LibreOffice
The Document Foundation

BUILDING A LIBREOFFICE DEVELOPMENT TEAM

László Németh
team leader
LibreOffice dev. team
NISZ Zrt., Hungary

nemeth@numbertext.org

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LIBOCON TIRANA 2018

BUILDING A LIBREOFFICE DEVELOPMENT TEAM

Agenda

- Gallery of our nice results
- Our mentoring program with the secret sauce ;-)

KEYWORDS

sustainability
brain gain*
growth mindset

* https://en.wikipedia.org/wiki/Human_capital_flight

LIBOCON TIRANA 2018

LibreOffice is a GREAT office suite

LIBOCON TIRANA 2018

UNIQUE COMBO

- Full-featured
- Open source
- Community-driven development
- Cross-platform and online!
- Standard formats
- Broad spectrum of services: from free TDF LibreOffice builds to L3 support and private cloud-based solutions from certified developers

WITH GREAT SOCIAL BENEFITS

- For public sector, against monopoly (see Microsoft scandals in different countries)
- Against social inequality in wealth (freeware builds), knowledge (open source) and language (broad l10n support)
- Against software piracy (see data & civic, corporate and governmental responsibility)

“Anything that can go wrong, will go wrong.”

- Lots of features
- Huge code base
- Under active development
- By relatively small developer community (hundreds of code contributors, but only a few dozen full-time developers)
- New bugs & regressions

Every user needs continuous, sustainable LibreOffice development

Anyone can become a LibreOffice developer

Build your own LibreOffice development team!

Solve your own problems

Creating a more powerful developer community, sharing the costs and results of the development

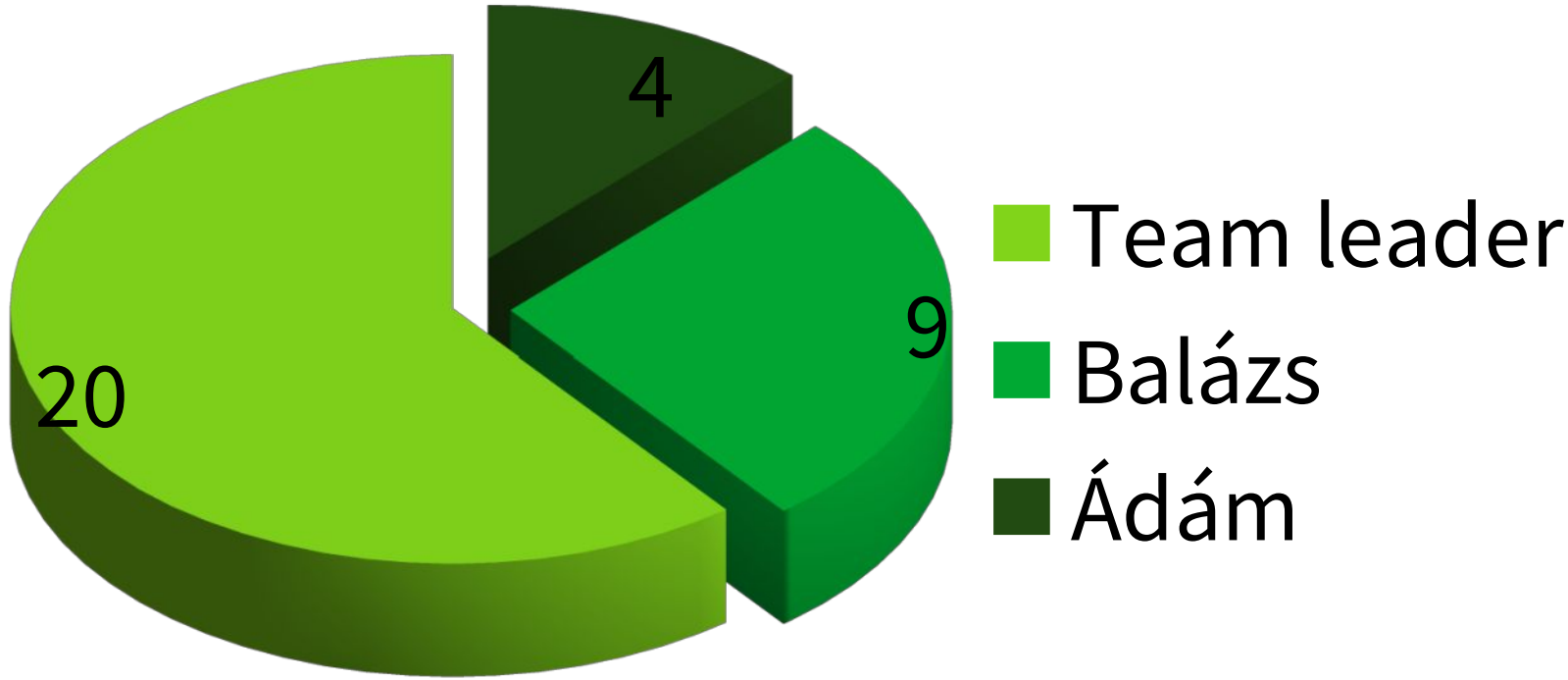
Increasing LibreOffice's popularity, catching the upward spiral

Our team

3 developers, NISZ Zrt., Hungary

3-month trial period from June, 2018

33 fixes (from our selected 300 bugs):



OUR RESULTS

Better interoperability by bug fixing and workarounds

No missing e-mails

Blocked e-mails with DOCX export of LO containing “EMF” metafile images

Bug in LibreOffice file export: automatic and unnecessary renaming of image extension .emf to .wmf

Solution: keep the original .emf extension ☞#103913

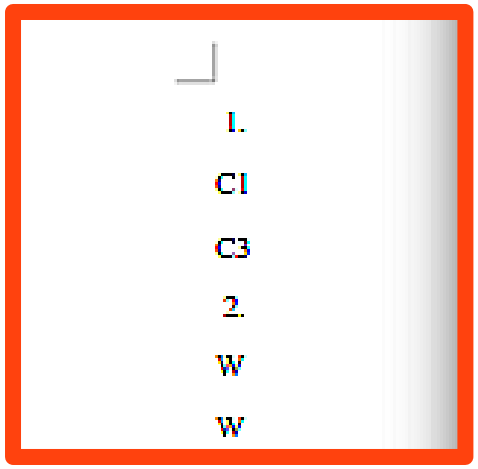
No table loss by CRs

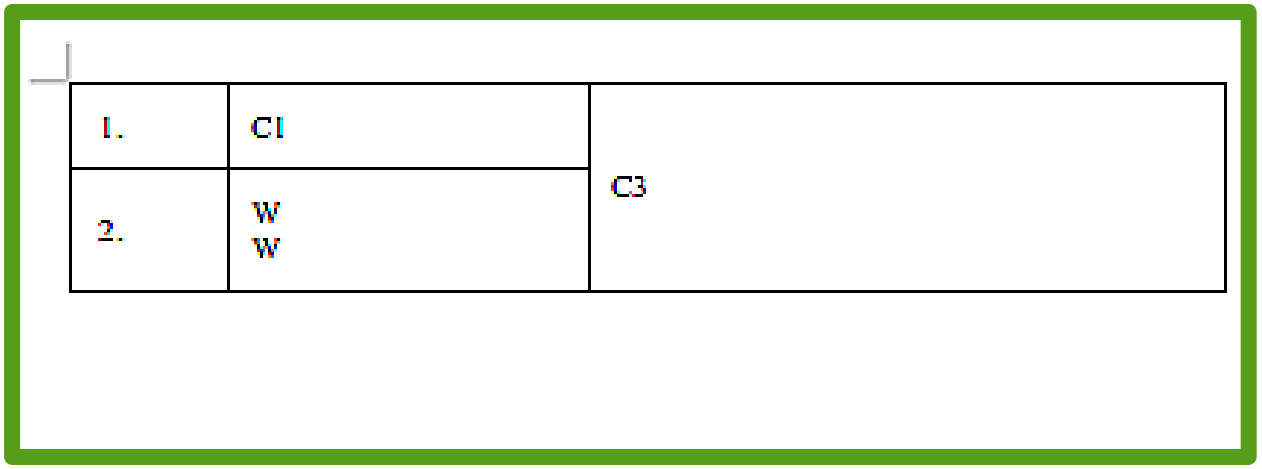
1981 MS-DOS adopts CR LF line ending

2010 MSO: OOXML gets <w:cr>

201x LO DOCX import: table loss by CRs

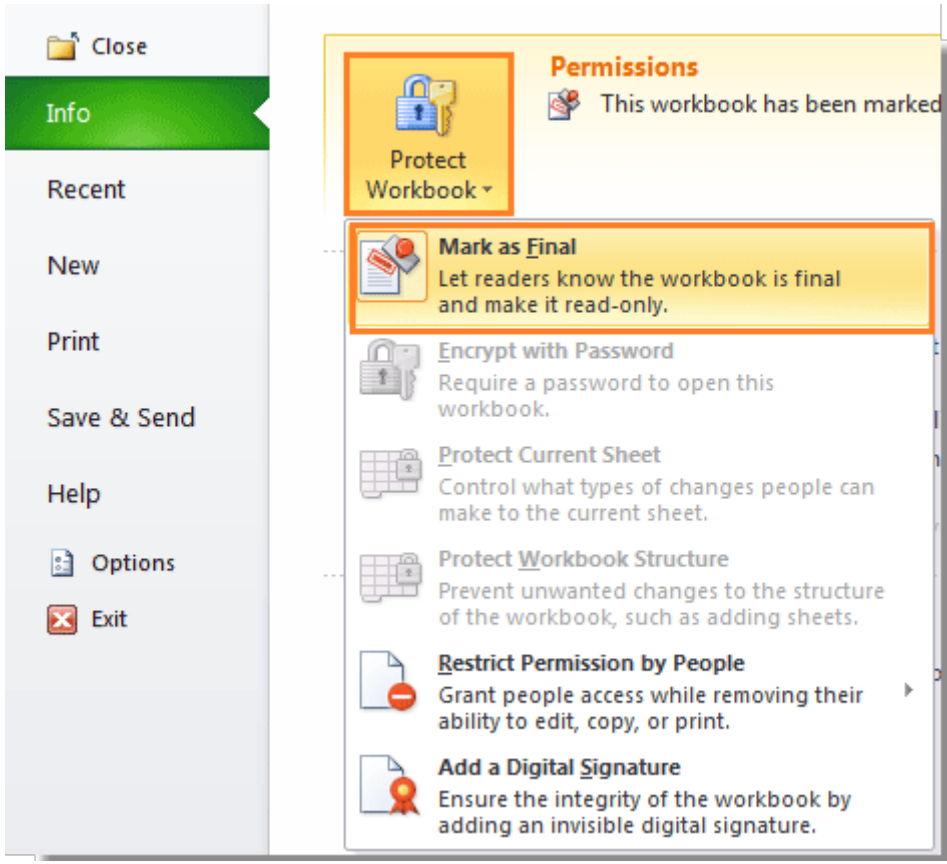
2018: fix ooxml/model.xml ☞#118691

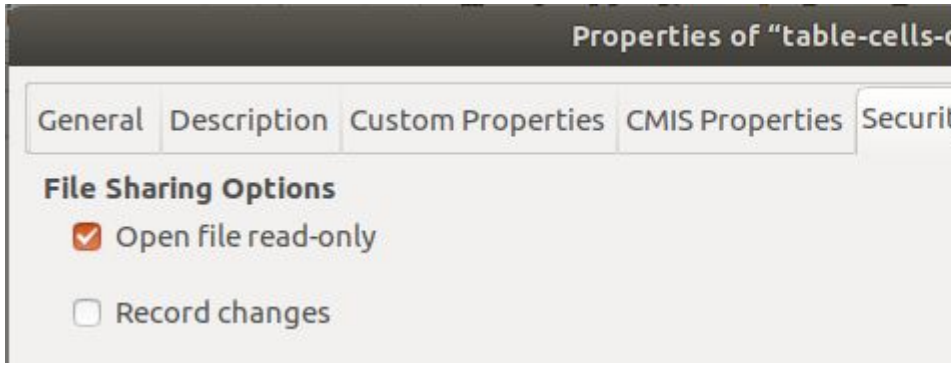




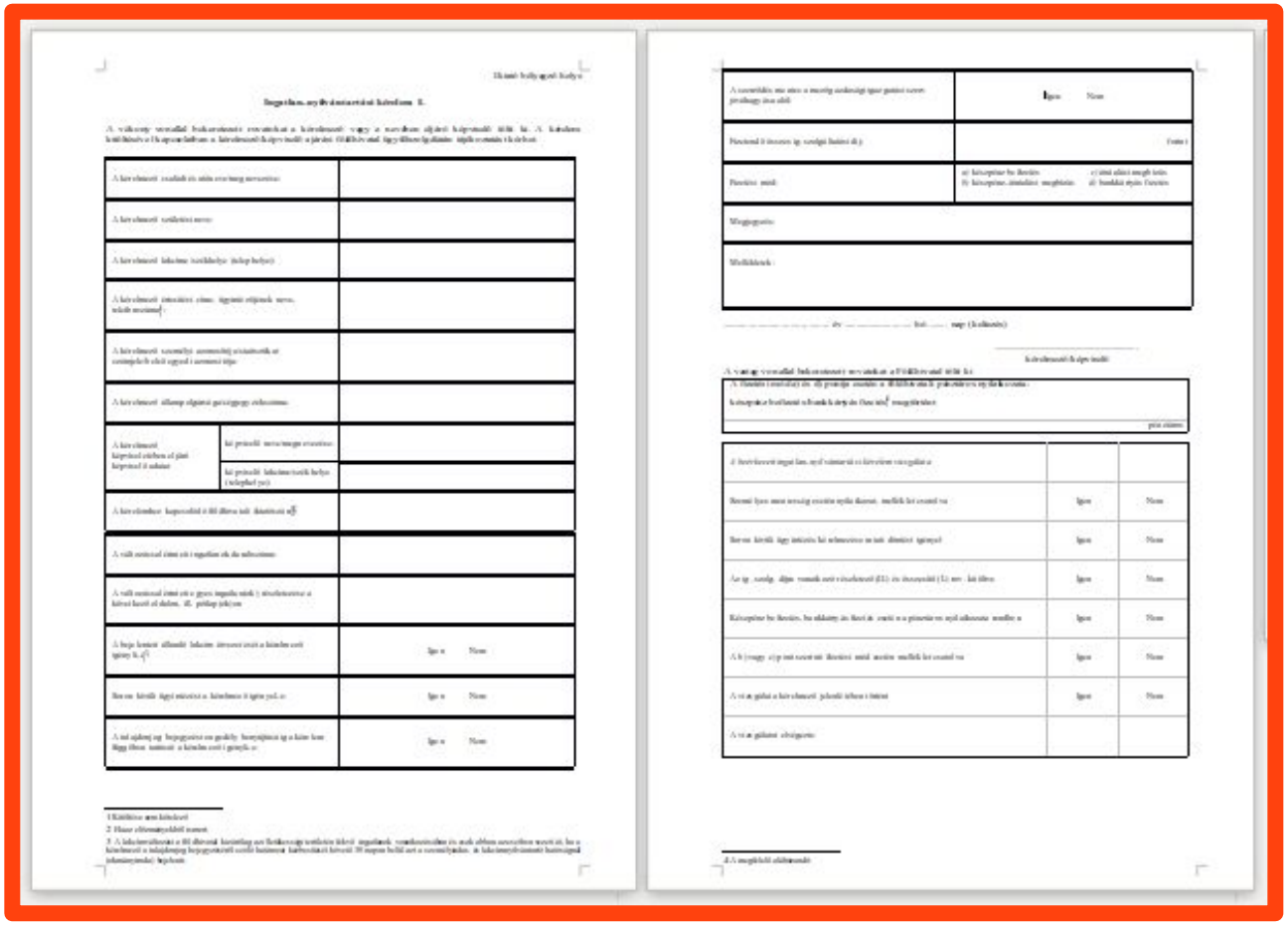
Protect our documents

- “Mark as final”
- Basic MSO protection
- Custom XML extension
- Solution: import/export pairing of the similar “Open as Read-Only” document setting of LibreOffice ☞#107690

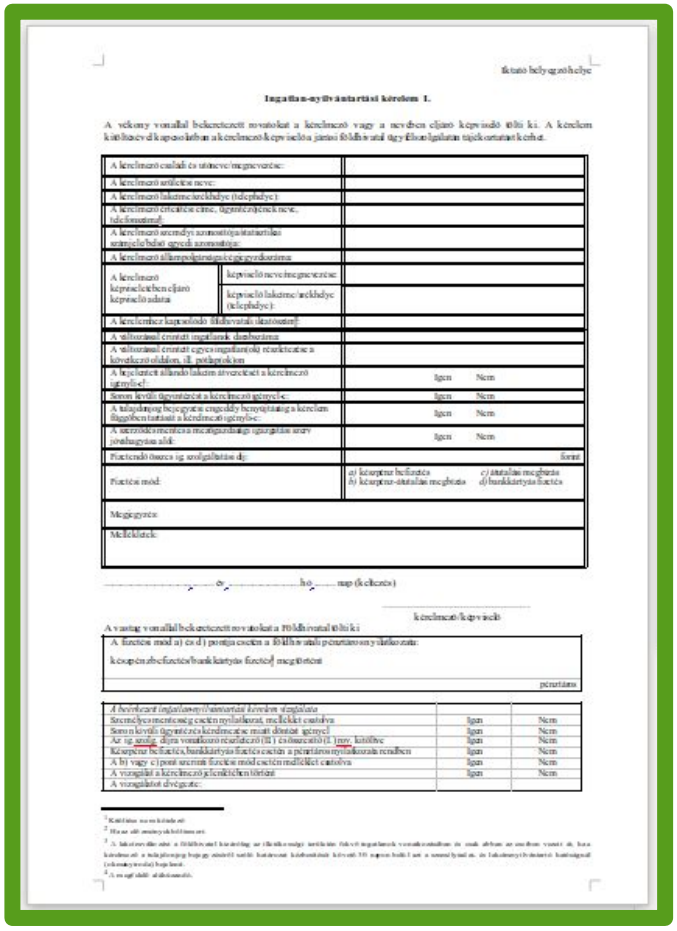




No broken forms ...



Before: broken 2-page form



After: correct 1-page form

… by “Auto” margins

Special paragraph margins: do it as MSO

Keeping layout of our forms

Solution: fix import filter ☞#104354

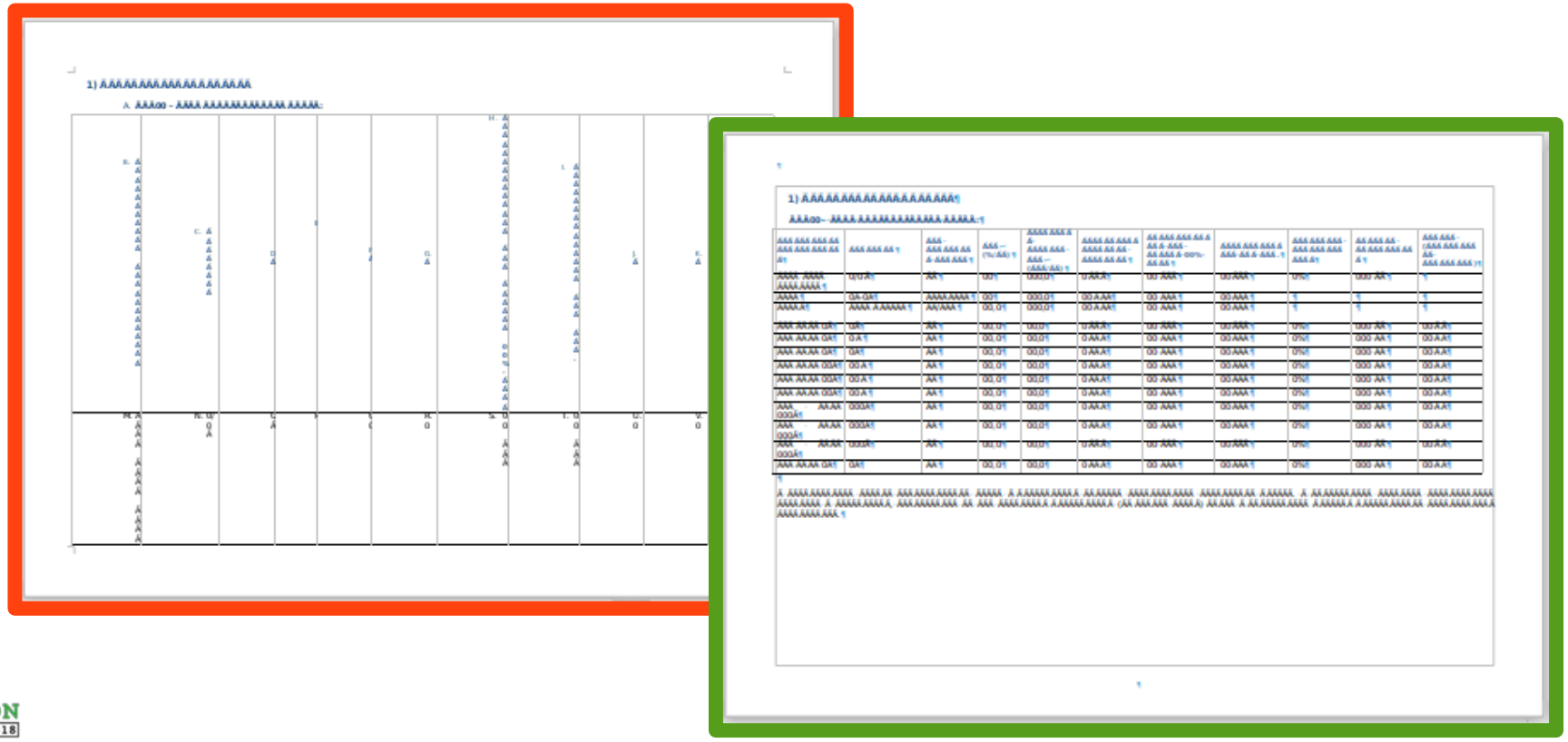
Thanks for the help of

Justin Luth (co-author), Collabora and

Xisco Faulí (testing and bug reports), TDF

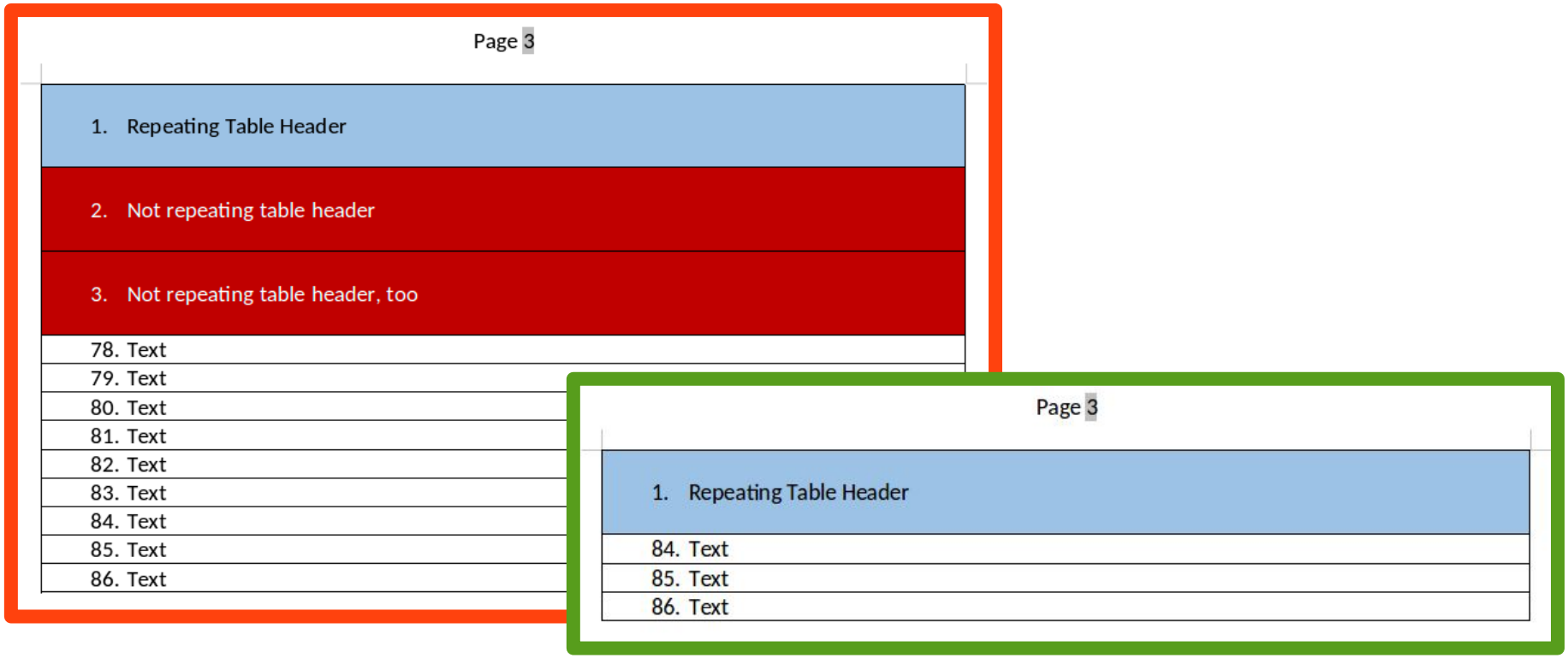
… by bad numbering

tdf#113608 numbering of invisible “w:r-less” paragraphs inherited in next table



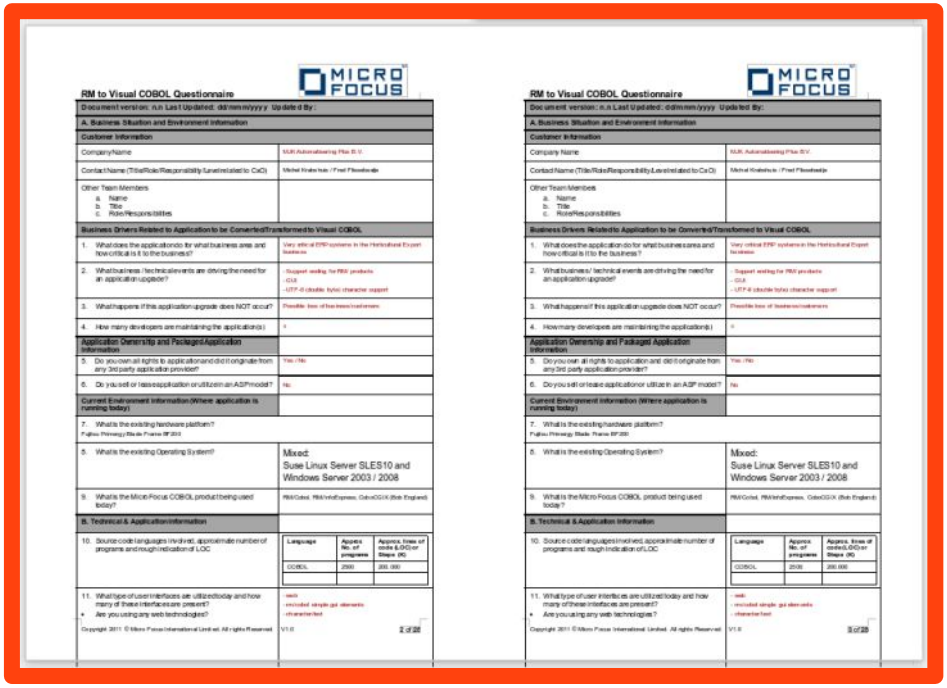
No random table header

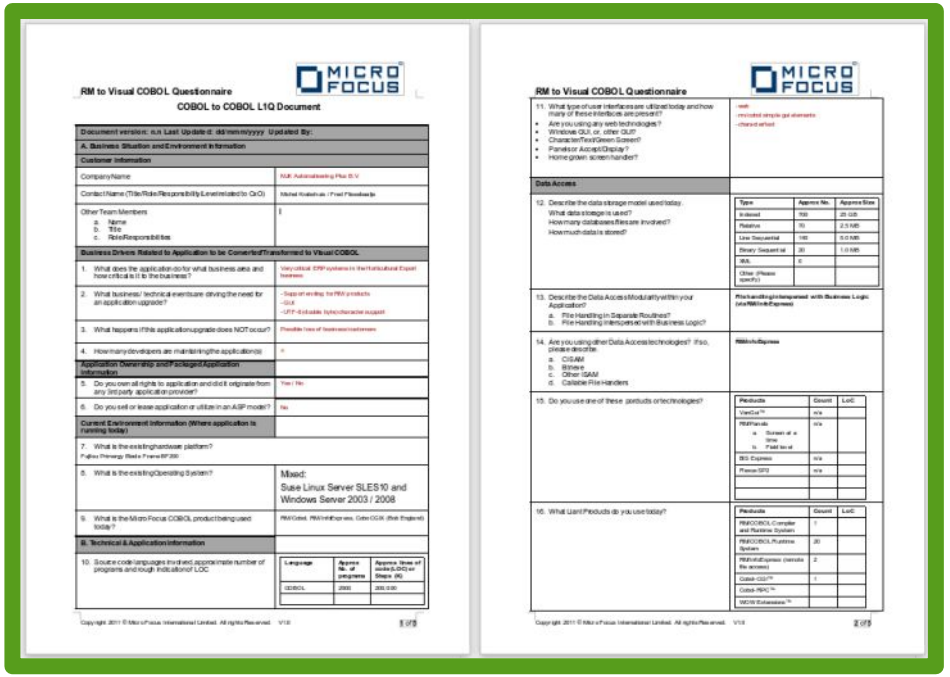
tdf#64264 DOCX import: fix row count of repeating table header (a typical problem of importing joined tables)



No broken tables

tdf#58944 handle MSO's workaround (all rows are headers) for Word's bug (non-modifiable header) in LibreOffice, too





Fix Calc→Writer copy

Most wanted usability fix (☞108 votes)

Insert Calc data in Writer native text tables cell by cell instead of OLE object

For 1-cell tables: don’t use OLE at all, ie. neither in normal body text ☞#37223

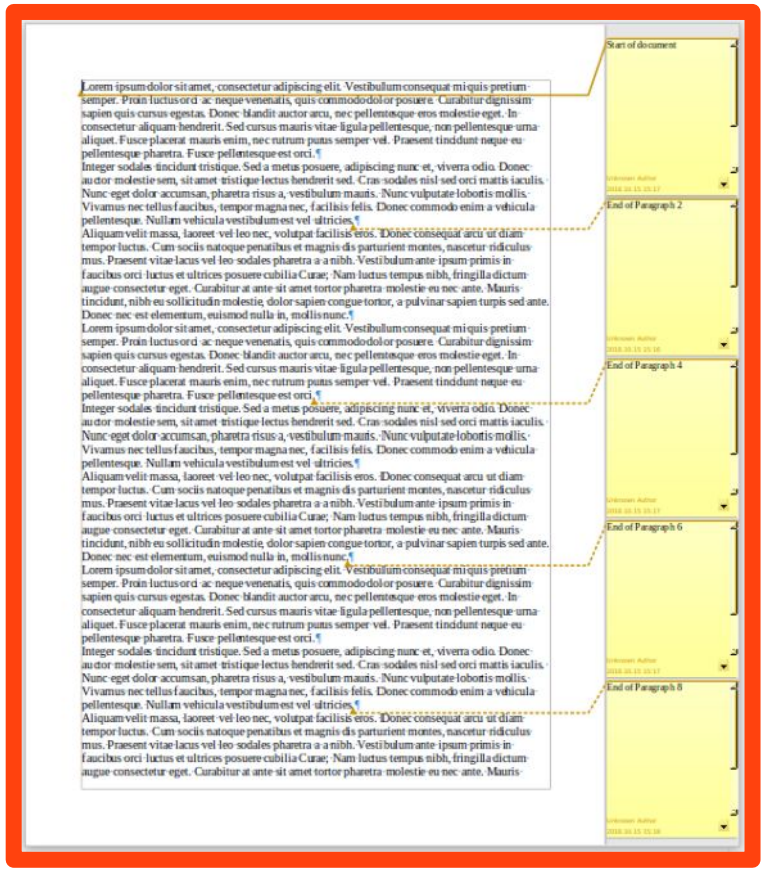
	Data1	Data2	Data3
Foo			
1 3	⚓	2 4	3 5
Bar			

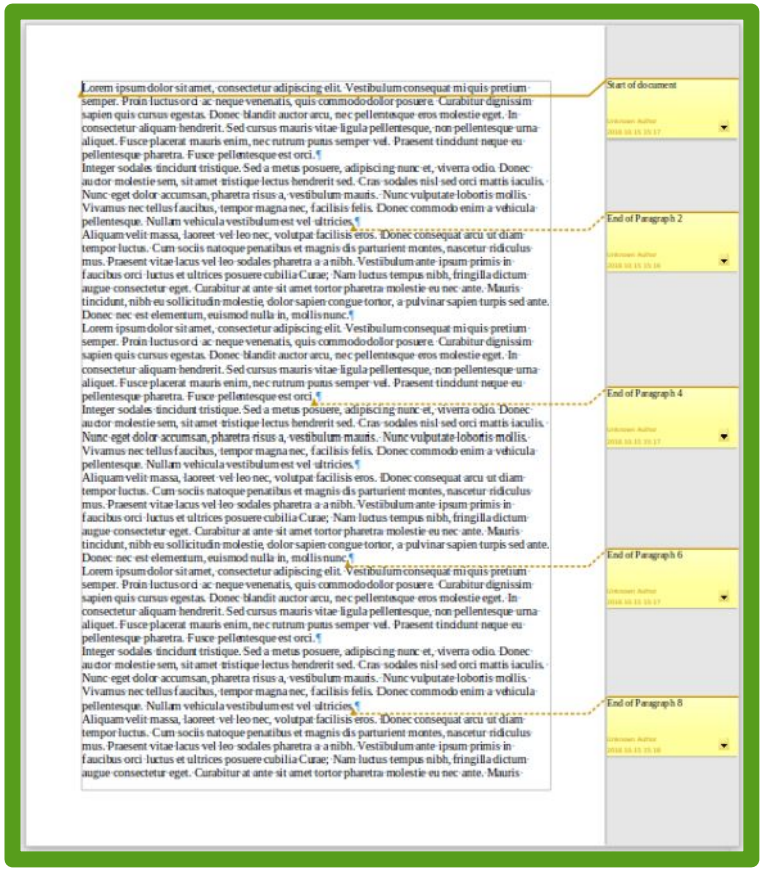
	Data1	Data2	Data3
Foo	1	2	3
Bar	3	4	5

Track changes & annotations

Fix comment bloating

tdf#105444 new and new empty lines in comments in every import/export cycle





Handle text relocation

Content loss!: reappearing deletion

Tracking loss: unmarked insertion

Solution: w:MoveFrom is deletion, and w:MoveTo is insertion ☞#104797

Will this sentence be duplicated?

This is a filler sentence._Will this sentence be duplicated ADDED STUFF?

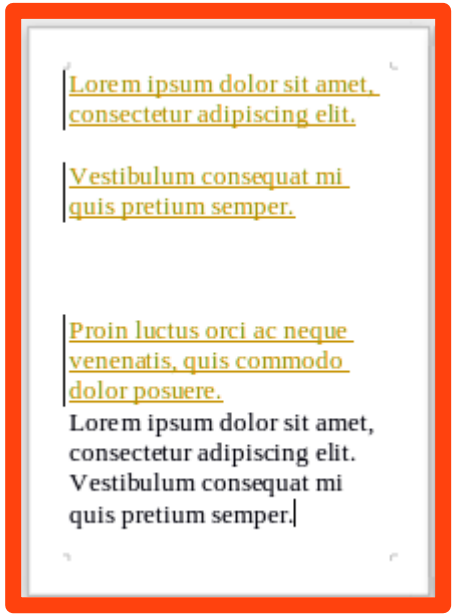
~~Will this sentence be duplicated?~~

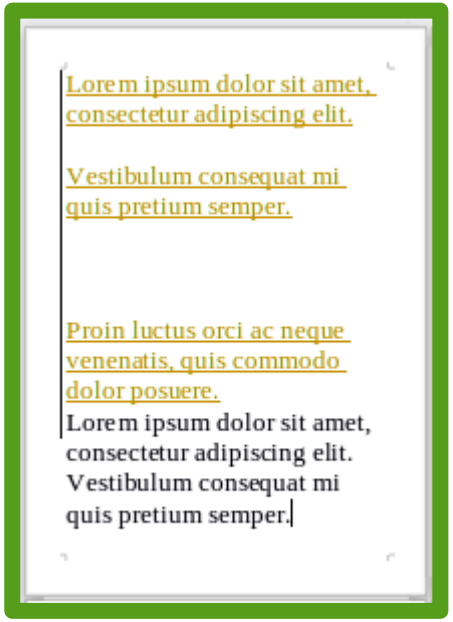
This is a filler sentence. Will this sentence be duplicated ADDED STUFF?

Fix empty line deletion

tdf#115521 all empty paragraphs of a multiparagraph deletion lose tracking

tdf#119848 change tracking of a single deleted empty paragraph is removed on save, if it has no other property change

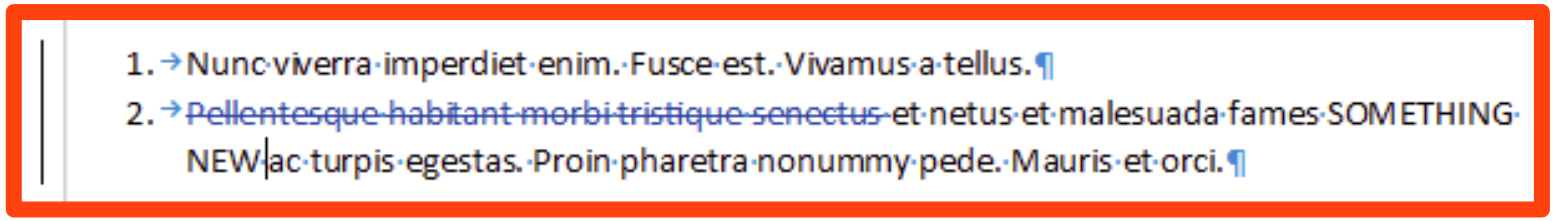


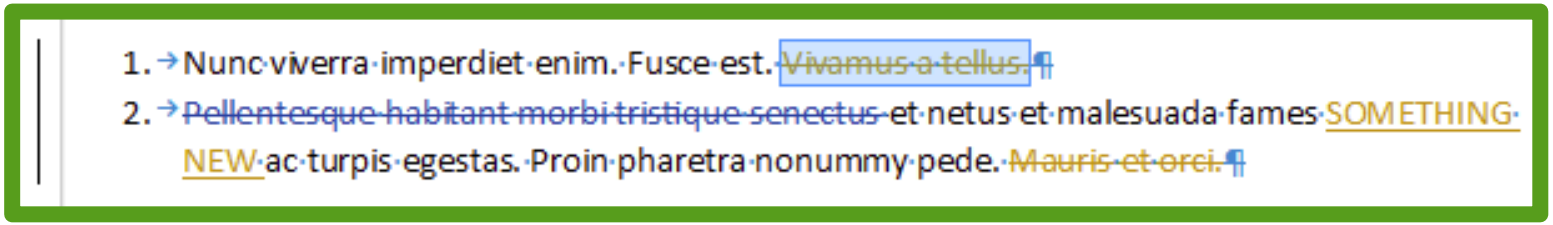


Fix invisible changes

tdf#119019 show deletion and insertion

Tracked paragraph change (numbering) hides content modification. Workaround: accept style change automatically at changing of the text of that paragraph.

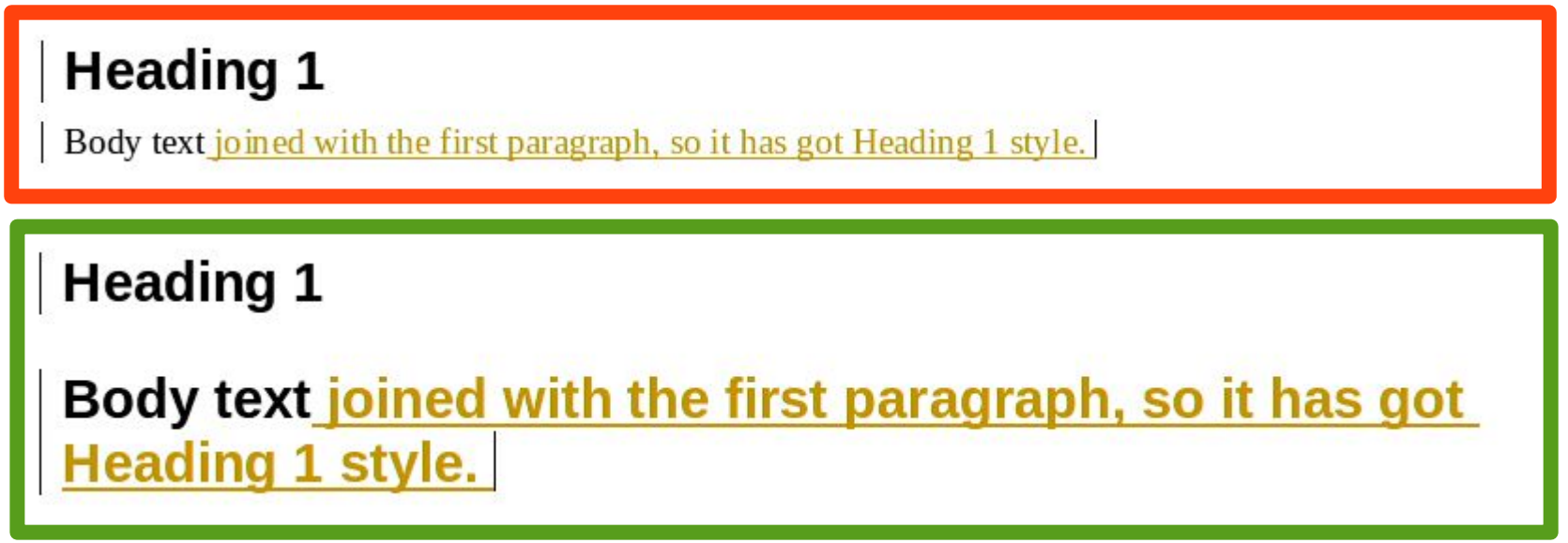




WYSWYG paragraphs

"Show change tracking" mode didn't show the style changes after tracked paragraph join until saving the document (not an OOXML problem)

tdf#119571 show changes correctly



Paragraph deletion

tdf#54819 It wasn’t possible to delete a full paragraph without copying its style to the next one (bug of change tracking)

Lorem IPSUM

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~~Lorem·IPSUM~~¶

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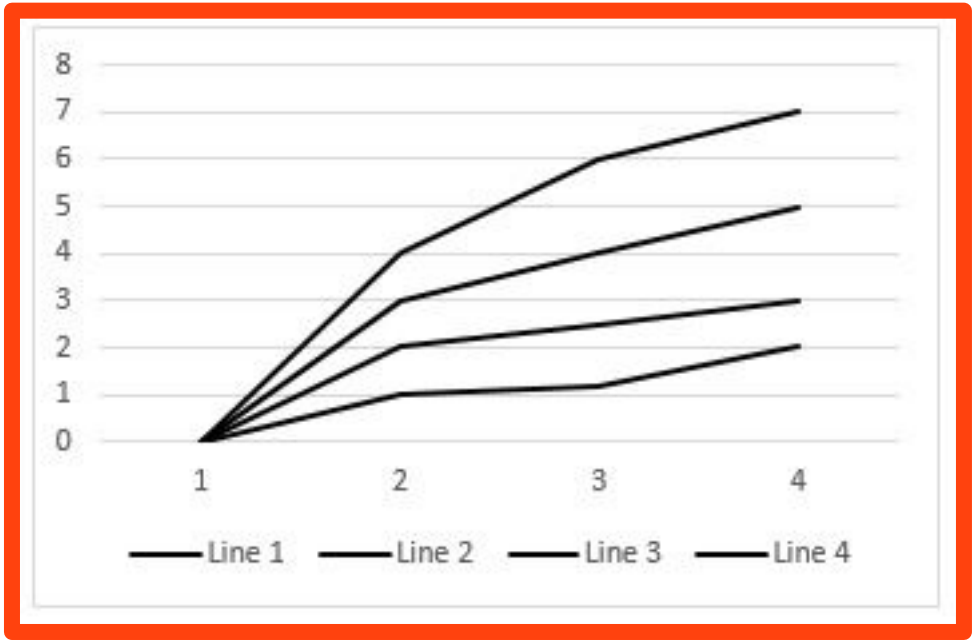
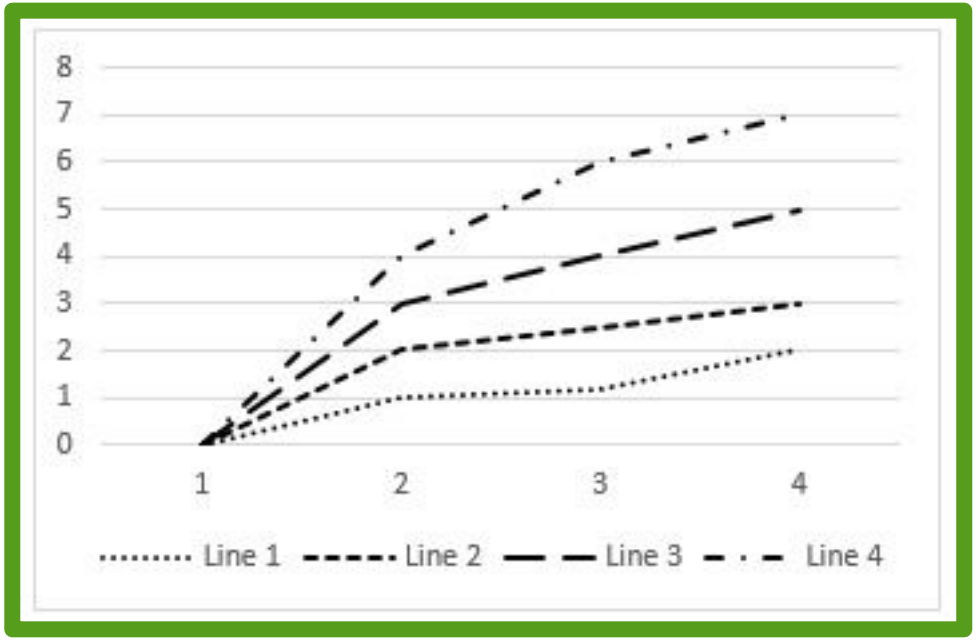
IMPROVED CHARTS

by our novice developers

Save our dashed lines

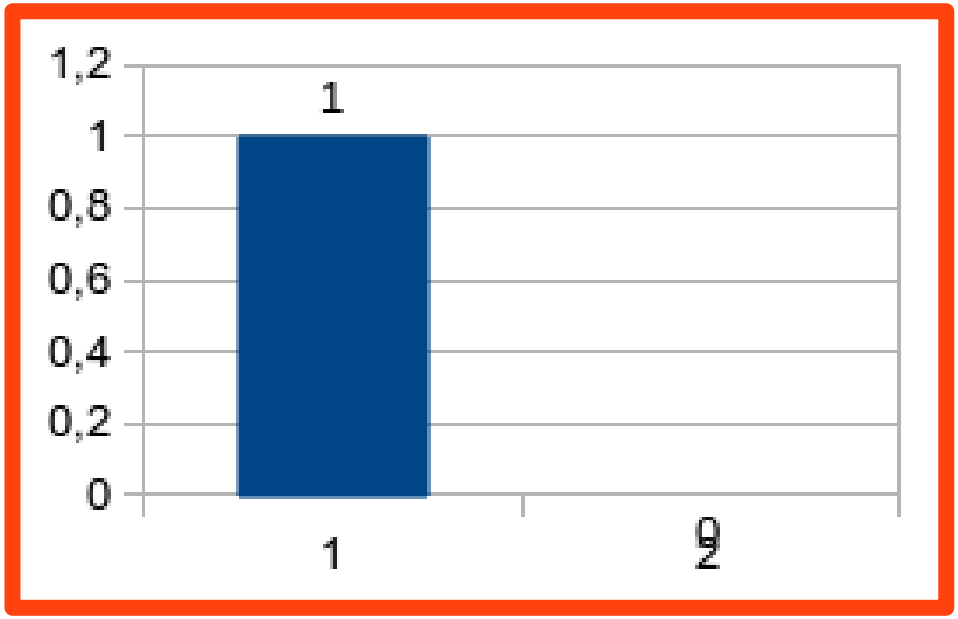
tdf#108064 OOXML export: keep MSO preset dashes in charts, instead exporting solid lines (by Ádám Kovács)

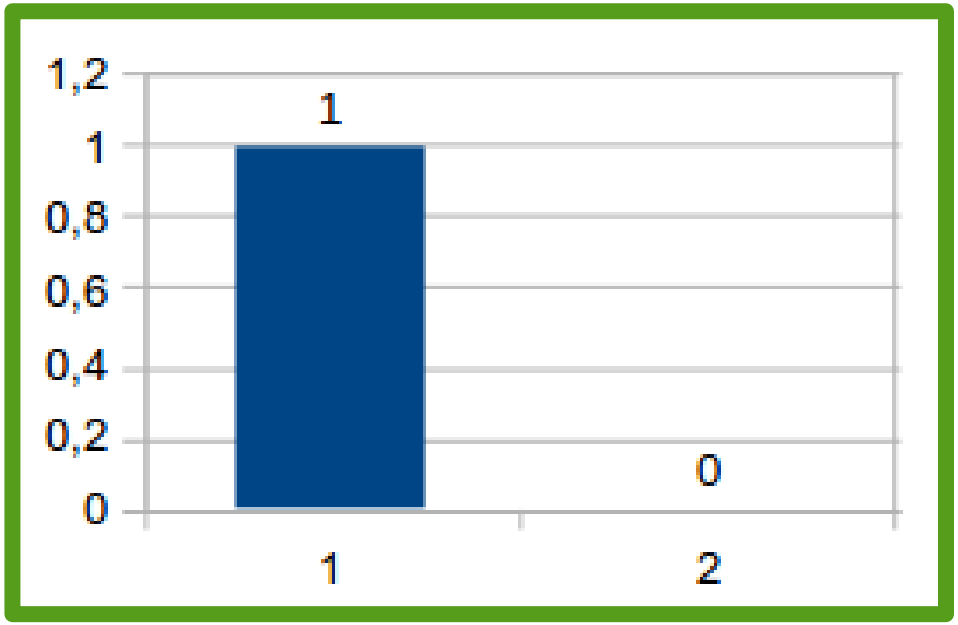




Zeros on the right side

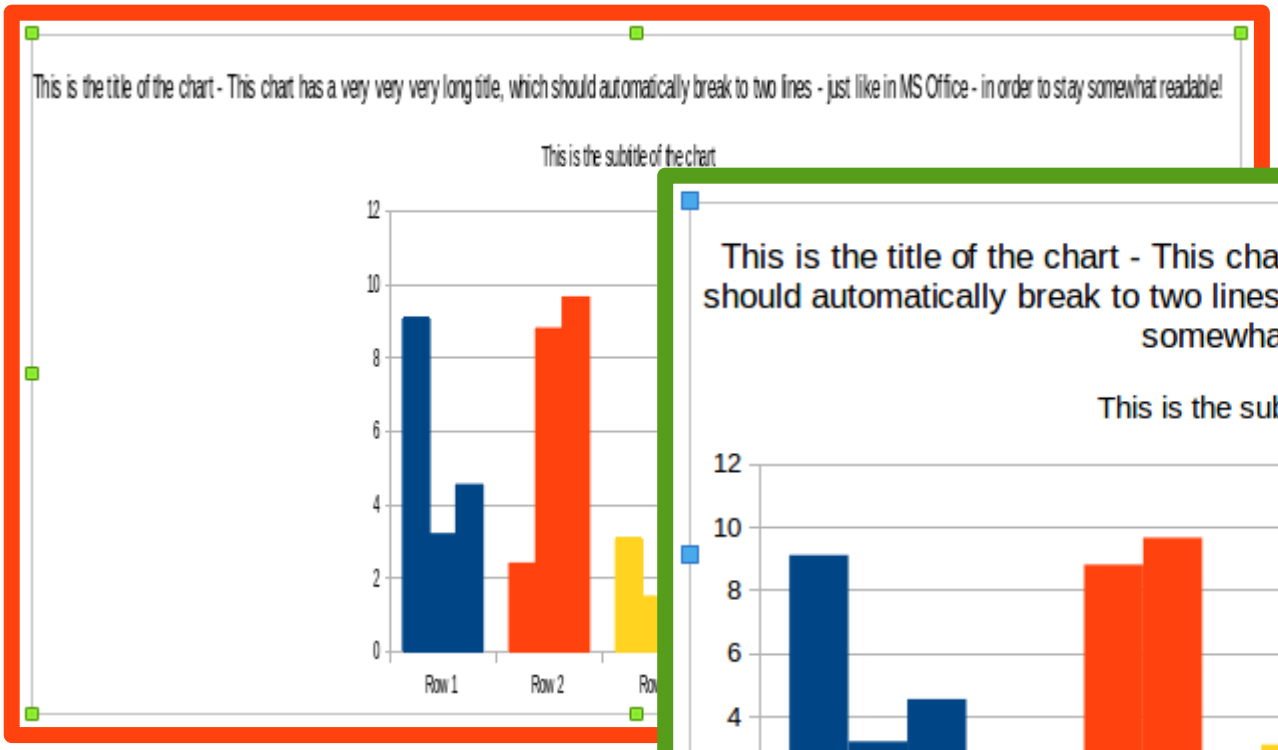
tdf#118705 fix placement of zero data label with different column and bar chart settings (fixed by Balázs Varga)

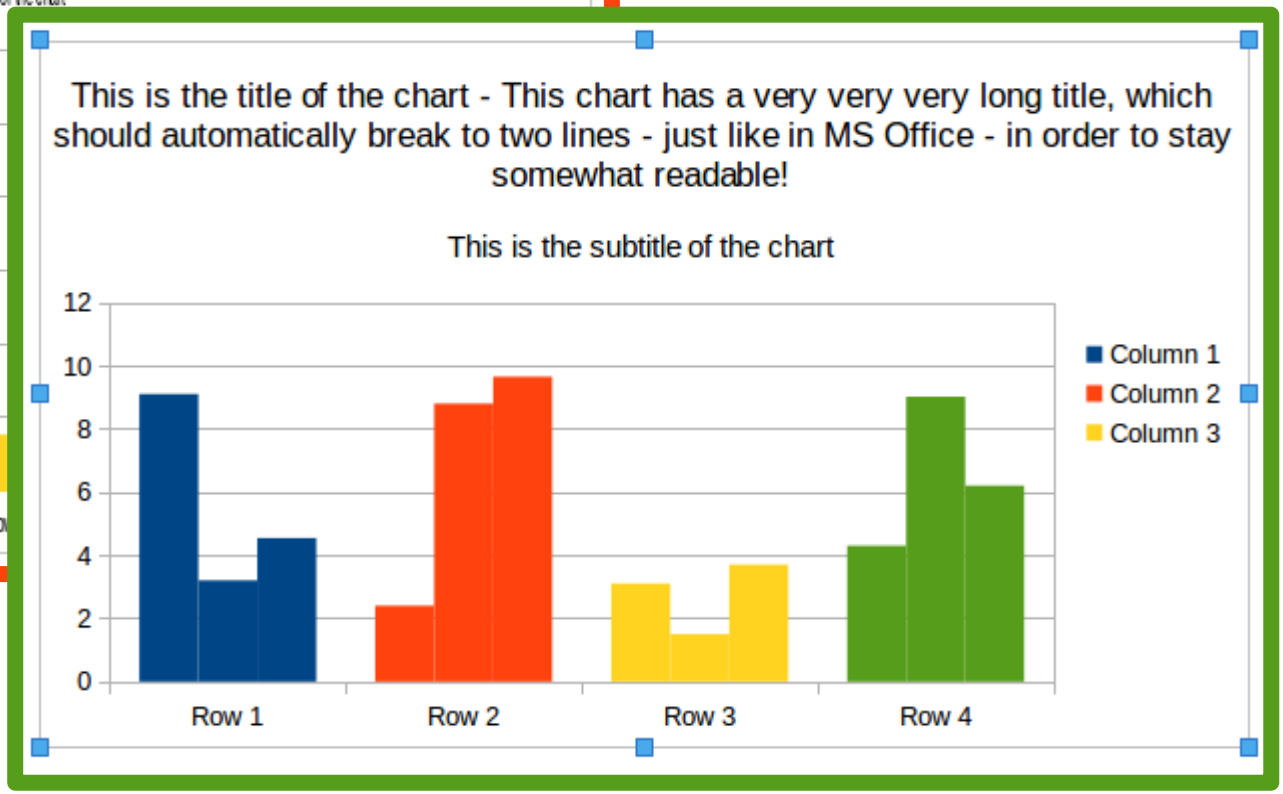




No distorted charts

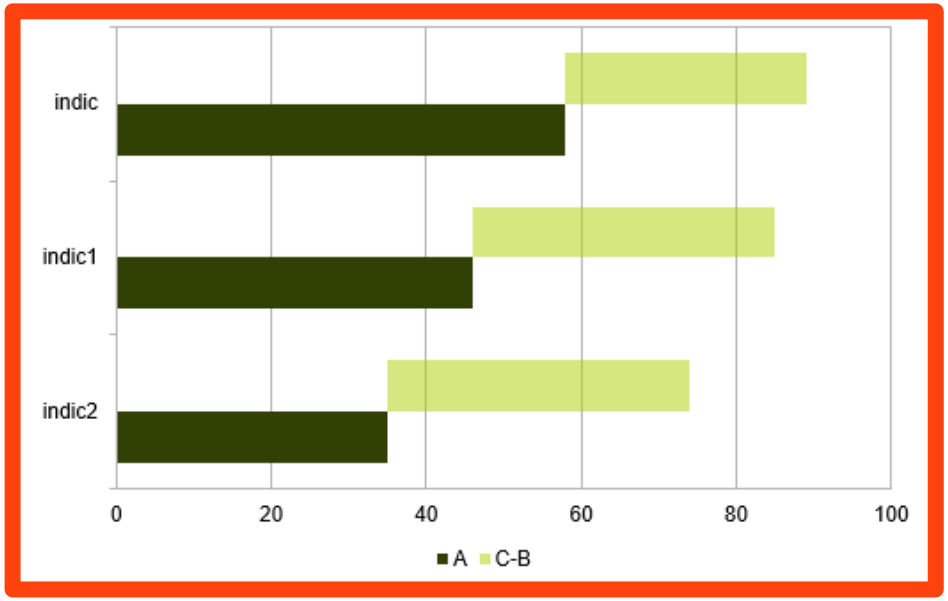
tdf#108028 break chart title automatically instead of distortion of the chart and their titles (by Balázs Varga)

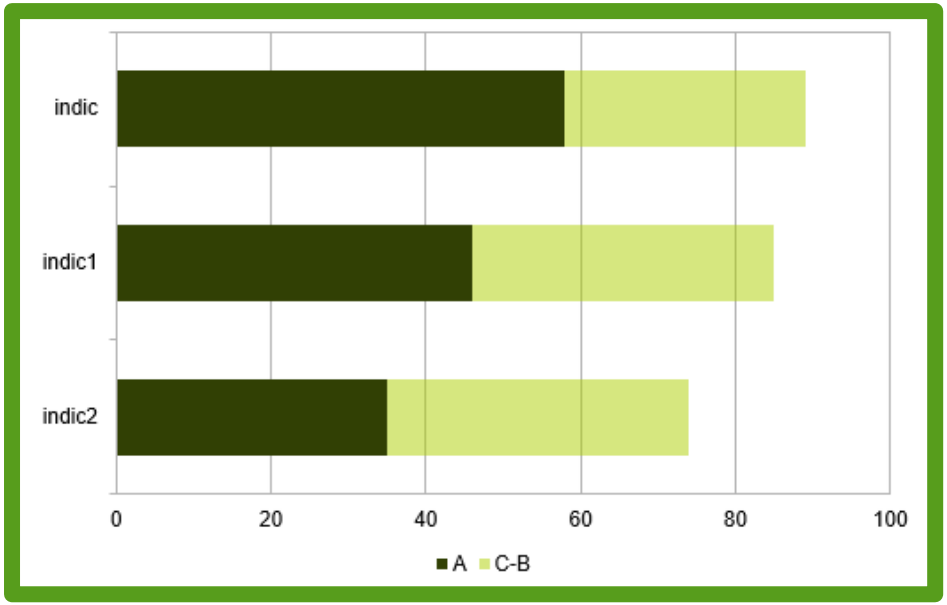




No broken chart bars

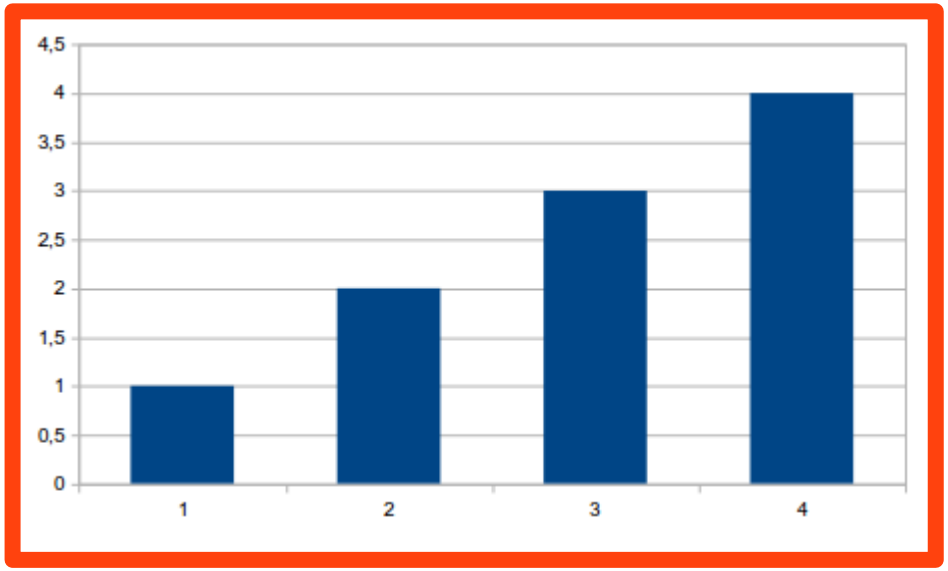
Tdf#94502 OOXML: fix overlap export of stacked bar chart (by Balázs Varga)

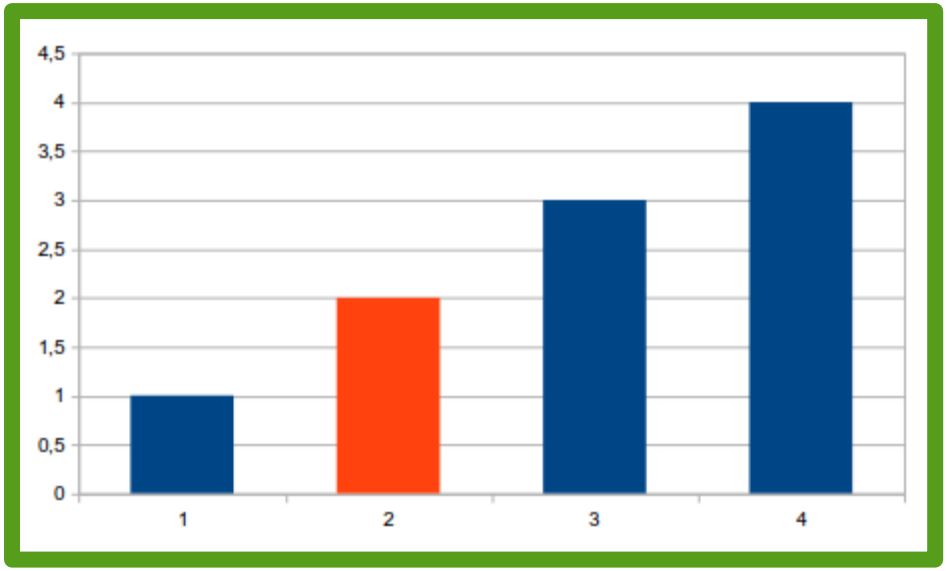




Keep custom format

tdf#96469 OOXML: export custom data point properties (by Balázs Varga)





Other improvements

tdf#119562 Fix export of AutoFit property of shapes

tdf#108078 Export Chart shapes area fill properties

tdf#118651 OOXML ActiveX textbox: fix multiline

tdf#118153 VBA Macro: XLSX in Workbooks.Open

tdf#118127 fix date format duplications in Hungarian locale

MENTORING

LibreOffice bug fixing is an active and continuous learning process

MENTORING
Learn to self-study LibreOffice by hacking, active code reading (eg. causing new bugs) and minor bug fixing

OUR MISSION
Learning LibreOffice by bug fixing, and developing competitive features

Elements of mentoring

- Formal education by a LibreOffice expert
- Basics: OOXML/ODF, building, bug fixing & unit testing, Developer’s Guide
- Working on real problems, first together,
- Later in virtual machine with guidance
- Asking help via Telegram and IRC
- Motivating (badges, LiboCon etc.)

Learning materials

TDF Wiki pages & Apache OpenOffice.org materials, and knowledge of the expert(s)

Learn UNO via macro programming by using inspector extensions and reading IDL API

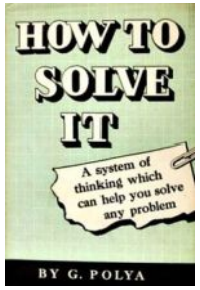
Git repository of LibreOffice is a readable and documented collection of sample bug fixes. Master it for searching and code re-use.

Use opengrok, git, bibisecting, SW_DEBUG, SAL_DEBUG and gdb (for code reading, too)

How do I solve it?

Heuristic techniques of LibO development

See *How to solve it* (by George Pólya, 1945)



1. Understand the interoperability problem: check it in different office suites, during import/export cycles, changes in XML content of OOXML or ODF documents, read related part of the OOXML and ODF standards.

2. Devise and carry out the plan; simplify the test document also for the unit test; search the related code parts (opengrok, git, gdb); read it by SAL_DEBUG test modifications; think of simple workarounds and parallel solutions for part of the problem; solve it; add unit tests

Experience matters

Help your students by encouraging, code reading, hints, and code snippets

Mentoring is a learning process for you

Be a pioneer by learning new parts of LibreOffice during mentoring and later

Plan long-term competitive features and learn the related parts of LibreOffice

Share and keep your growth mindset

Growth mindset

The power of believing that you can improve (Carol Dweck) https://www.ted.com/talks/carol_dweck_the_power_of_believing_that_you_can_improve

No one understands the whole code, but everyone would be able to fix bugs, only with partial understanding

Gain this partial understanding!
Test it!

Prepare for learning

There is no prohibited method in problem solving

1 Choose the best: New day is a new challenge; Self-education. *“So do not fear, for I am with you…”* (Isaiah 41:10). *“What you aim at determines what you see.”* (Jordan Peterson). Trial and error. Learning is an active process: *“You cannot understand a system until you try to change it”* (Kurt Lewin), *“There is no royal road to geometry.”* (Euclid); Read the code as your own. Practice makes the master. Go at your own pace; Stay on the golden middle way; Take a break; Switch task; Ask for help; *“Repetitio est mater studiorum”*.

2 If it doesn’t work, GOTO 1

SUMMARY

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As we did

- Invest in LibreOffice
- Hire an expert (team or developer):

  https://www.documentfoundation.org/gethelp/developers/
- To mentor your team
- By fixing your real problems

Acknowledgements

Balázs Varga & Ádám Kovács
junior LibreOffice developers of our team

NISZ LibreOffice support team, lead by Gábor Kelemen (see his presentations, too)

Experts of Collabora Productivity, Red Hat Linux and TDF, reviewing our bug fixes

LibreOffice users, contributors and developers around the globe