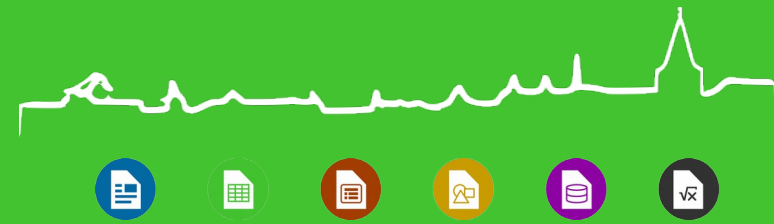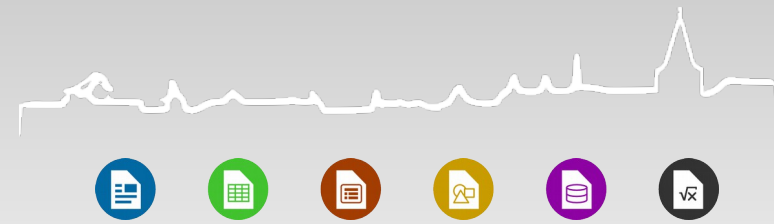# Vertical Writing:
typical use-cases and current status in LibreOffice
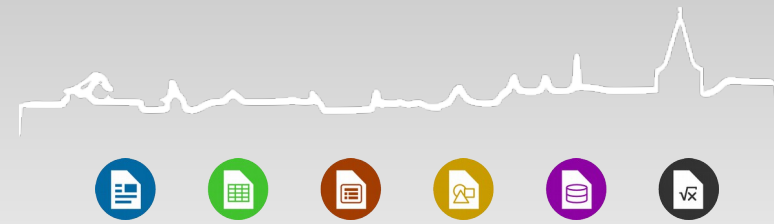
- ❯ Naruhiko Ogasawara
- ❯ LibreOffice Japanese Team

Agenda

- Japanese vertical writing basics and use-cases
- Current implementation of LibreOffice vertical writing
- Deeper look from the end-user point of view
- Conclusion

Japanese vertical writing basics and use-cases

Japanese specific text rendering

- Vertical Writing (TTB)
  - Top to bottom, right to left
  - Used by Japanese, Chinese
  - Only for text writing, NOT UI
- Ruby
  - Pronounciation expression

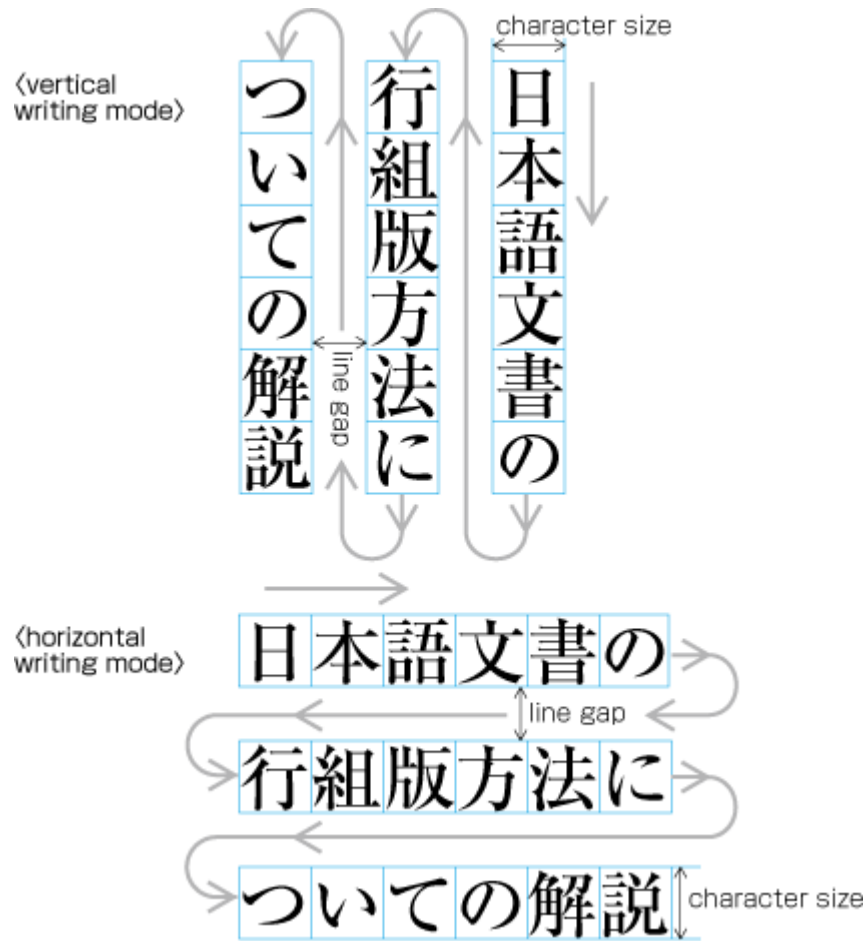今日は、「私の話」を聞いてくれて、ありがとう。

にほんご
日本語

See:
Requirements for Japanese Text Layout
ｂｙ　W3C Working Group Note 3 April 2012

http://www.w3.org/TR/jlreq/

Vertical Writing Basic (from the W3C document)

Vertical Writing
縦組 ； tate gumi

The process or the result of arranging characters on a line from top to bottom, of lines on a page from right to left, and/or of columns on a page from top to bottom. (JIS Z 8125)

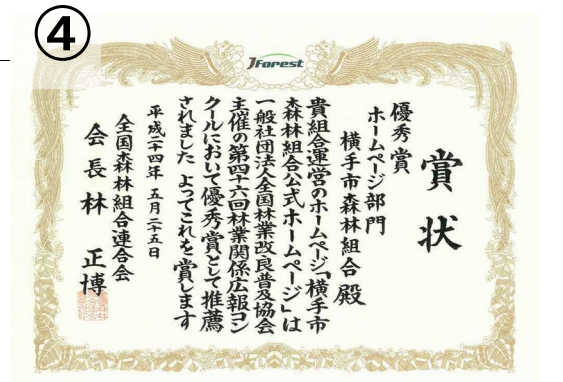Requirements for Japanese Text Layout Appendix G Terminology
http://www.w3.org/TR/jlreq/#term.vertical-writing-mode

Typical use-cases of vertical writing

- Non-technical / Scientific publications
  - Novels①
  - Magazine②
  - Papers
  - Business/Popular Science books
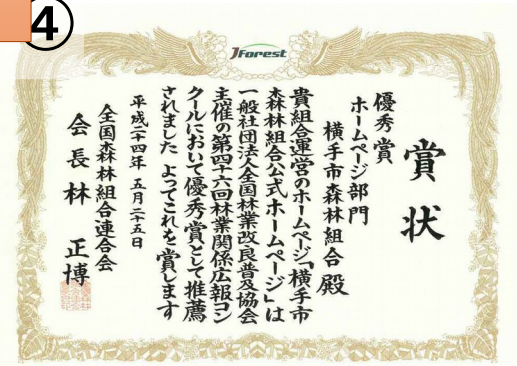 - School Education
- Letter③
- Diploma④

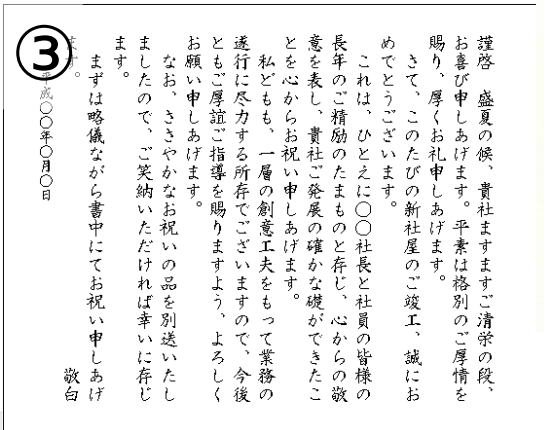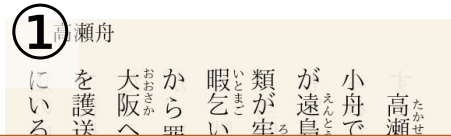

See "Credits" page for copyright informatoins of each images
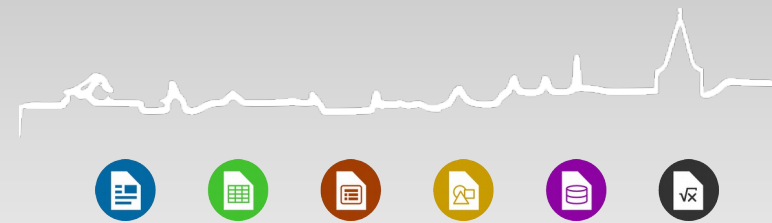
Typical use-cases of vertical writing

- Non-technical / Scientific publications
  - Novels①
  - Mag...
  - Pap...
  - Bus...
    Science books
  - School Education
- Letter③
- Diploma④

NOT for specific people
Used in usual business

① ② ③ ④

Vertical Writing is key feature for...
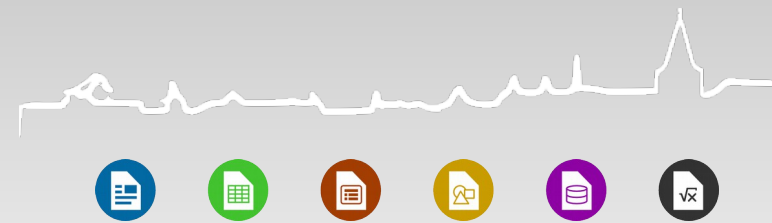
- (non-professional) Novel writers
  - … to publish their novels personally
- Teachers
  - … to make drills / exams / subtexts
- Public Organizations
  - … to make "FORMAL" letters
    - Elder people thought **vertical writing letter is more formal** in our culture
  - … to create their own magazine / papers
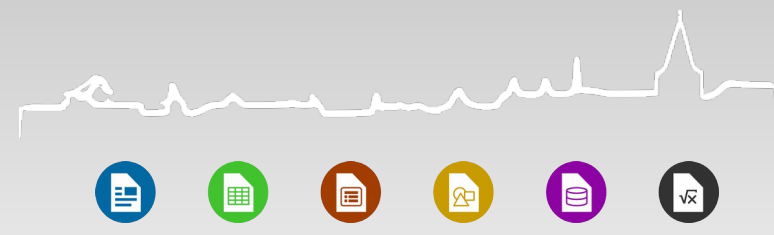
Current implementation of LibreOffice vertical writing

LibreOffice for Japanese
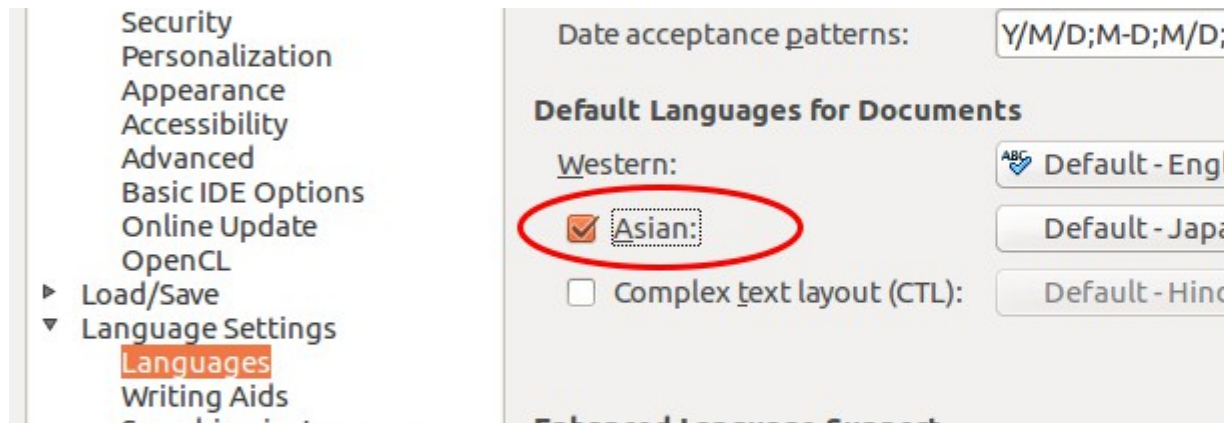
- Translations
  - UI / Help
  - Release Notes / Annoucements
  - Documents...
- Functions
  - Basic CJK text rendering (CTL Support)
  - Japanese specific rendering (see next slide)
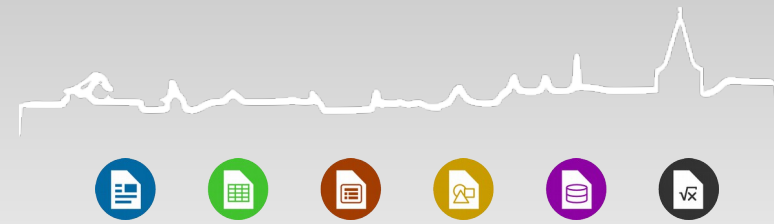 - JP locale specific features
    - e.g. Japanese Calender

How to use vertical writing

❚ Need to enable "Asian" language support in Option ▶ Language Settings ▶ Langugage
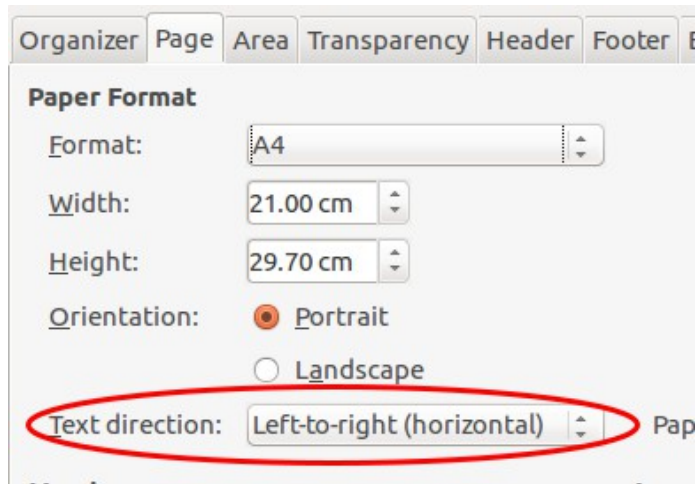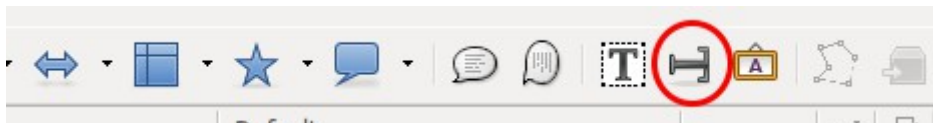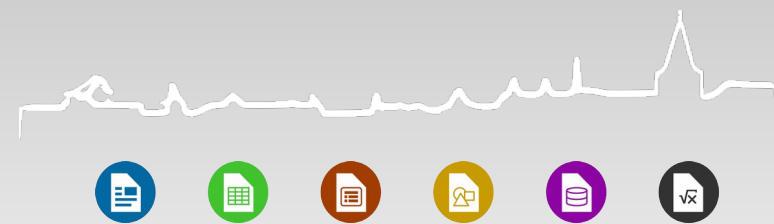

❚ Format ▶ Page ▶ Text Direction appers (in Writer)

How to use vertical writing (cont'd)

◥ Format ▶ Page ▶ Text Direction appers (in Writer)

◥ … or "vertical text" box icon can be seen in the "Drawing" toolbar (Calc, Impress and Draw)

Functionality

IPA Gothic   Noto Sans CJS

- ❧ Page can be set text direction in Writer
- ❧ Or create "vertical writing" box as well (Calc, Impress, Draw)
- ❧ Basically works well
  - ❧ Even vertical-writing support fonts are needed
- ❧ Several "corner-case" bugs
  - ❧ … will discussed later
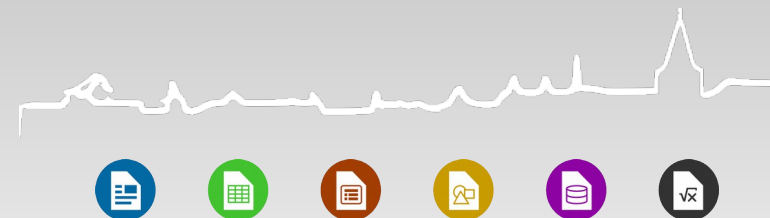
あ聞「今
り い私日
がて の は、
とく話
う れ」を
。て

あ聞「今
り い私日
がて の は、
とく話
う れ」を
。て

Implementation

- Starting point:
  b14861e1dfb9f83d26d6032ae96b664845528f2a
  - Fix tdf#77514 CJK ruby text in RTL(vertical) base line issue.
  - Thanks **Mark Hung** to his great works about CJK!!!
- Looking into this…
  - IsVertical() function tell us it's in vertical writing mode
  - git grep "IsVertical()" sw
    - Many many many…

```
if (xxx->IsVertical()) {
    ...
```
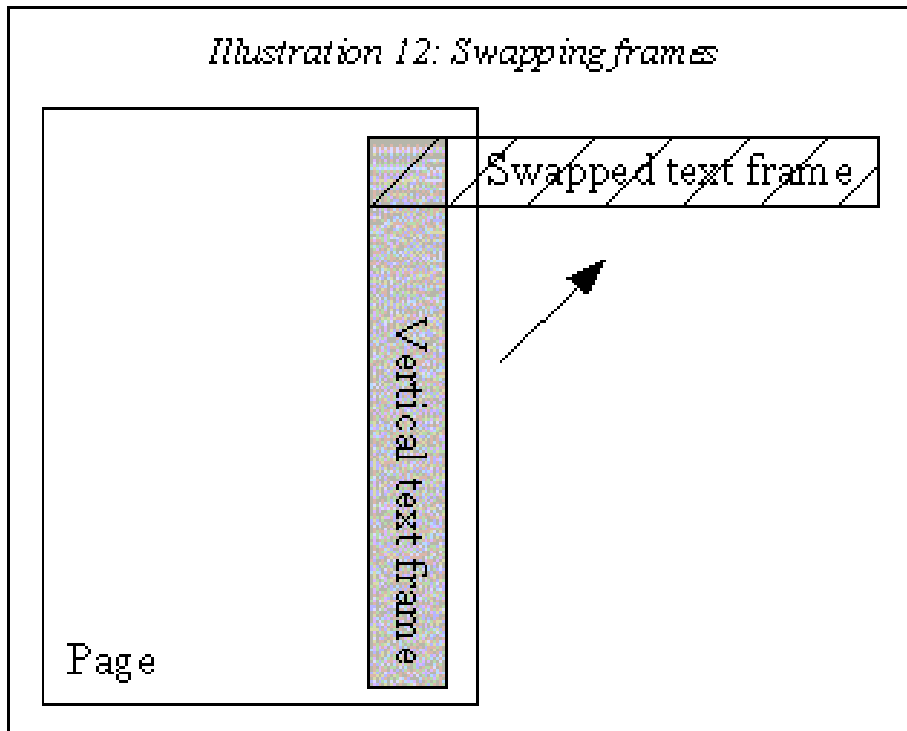X-(

Implementation (cont.d)

➤ Back to the document and found the "swapped frame"
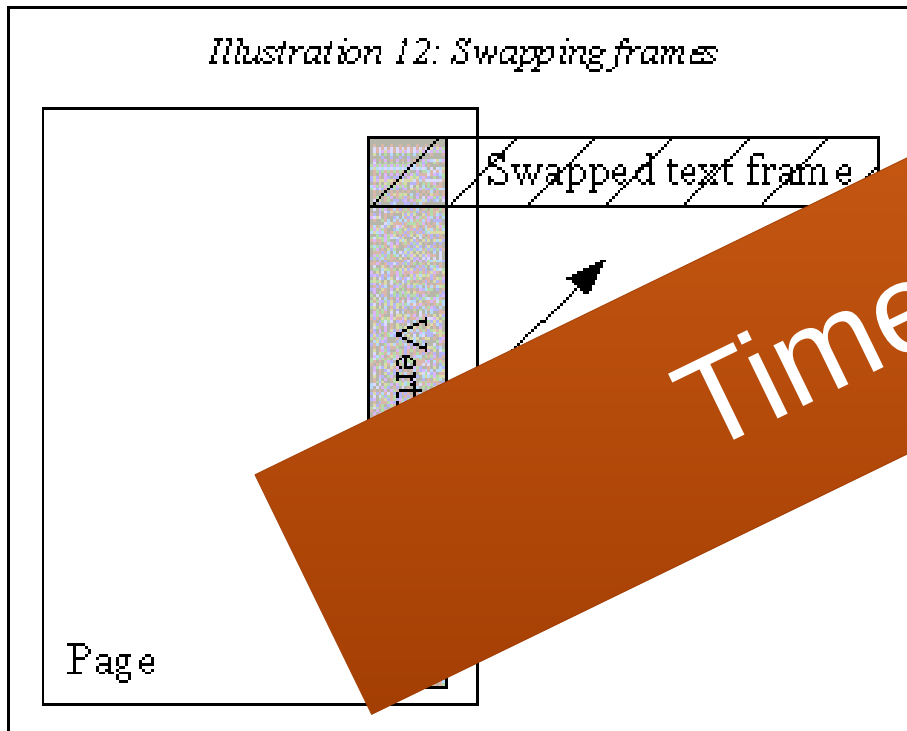

Illustration 12: Swapping frames

"The three main tasks of the text formatting (formatting paragraphs, painting of text and cursor travelling) are **performed on swapped frames** and afterwards the results are translated back."

"Writer/Text Formatting" - "Vertical formatting"
https://wiki.openoffice.org/wiki/Writer/
        Text_Formatting#Vertical_Formatting
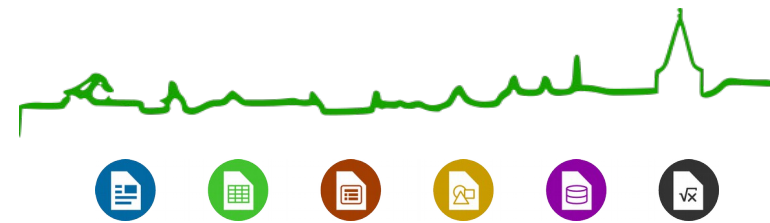
Implementation (cont.d)

▶ Back to the document and found the "swapped frame"

Illustration 12: Swapping frames

Swapped text frame

Vert

Page

"The three main tasks of the text formatting ... (painting of text ... travelling) **are performed on swapped frames** and afterwards the results are translated back."

"Writer/Text Formatting" - "Vertical formatting"
https://wiki.openoffice.org/wiki/Writer/
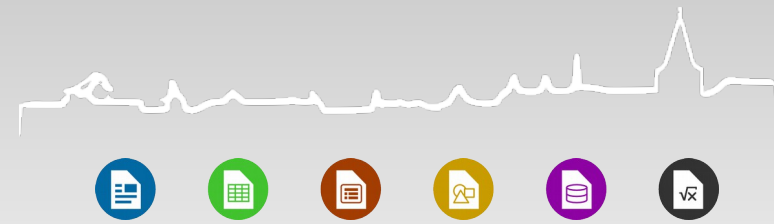   Text_Formatting#Vertical_Formatting

Time up!

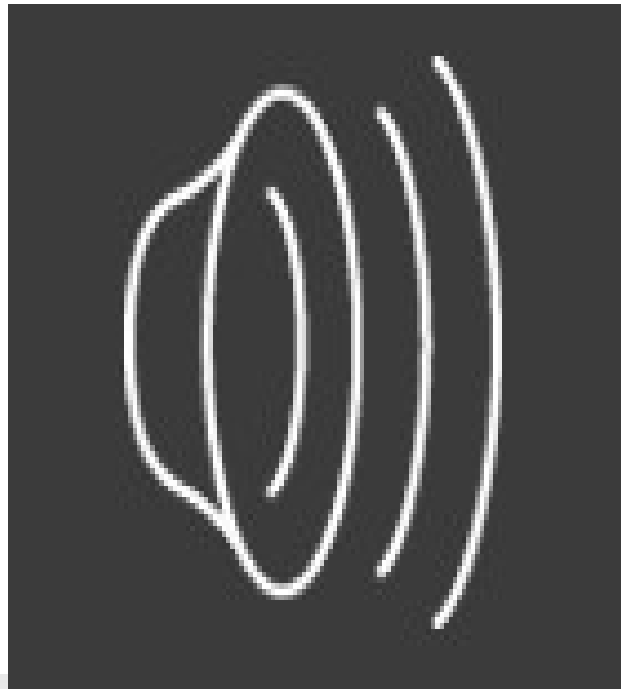# Deeper look of LibreOffice vertical writing

… Functional (end-users) view

Note: the goal of this talk is NOT reporting bugs, my point is there are many "corner case" specifications that should be cared by us (Japanese users / developers)
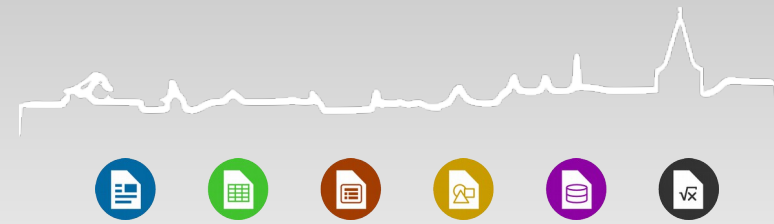
Rendering bug in Mac OS X

- Problem with input method…?
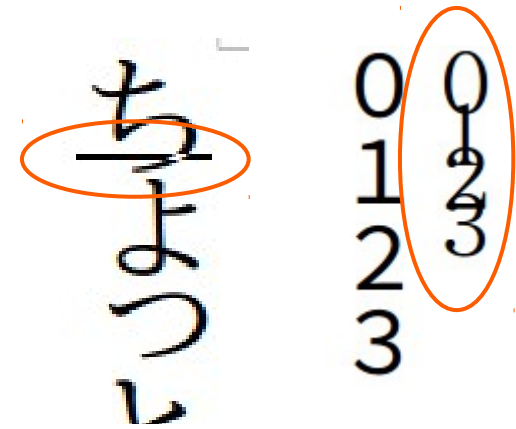 - Seems the effect of font metrics
  - e.g., IPA Gothic vs. Hiragino

Proportional fonts

- Basically, **non-proportional** fonts should be used in vertical writing mode

  5.0 Ubuntu
  IPA Gothic

- However, default font sets of Writer are **proportional**
  - Easy to make a mistake
- There are several rendering issues with proportional fonts
  - Wrong usage but MS Word seems OK
  - Having a **specific default font for vertical writing** is considerable option

Western characters

- Basically, western characters **should rotate 90° clockwize**
  - If you won't, use FULLWIDTH LATIN (U+FF21-FF3A, U+FF41-FF5A)
- In OS X, the rotating doesn't work if we combined Western font
  - IPA Gothic + Liberation Sans
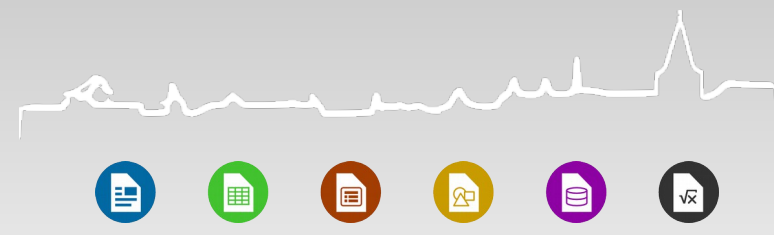 - Using Hiragino, not only as Asian font but also Western font is OK

↓5.0 Ubuntu
IPA Gothic +
Liberatioon Sans

5.0 OS X↑
IPA Gothic +
Liberatioon Sans

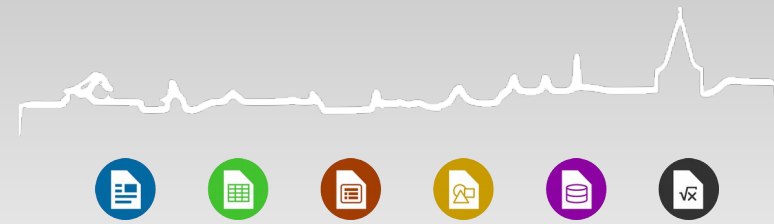# Horizontal-in-vertical composition

- Horizontal-in-vertical composition (縦中横 ； tate-chu-yoko)
  - Format ▶ Character... ▶Position Rotation / Scaling: 90 degrees
- Hard do find for end users
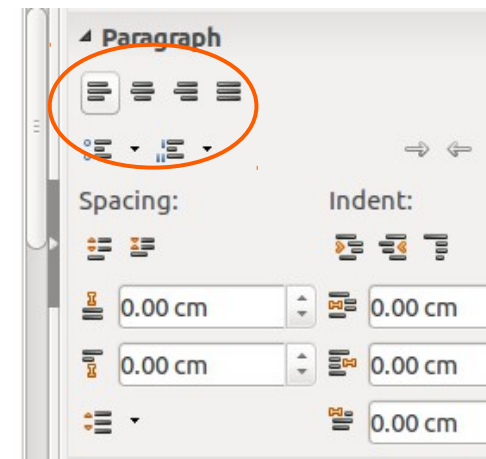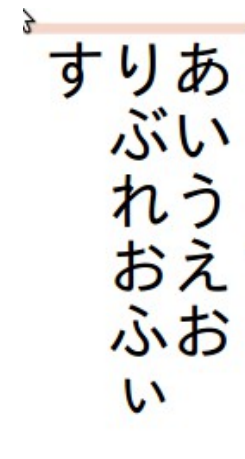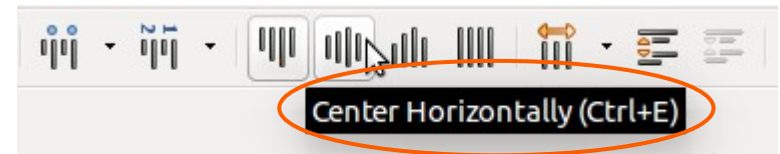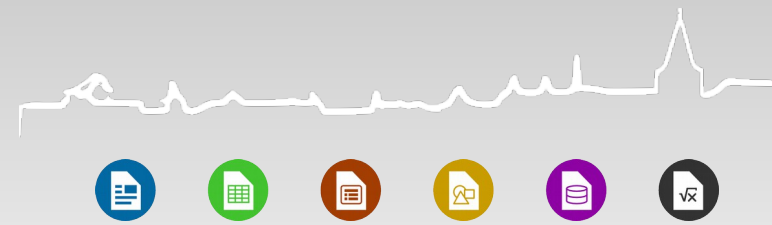 - Any shortcut?
  - MS Word has ;)
  - (could be an extension??)

Minor UI Issues

- Common:
  Some images indicate a form of document should be rotated
- Tool Bars
  - Icons are OK, but tooltips aren't
- Side Bars
  - Icons don't rotate
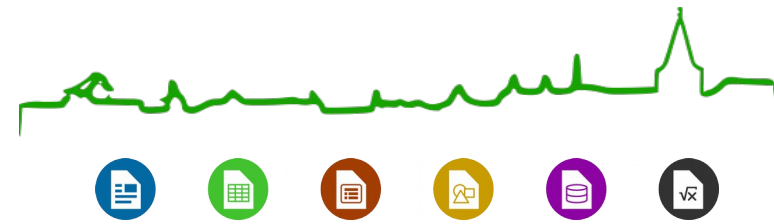 - "text direction" icons doesn't exist even the "text formatting" toolbar has
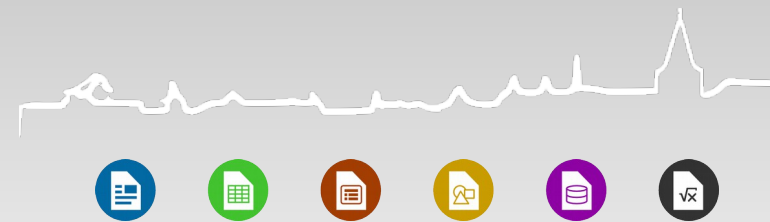
Minor UI Issues (cont'd)

- Format ▶Page, "Columns" tab
  - Image preview tells columns split vertically,
  - But actually split horizontally

Conclusion

Vertical Writing is...

- Used in normal documents, in usual business scene
- Key feature for some kind of people

Vertical Writing in LibreOffice is...

- **Works well** in generally use, but there is **some room to improve**
- To fix rendering problems, deep dive into Writer's (complex) rendering code
  - But we, Japanese, must try because we know **how vertical writing should work**
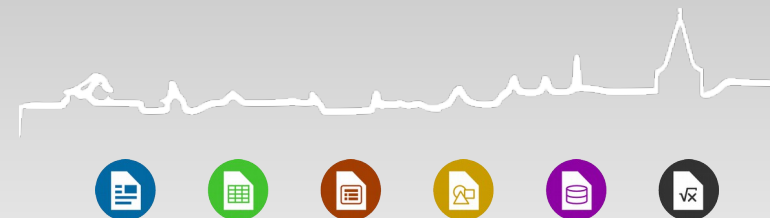- Some UI improvements are **good exercises** for **development newbie (like me!)**

Thank you having an interest!

- I hope I will fix a "easy-to-fix" bug in the term of this conference
- Please brave, and mentor me :)

Credits

- ① Mori Ōgai, "Takasebune," Aozora-bunko
  http://www.aozora.gr.jp/cards/000129/card45245.html
  Public Domain

- ②ASCII Media Works, Ubuntu Magazine Japan vol.10
  http://ubuntu.asciimw.jp/elem/000/000/010/10558/UM10_P4-7.pdf
  Creative Commons 3.0 BY-NC-SA

- ③ お礼状、案内状、手紙の書き方と例文
  (Writing how-to and examples of thanks letters, invitation letters and other letters)
  http://letter.sincerite-shop.com/sub38.html

- ④Wikipedia 「賞状」 (Diploma)
  https://ja.wikipedia.org/wiki/%E8%B3%9E%E7%8A%B6