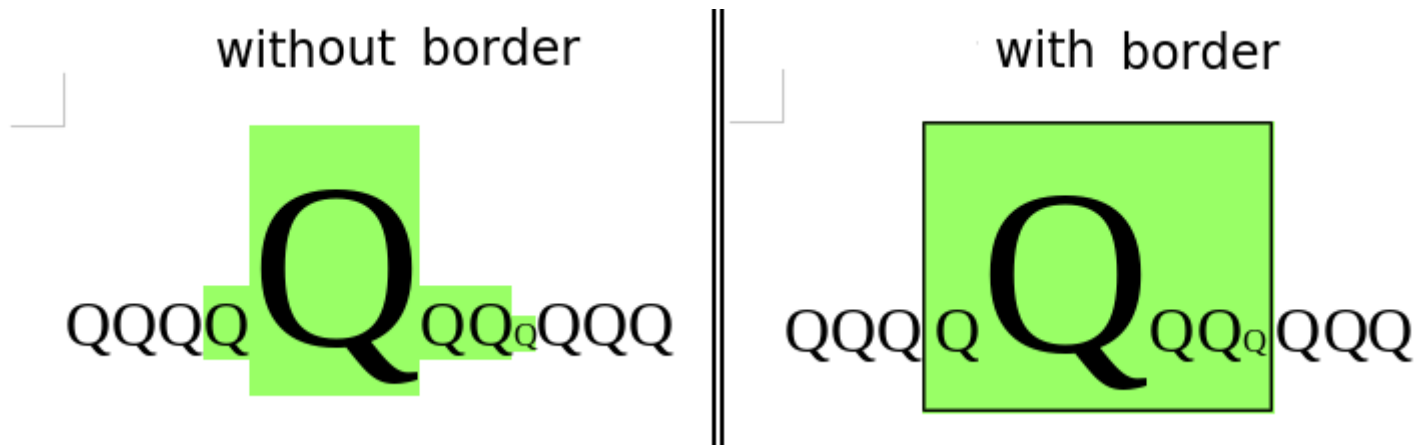
Filters, file formats

- ODF

    - Open standard → OASIS proposal

    - Extend text properties with border attributes: fo:border, style:border-line-width, fo:padding and style:shadow

- HTML (CSS1)

    - Inline-block inside span

    - No shadow (CSS3:box-shadow)

    - Difficulties with border merge

- MS formats (DOC, DOCX, RTF)

    - Some data loss (shadow, padding in case of DOC)

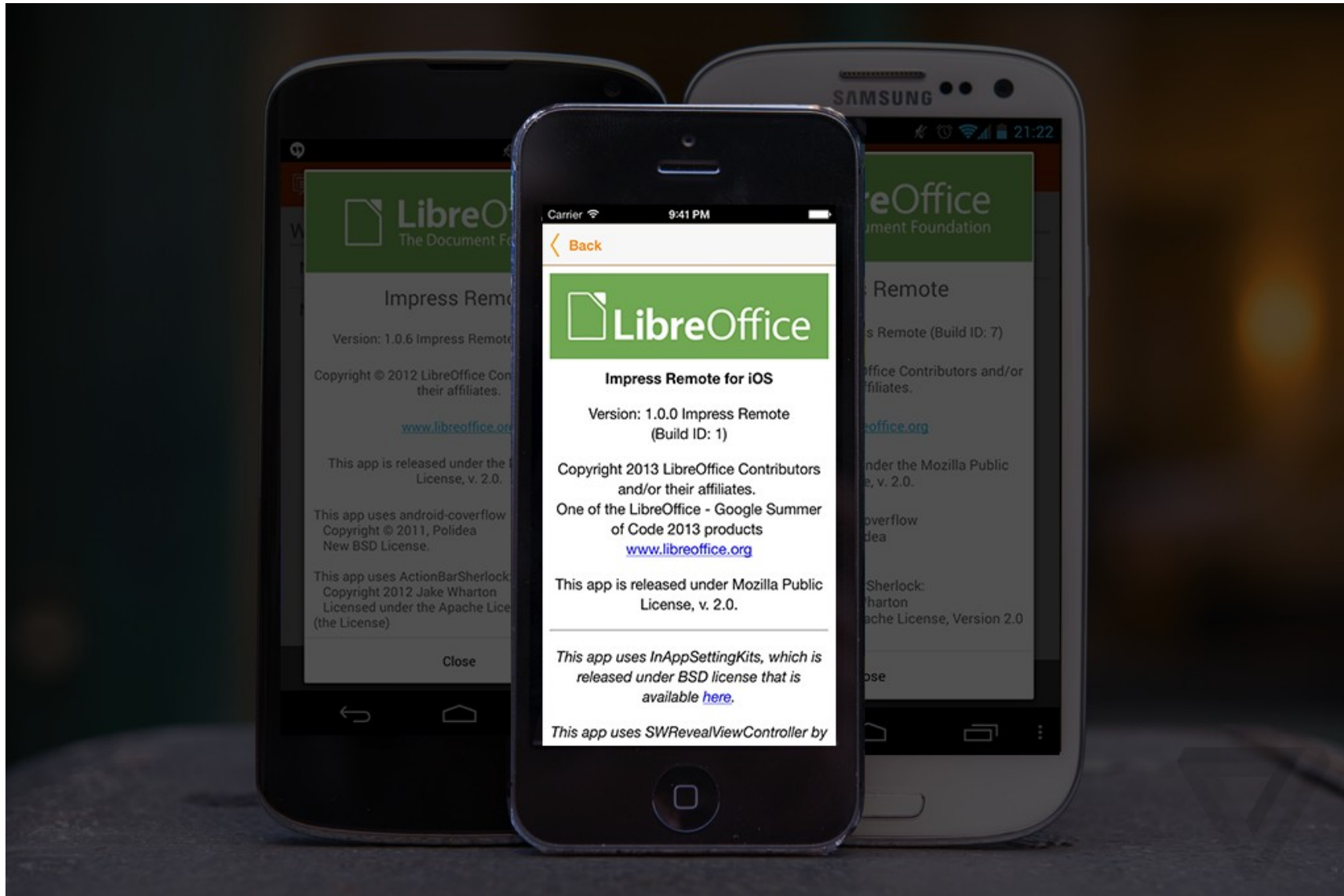   - All MS filters work similar only the actual border structure differ

Thank you for your attention!

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LIU Siqi: Impress Remote Control for iOS

Why this project?

What it does?

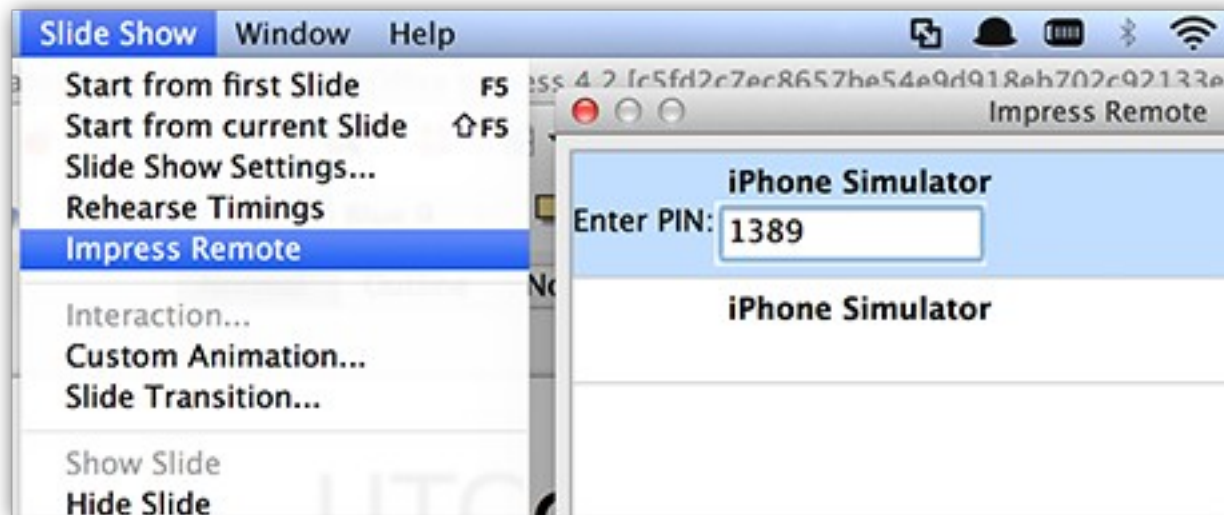|	Presentation Pointer	iOS Remote Control
Next/Previous Slide	Yes	Yes
Lecturer's notes	No	Yes
Jump to Slide #	No	Yes
Count Down Timer	No	Yes
Stopwatch	Maybe	Yes
Vibration Alert	No	Yes
Laser Pointer	Yes	Yes!!

How it works?

Zeroconf Implementation:
Bonjour for Windows/OSX
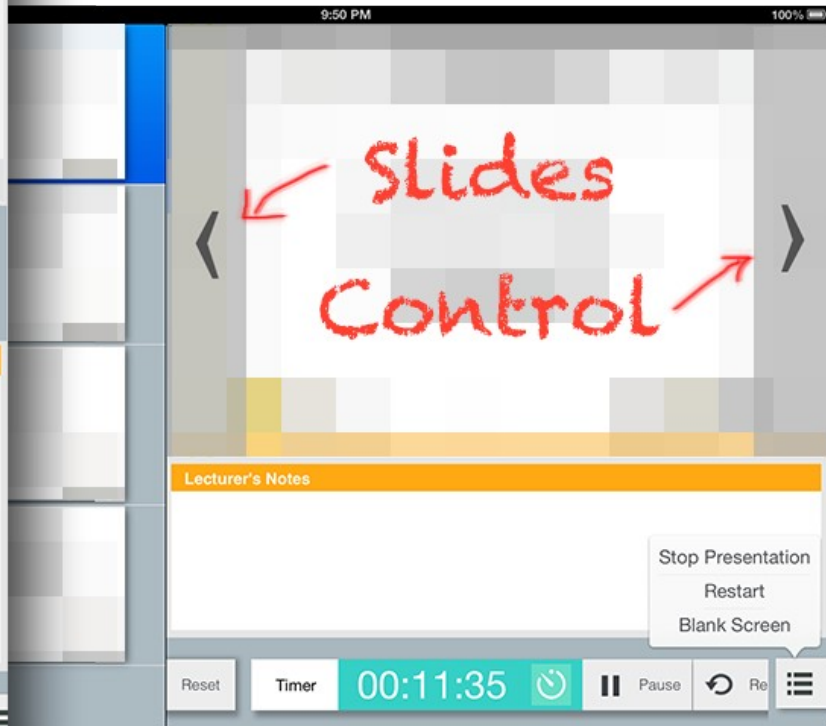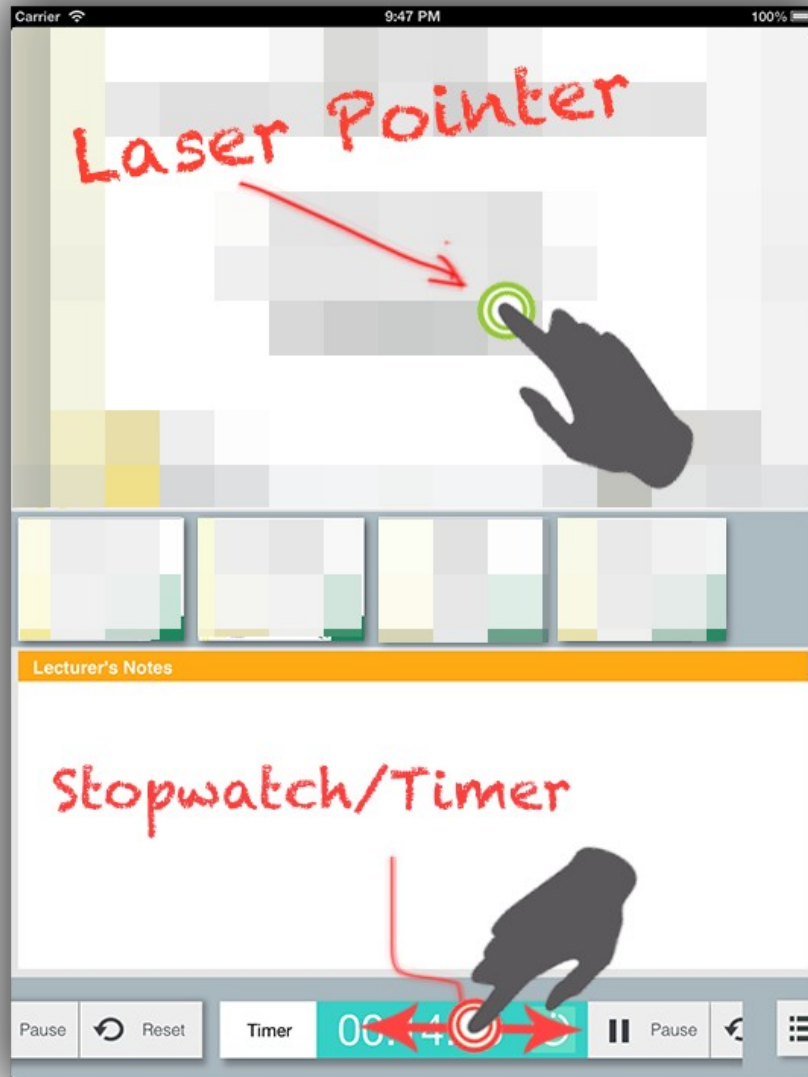**Avahi for Linux**

How it works?

4-digit Pin Code

How it works?

Special thanks to...

- Tor Lillqvist, for his mentoring and help

- The Great LibreOffice Community!