



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?

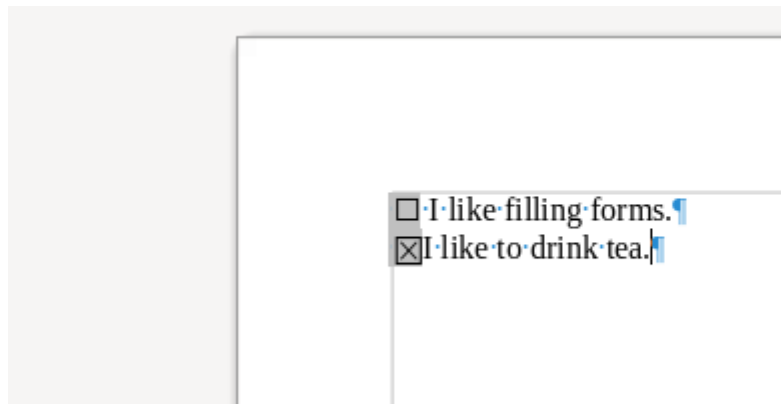
Tell us some information about yourself. Your name: **This is a larger font** John

Smith

Check box

Constrain: toggle between two characters

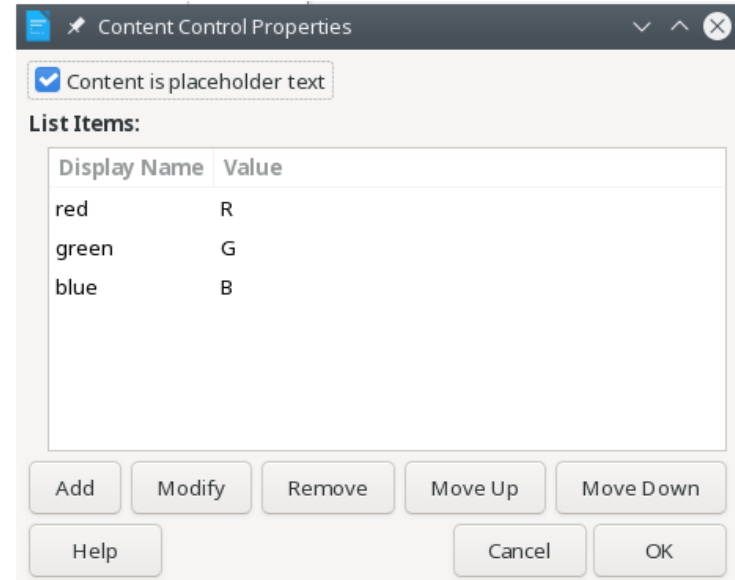
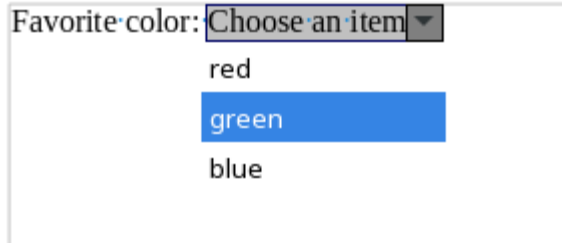
- Toggle the state on pressing space / click, otherwise read-only
- Usable defaults for the two characters



Drop-down list box

List of items, select one

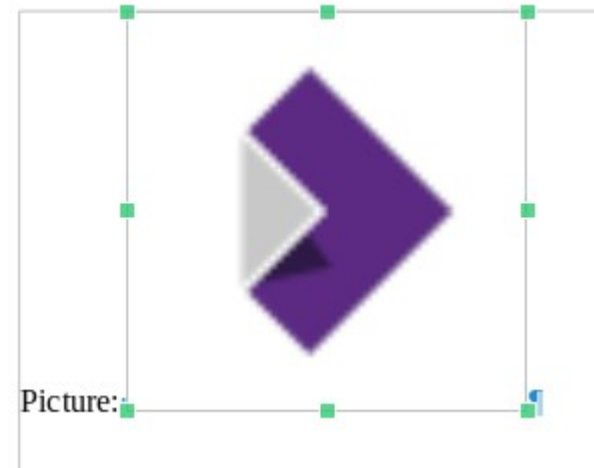
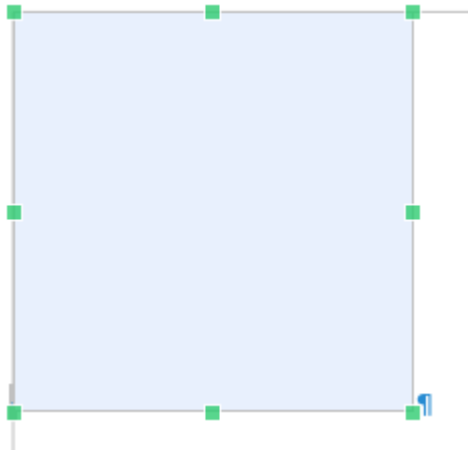
- One item is a pair of value and display text
- No free-form user input



Picture

Placeholder bitmap, already formatted for you

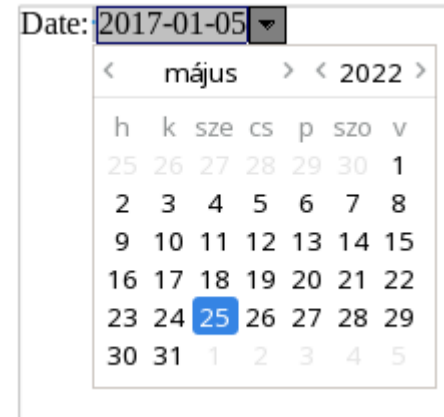
- Replace with real content on click



Date

Date picker popup when filling in

- Can specify a language
- Can specify a date format



Plain text

Enforce consistent character properties

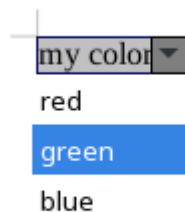
- Really similar to input field
- UI expands formatting range to content control start/end if needed

Your name: **Click here to enter text**

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

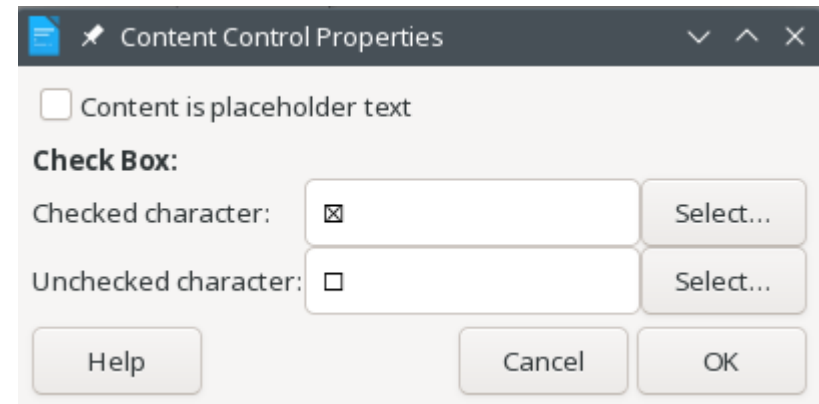
- SwContentControlPortion is the SwTextPortion subclass, handles shading
- Border is similar to input fields, a drawinglayer overlay
- Popups: SwContentControlButton is the Control subclass
 - SwDropDownContentControlButton handles drop-down/combo box
 - SwDateContentControlButton handles dates

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: gtk tiledviewer 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
- xmloff: 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

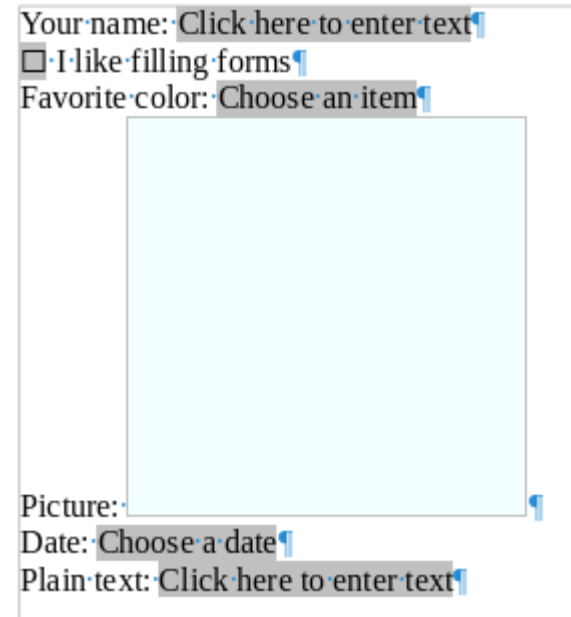
- What we do and share with the community has to be paid by someone
- This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 871498



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



The screenshot displays a document with several content controls:

- A text input field with the label "Your name:" and the placeholder text "Click here to enter text".
- A checkbox with the label "I like filling forms".
- A dropdown menu with the label "Favorite color:" and the placeholder text "Choose an item".
- A large, empty rectangular area with the label "Picture:" below it.
- A date picker with the label "Date:" and the placeholder text "Choose a date".
- A text input field with the label "Plain text:" and the placeholder text "Click here to enter text".