CRDTs in your favourite free software desktop word processor

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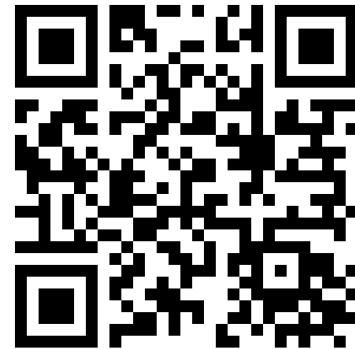2026-02-01

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Project page:

CRDTs in Writer?

Yes, but don't get too excited..

- The scope of the project is intentionally limited, as enabling collaborative editing for all Writer features would be too much effort for a single project. The goal is just to create a prototype to explore the feasibility of using CRDTs in Writer.

- Special read-only mode: only comments can be inserted, deleted, and edited

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File Edit View Insert Format Styles Table Form Tools Window Help

This document is open in read-only mode. Edit Document

...idn't bode well. Who could be following him this late at
...' And at this particular moment, just after he pulled off the
...reenbacks. Was there another crook who'd had the same
...aiting for a chance to grab the fruit of his labor? Or did the
...y law officers in town was on to him and just waiting to
...sts? He nervously looked all around. Suddenly he saw the
...e left and disappeared between the two warehouses almost
...iddle of the sidewalk. He tried to nervously tap his way
...y stiffened: it was a dead-end, he would have to go back the
...and louder, he saw the black outline of a figure coming
...line? he thought pressing himself back against the wall
...dark, was all that planning and energy wasted? He was
...he could smell the fear coming off his clothes. Suddenly
...ueak, a door swung quietly to and fro in the night's breeze.
...? Slowly he slid toward the door, pressing himself more and
...from his enemy. Would this door save his hide?

	890
	901
	012

...idn't bode well. Who could be following him this late at
...' And at this particular moment, just after he pulled off the
...reenbacks. Was there another crook who'd had the same
...aiting for a chance to grab the fruit of his labor? Or did the
...y law officers in town was on to him and just waiting to

Commented   tab
linebreakurl

Test
18.12.2024 18:44

Apples are best

Test
18.12.2024 18:45

Definitely after sunset.
Not before.

Test
18.12.2024 18:46

Find   Match Case   Match Diacritics

Page 1 of 1   596 words, 3,127 characters   Default Page Style   120%

Which CRDT?

Don't write our own!

- Using **yrs** CRDT library

    - First integration of Rust library in our C++ codebase

- Can do all features supported by `EditEngine`

    - Lots of boring serialisation code...

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Implementation

What's in the YDocument

- YMap of comments (key: peer id + counter)

    - `YArray`
        - Anchor in document pos: 2 or 4 ints
        - `YMap` of comment properties
        - `YText` shadowing `EditDoc` state
- YMap of cursors (key: peer id)

    - Writer cursor: 2 or 4 int
    - `EditDoc` position: comment id + 2 or 4 ints, or `Weak` reference

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Results

Basically, it appears to work?

- All paragraph and character formatting

- Display peer cursors in body and comments

- Undo (... somewhat, less than ideally)

- Yrs is pretty neat

    - Writer code: not so neat

- Caveat: only tested with 2 peers over local socket

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Results

Open Questions

- application APIs are based on "actions", **yrs** only produces "diffs"

    - heuristically determine actions to apply

- More complex structures (sections, tables...)

- Spreadsheet performance?

- Is completely automated conflict resolution desirable?

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