Build-in "xray" like UNO object inspector

By Tomaž Vajngerl

Collabora
Productivity

UNO Object Inspector

UNO Object Inspector

Best known object inspector – Xray tool

- Also popular EMR
- A simple one serves as a code example in ODK (Office Development Kit)

- Traverse the UNO object tree

- Used for inspecting the UNO Objects

- Properties (types and values)
- Methods
- Interfaces
- Supported types

Xray tool

Xray tool

- Extensions for LibreOffice

- Users need to find it separately

  - They may not even be aware of its existance

- Need to run a macro with object as an parameter

  - `Xray ThisComponent`

  - ```
    Document = ThisComponent
    AllSheets = Document.getSheets()
    MySheet = AllSheets.getByIndex(0)
    Xray MySheet
    ```

- We can do better than this

Tender for implementing support for a dedicated, built-in UNO object inspection tool in LibreOffice

https://blog.documentfoundation.org/blog/2020/07/27/tender-for-implementing-support-for-a-dedicated-built-in-uno-object-inspection-tool-in-libreoffice-202007-02/

Thanks to TDF to make the work of this tool possible

https://blog.documentfoundation.org/blog/2020/07/27/tender-for-implementing-support-for-a-dedicated-built-in-uno-object-inspection-tool-in-libreoffice-202007-02/

The idea

DevTools - Idea

- Built-in LibreOffice

- Dockable window on the bottom

- Similar to developer tools in popular browsers

- 2 trees – left-hand side and right-hand side

  - Left-hand side – tree view with a subset of the DOM (document object model)

  - Right-hand side – tree view with an object inspector

- Point & Click functionality

DevTools – left-hand side: DOM tree view

- Shows a small subset of the DOM

- Shows objects that the user is most likely interested in.

    - This is easier for the (new) users to understand the DOM and navigate it.

    - Specifics object can still be accessed in the object inspector

- Selecting an objects in the tree shows the object in the object inspector

DevTools – right-hand side: DOM tree view

- Similar to the Watch window in macro editor

- Shows available properties, methods, interfaces of an object.

  - + types and current values

- It is possible to inspect recursively the objects

- Supports looking into collections and arrays

- Special handling of certain types

  - For example dates shown depending on the locale.

Watch:	TransferDataFlavors	👁✕	
Variable		**Value**	**Type**
▶ CurrentSelection			SwXTextRanges
▶ Controllers			Object
▶ AvailableViewControllerNa			String(0 to 1)
— Modified			Boolean
▶ Printer			Object(0 to 7)
— Location		"file:///home/quikee/D	String
▶ LibraryContainer			Object
▶ ViewData			IndexedPropertyValuesContainer
▶ TransferDataFlavors			Object(0 to 7)
▶ DocumentSubStoragesNam			String(0 to 1)
▶ DocumentStorage			Object
▶ ScriptProvider			com.sun.star.script.provider.MasterScriptProvider
▶ UIConfigurationManager			com.sun.star.comp.framework.UIConfigurationManager
— Identifier		"com.sun.star.text.Tex	String
— Title		"Blog.odt"	String
— UntitledPrefix		" : "	String
▶ Types			Object(0 to 76)
▶ ImplementationId			Integer(0 to -1)
▶ Text			SwXBodyText
▶ LineNumberingProperties			SwXLineNumberingProperties
▶ ChapterNumberingRules			SwXChapterNumbering
▶ NumberingRules			Object
▶ Footnotes			SwXFootnotes
▶ FootnoteSettings			SwXFootnoteProperties
▶ Endnotes			SwXFootnotes
▶ EndnoteSettings			SwXEndnoteProperties
▶ PagePrintSettings			Object(0 to 8)

DevTools idea – point & click object inspection

- Click on the document and show the related UNO object
  in the object inspector

- Can be cursor position or selection

- Orthogonal functionality to the DOM tree view

Current state

Current state

- Currently can be enabled in the menu under Help / Development tool

- Location and name can still be changed
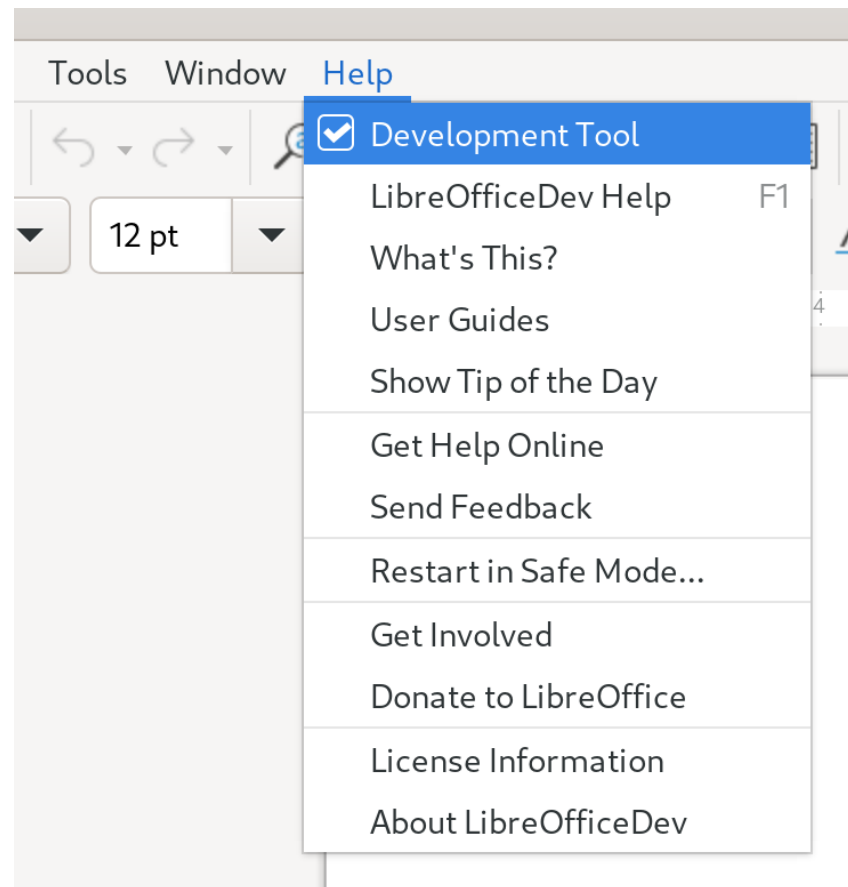
Current state

- Implemented

  - DOM tree view (left-hand side)

- Current work in progress

  - Point & click

    - Needs additional tuning

  - Document inspector (right-hand side)
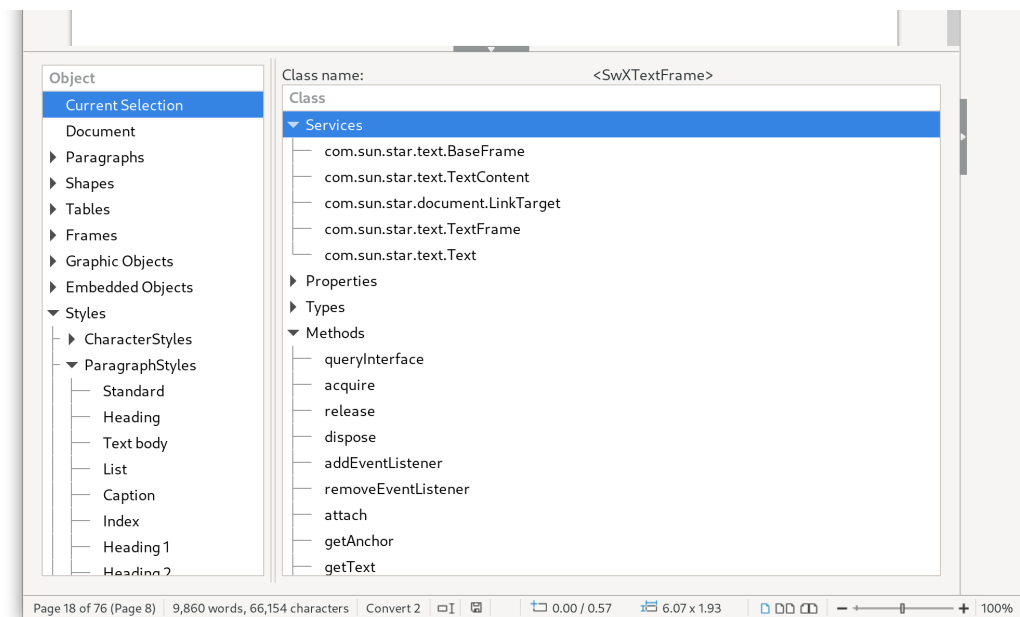
Current state – DOM tree view (left-hand side)

- Added UNO objects

  - Writer: Paragraph, Shapes, Tables, Frames, Graphic Objects, Embedded Objects, Styles Families and Styles

  - Calc: Sheet, Shapes (per sheet), Charts (per sheet), Pivot Tables (per sheet), Styles Families and Styles

  - Draw / Impress: Pages / Slides, Shapes (per page / slide), Master Slides, Styles Families and Styles
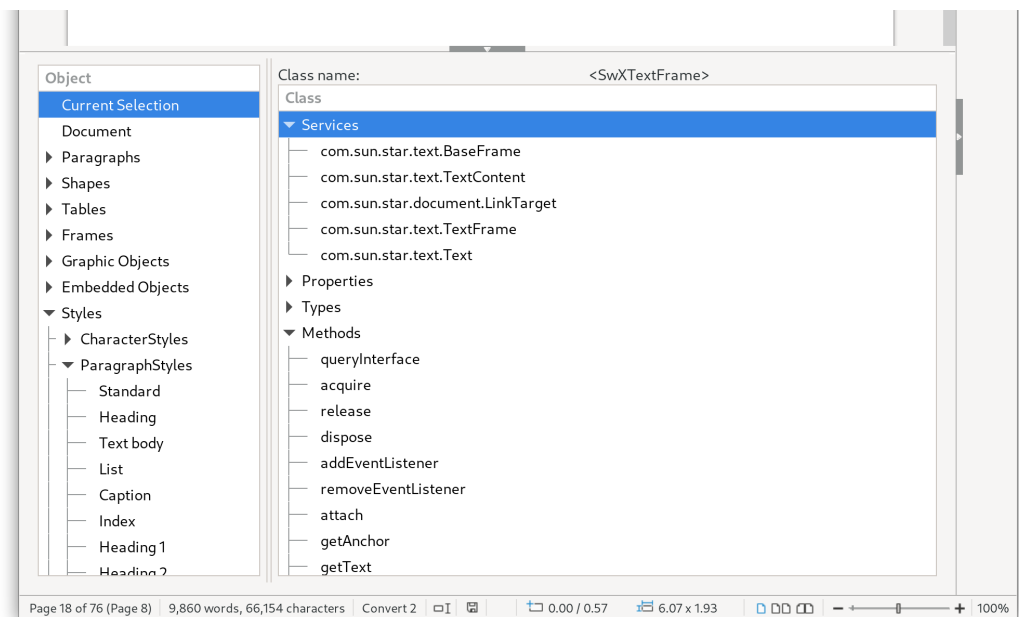
WIP – object inspector (right-hand side)

- Shows Implementation name

- List of interfaces, properties, types, methods

- Should be using the same code as Watch window

  - If this is possible

- Doesn't yet show values and types

- UI needs working, maybe only one list view is not enough
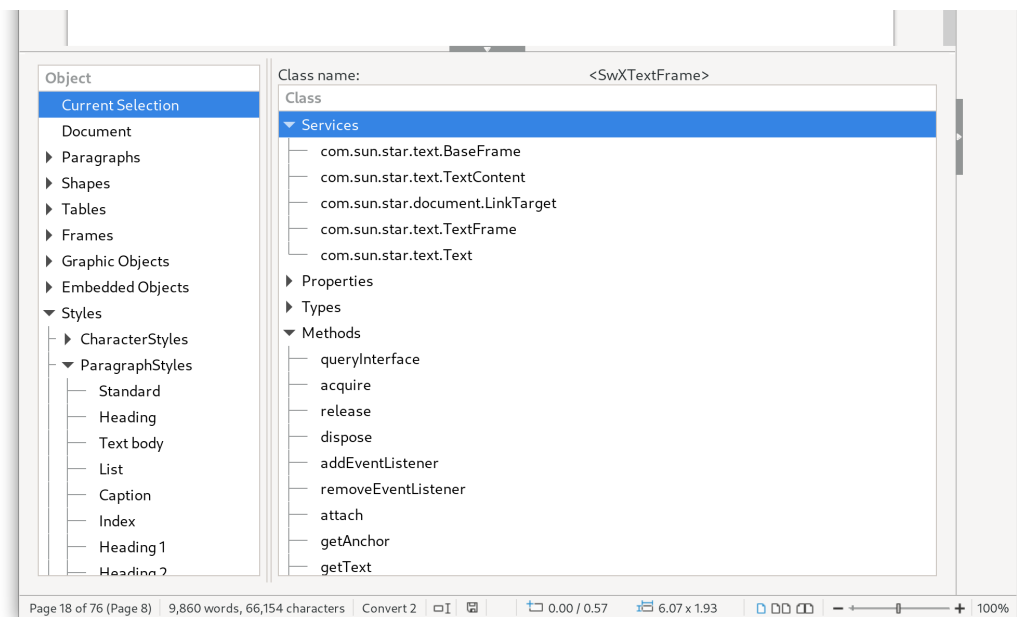
WIP – point & click

- Listens to the selection change

- Fills the current selected object into "Current Selection"

- When selected it is shown in the object inspector
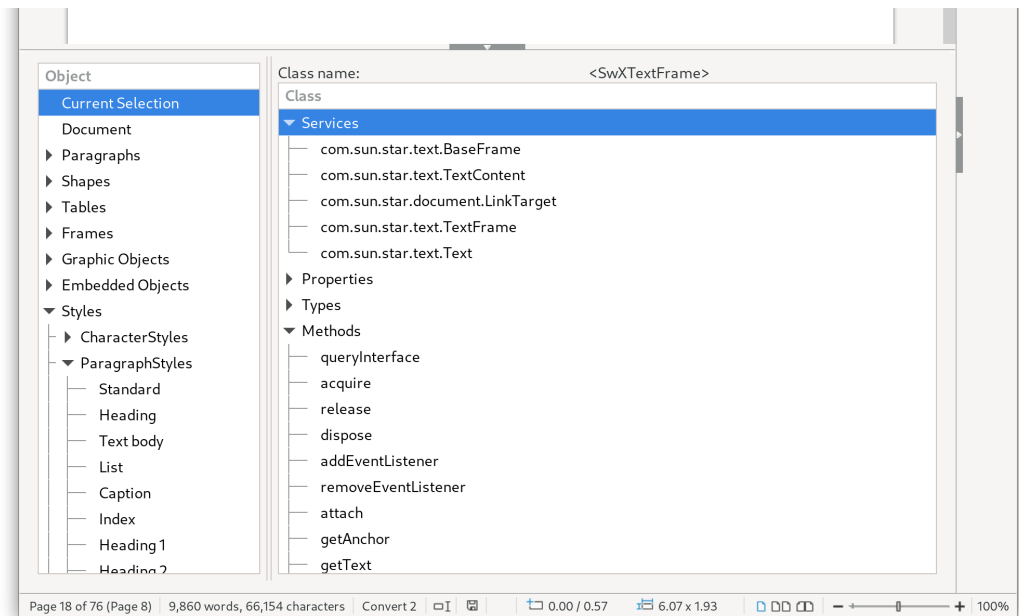
Demo

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Thanks for listening!

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