Content controls in Writer

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About Miklos

- From Hungary
  - More details: https://www.collaboraoffice.com/about-us/
- Google Summer of Code 2010 / 2011
  - Rewrite of the Writer RTF import/export
- Then a full-time LibreOffice developer for SUSE
- Now a contractor at Collabora
Content controls in Writer
(Rich text) content controls

Like an input field, but can have rich content

- Similar to inline SDT in Word
- Can cover multiple text portions, but not paragraphs (unlike fieldmarks)
- Support nesting
- Have a set of properties on them (no field instruction / result)
  - Is the current content a placeholder?

Tell us some information about yourself. Your name: John Smith
Check box

Constrain: toggle between two characters

- Toggle the state on pressing space / click, otherwise read-only
- Usable defaults for the two characters
Drop-down list box

List of items, select one

- One item is a pair of value and display text
- No free-form user input

Favorite color: Choose an item

red
green
blue
Picture

Placeholder bitmap, already formatted for you

- Replace with real content on click
Date

Date picker popup when filling in

- Can specify a language
- Can specify a date format
Plain text

Enforce consistent character properties

- Really similar to input field
- UI expands formatting range to content control start/end if needed
Combo box

Similar to drop-down

• But do accept free-form user input
How are these implemented?
Document model

It’s just a meta-like text attribute

- **SwContentControl** hosts the actual properties
- **SwFormatContentControl** is the pool item that you can insert to the doc model
- **SwTextContentControl** is the text attribute that can track the start/end of the content control
- Dummy character at the start and end, so the user can specify if they want to type inside or outside
  - Also this way no two content controls start/end at the same position
  - No ordering problems (vs e.g. bookmarks)
UNO API

Wrapper for the content control and its text

- SwXContentControl is a text content (you can insert it)
  - It’s also an enumeration (of its text portions)
  - A whole XText (like header/footer)
  - Has various properties
- SwXContentControl::Impl stores the properties, that way the solar mutex is locked while it’s deleted
- SwXContentControlText is the actual SwXText subclass
Layout / rendering

Border, shading, popups

- SwContentControlPortion is the SwTextPortion subclass, handles shading
- Border is similar to input fields, a drawinglayer overlay
- Popups: SwContentControlButton is the Control subclass
  - SwDropDownContentControlButton handles drop-down/combo box
  - SwDateContentControlButton handles dates
Filters

- DOCX: most inline SDT types are now mapped to content controls
  - Builds on top of previous data binding work by Vasily Melenchuk, see the next talk!
  - Reading from / writing to data binding is unchanged by the content control work
- ODT: new schema extension to represent these
- PDF export maps these to fillable forms
Insert/modify/delete UI

- Insertion: new sub-menu under Form → Content controls
- Modify: content control properties dialog:
  - Placeholder checkbox for all types
  - Checkbox and date format has their own conditional section
  - List items have their own sub-dialog
- Deletion: happens when both dummy characters are selected and deleted
Testing

Quite invasive change, affecting all layers of Writer

- desktop: LOK API tests
- libreofficekit: gtktiledviewer bits for manual testing without online.git
- sw:
  - Cursor tests
  - Doc model tests
  - Layout tests
  - Tiled rendering tests
  - UNO API tests
  - DOCX filter tests
  - PDF export tests
  - DOC export test to make sure plain text is still exported
  - UI shell tests
  - UI test in Python
- writerfilter: DOCX import tests
- xmllof: ODT filter tests
Documentation

Technical and end-user

- ODF proposal
- UNO API documentation
- Help pages
Thanks

Collabora is an open source consulting and product company

- What we do and share with the community has to be paid by someone
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Summary

Content controls are a new way to create fillable forms in Writer

• Maps to Word’s primary way of form creation (since 2007): structured document tags
• ODF can now represent these
• Exports to PDF
• Various types: rich text, checkbox, drop-down, picture, date, plain text, combo box