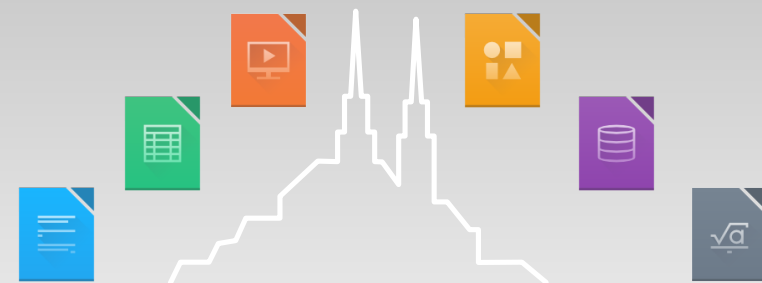


## Calc Beyond Cells

- ▼ Eike Rathke (erAck), Red Hat, Inc.
- ▼ 2016-09-08

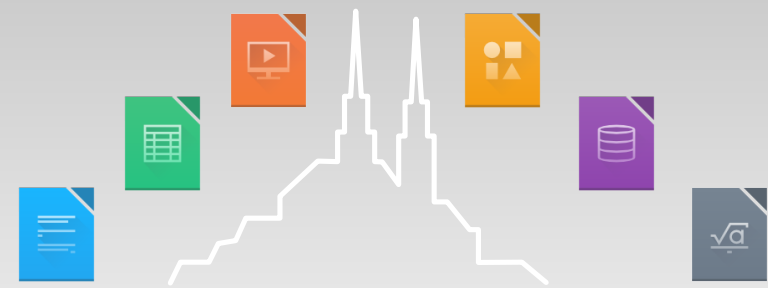
# About the Speaker



- ▼ Eike Rathke, known on the net as erAck
- ▼ Based in Hamburg, Germany
- ▼ Worked on StarOffice from 1993 to 2000 for Star Division
- ▼ Worked on OpenOffice.org from 2000 to 2011 for Sun Microsystems and one other company
- ▼ Works on LibreOffice since 2011, employed by Red Hat, Inc.
- ▼ Areas of expertise:
  - ▼ Calc core, formula compiler and interpreter
  - ▼ number formatter/scanner
  - ▼ i18n framework, locale data
- ▼ Also mentor and knowledge spreader whenever possible
- ▼ Web site <http://erack.de/>

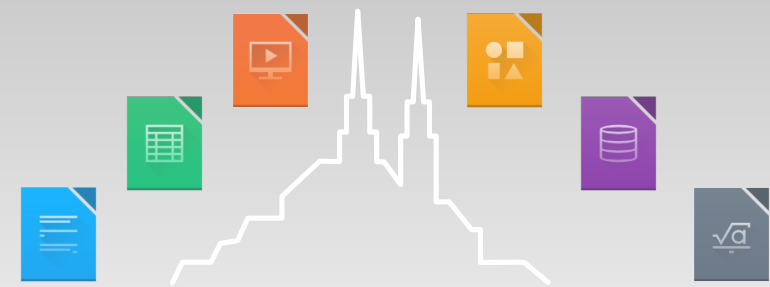


# Agenda



- ▼ There's none..
- ▼ Anyway, what happened since Aarhus 2015
  - ▼ not in terms of release notes, you can read those at
    - <https://wiki.documentfoundation.org/ReleaseNotes/5.1#Calc>
    - <https://wiki.documentfoundation.org/ReleaseNotes/5.2#Calc>
  - ▼ but drawing data from the git repository

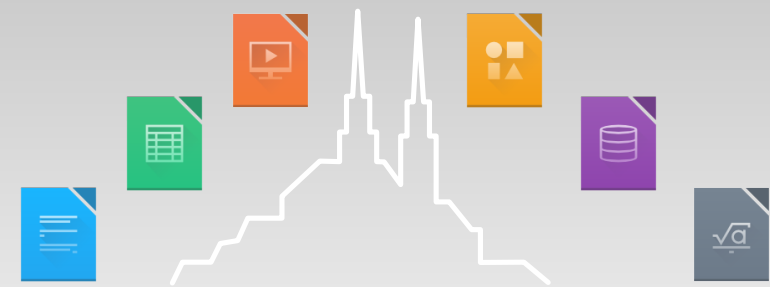
# The Long Tail



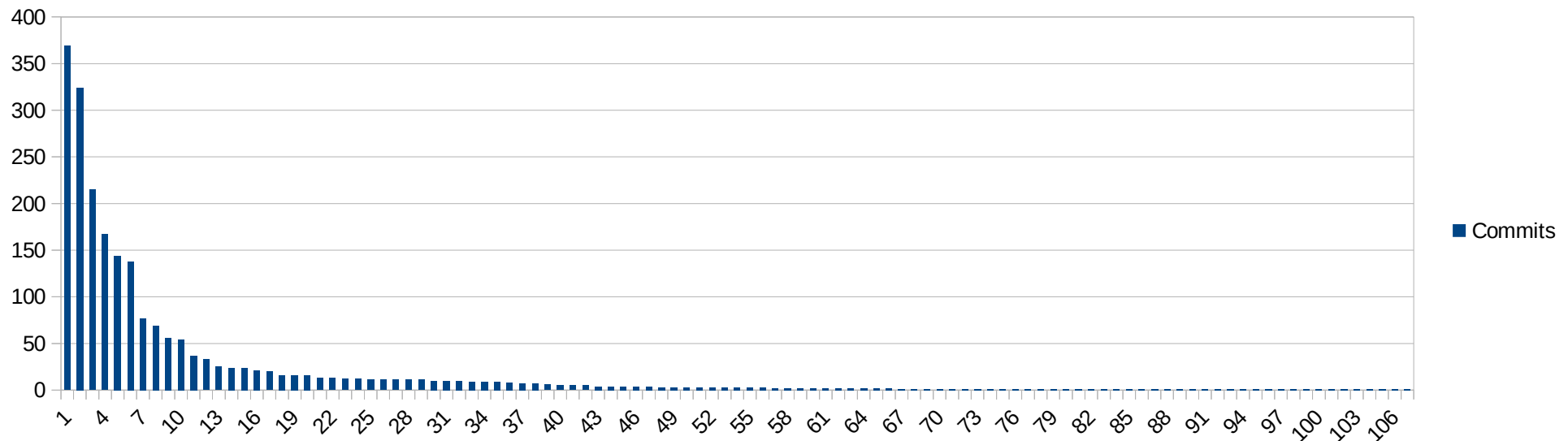
- ▼ All LibreOffice commits from 2015-10-01 to 2016-09-01
  - ▼ 15484 commits by 287 authors
  - ▼  $15484 / 2 = 7742$
  - ▼ the top 5 (1.7% of all) authors contributed 2582, 1858, 1856, 1022 and 633 commits, together 7981 commits, about the half of all commits



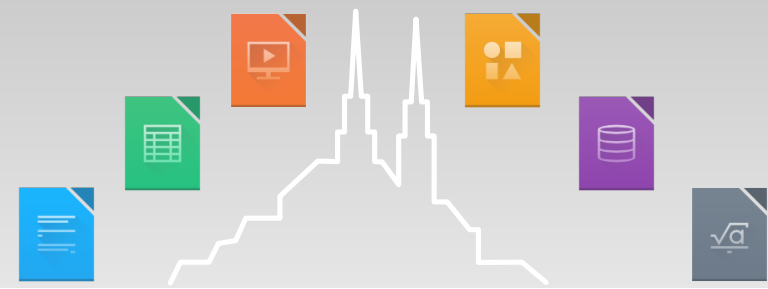
# The Long Tail



- ▼ All Calc commits from 2015-10-01 to 2016-09-01
  - ▼ 2158 commits by 107 authors
  - ▼  $2158 / 2 = 1079$
  - ▼ the top 4 (3.7% of all) authors contributed 369, 324, 215 and 167 commits, together 1075 commits, about the half of all commits

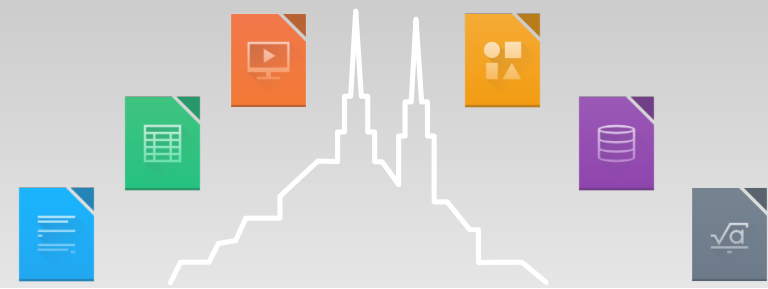


# The Fifth Fun Factor

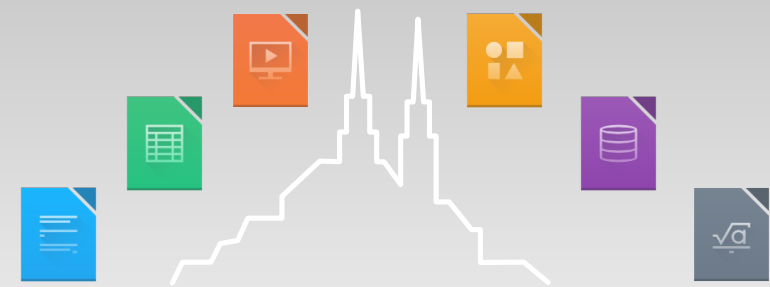


- ▼ The average number of commits per author roughly equals one fifth of the total number of authors
  - ▼ All: 15481 commits by 287 authors  
average ~53.95 commits,  $287 / 53.95 \approx 5.32$
  - ▼ Calc: 2158 commits by 107 authors  
average ~20.17 commits,  $107 / 20.17 \approx 5.31$
  - ▼ Writer: 2102 commits by 110 authors  
average ~19.11 commits,  $110 / 19.11 \approx 5.76$

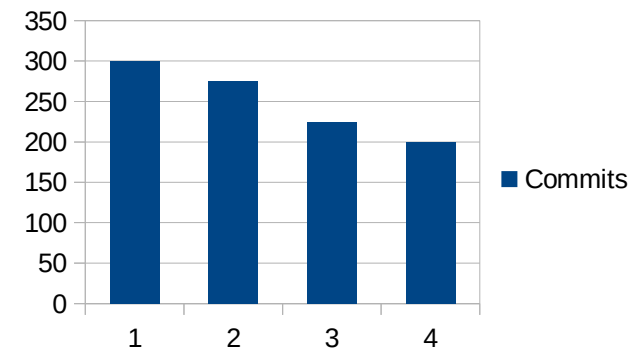
# Engagement & Diversity



- ▼ The median number of commits: 50% of authors committed more, 50% of authors committed less
- ▼ ratio of average to median, the nearer to 1 the more “conform” or equal the distribution of committers
  - ▼ All: 15484 commits by 287 authors, average  $\sim 53.95$   
median 4 commits, ratio  $53.95 / 4 \approx 13.49$
  - ▼ Calc: 2158 commits by 107 authors, average  $\sim 20.17$   
median 3 commits, ratio  $20.17 / 3 \approx 6.72$
  - ▼ Writer: 2102 commits by 110 authors, average  $\sim 19.11$   
median 2 commits, ratio  $19.11 / 2 \approx 9.55$

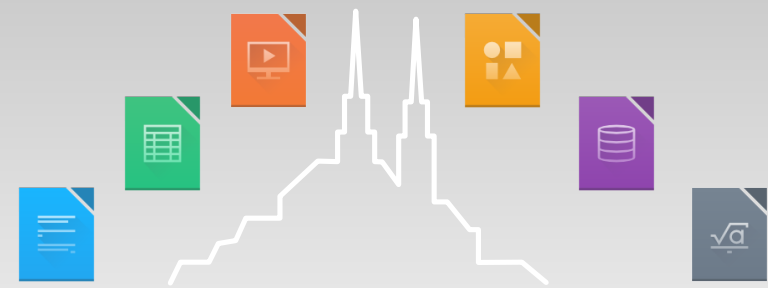


- ▼ A hypothetical project with 4 authors and 300, 275, 225 and 200 commits each
  - ▼ the top 2 (50% of all) authors would contribute half of all commits
  - ▼ 1000 commits by 4 authors would give average 250 commits,  $4 / 250 = 0.016$   
median 250 commits  
ratio average to median:  $250 / 250 = 1$
- ▼ very low authors per average number  
no diversity  
⇒ no fun (scratch my itch) factor



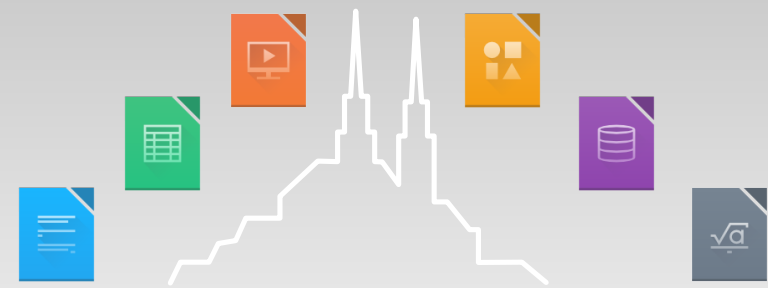


# Commit Types in Calc



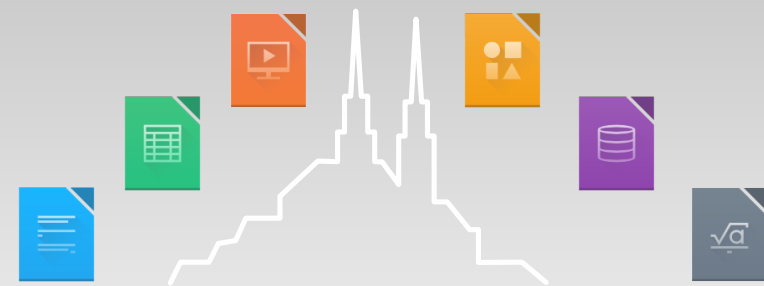
- ▼ Of 2157 commits
  - ▼ 444 code cleanups and fixups (noelg, sberg)
  - ▼ 42 coverity (coverity#,cid#) (mostly caolan)
  - ▼ 570 bug related (tdf#,rhbz#), including enhancement implementations (77 authors)
    - ▼ 104 commits in sc/qa, bug fix related unit tests
  - ▼ 1087 without bug number (64 authors)  
anything from small change to large scale feature
    - ▼ 419 unit test commits in sc/qa (30 authors), of which 219 are new spreadsheet functions tests (raal)

# Commits with tdf#



- ▼ 566 commits with tdf#[0-9]+
  - ▼ ranging from [tdf#30456](#) and [tdf#32834](#) to [tdf#101672](#)
    - ▼ tdf#30456 is “enhance Merge Cells dialog to empty cells”
    - ▼ tdf#32834 is “improve precision of MDETERM”
  - ▼ 327 unique bug numbers
    - ▼ top 5:
      - ▼ [tdf#72196](#) with 19 commits, “Implement wildcards” (erack)
      - ▼ [tdf#97831](#) with 15 commits, “New Excel 2016 functions” (winfried)
      - ▼ [tdf#39468](#) with 10 commits, “Translate German comments” (albert)
      - ▼ 4 bug numbers with each 7 commits
      - ▼ 5 bug numbers with each 6 commits

# Lines Changed



## ▼ sc/

- ▼ 58358 lines removed
- ▼ 716840 lines added
- ▼ sc/source/core/
  - ▼ 9889 lines removed
  - ▼ 16013 lines added

## ▼ sc/source/filter/

- ▼ 10809 lines removed
- ▼ 8676 lines added

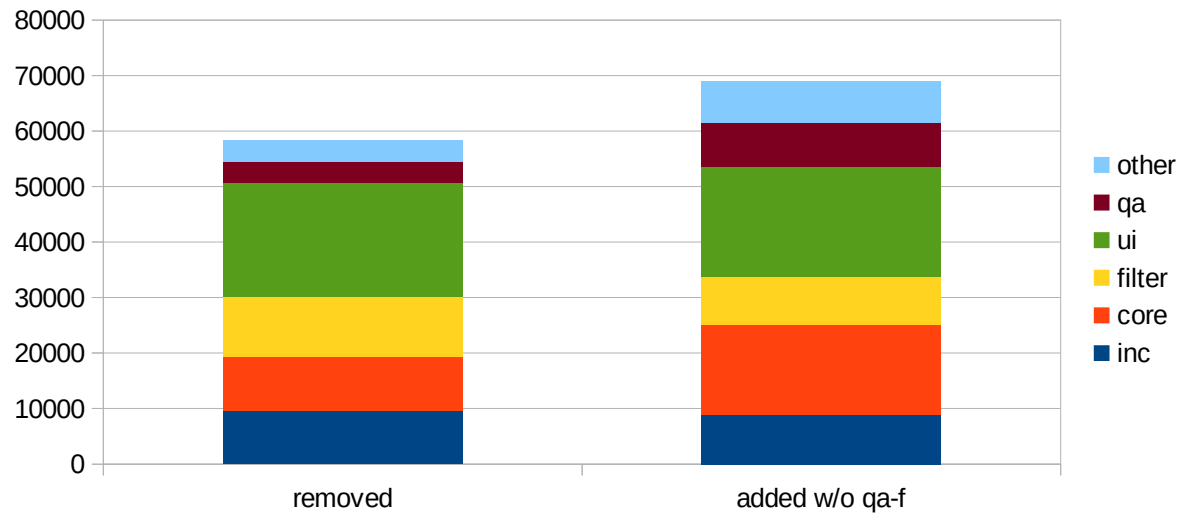
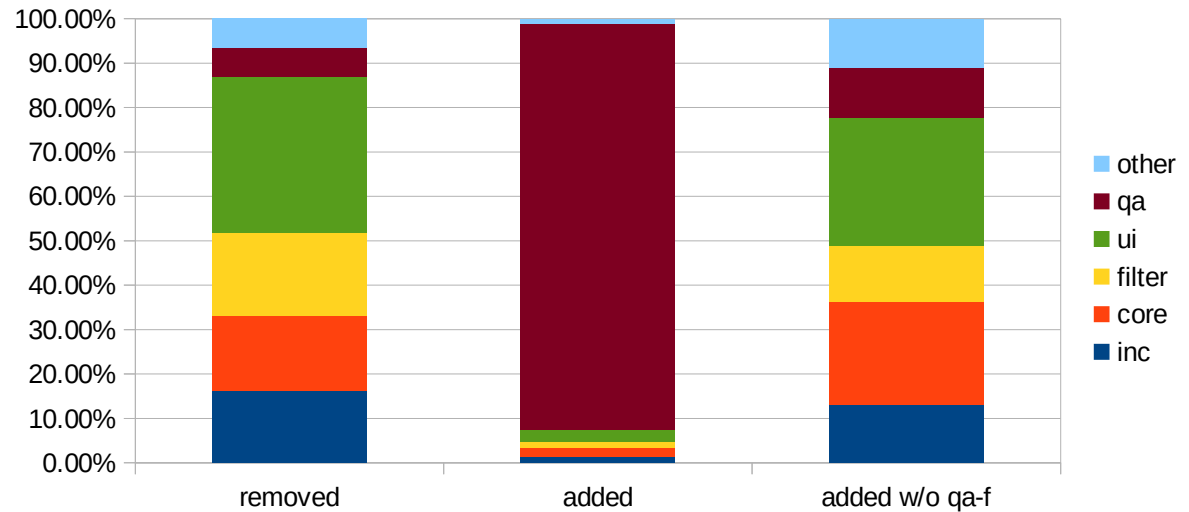
## ▼ sc/source/ui/

- ▼ 20605 lines removed
- ▼ 19938 lines added

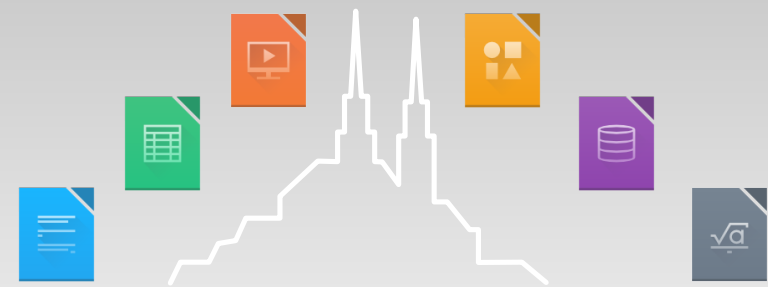
## ▼ sc/qa/

- ▼ 3700 lines removed
- ▼ 655620 lines added

- ▼ 647814 under sc/qa/unit/data/functions/ (function test documents .fods)



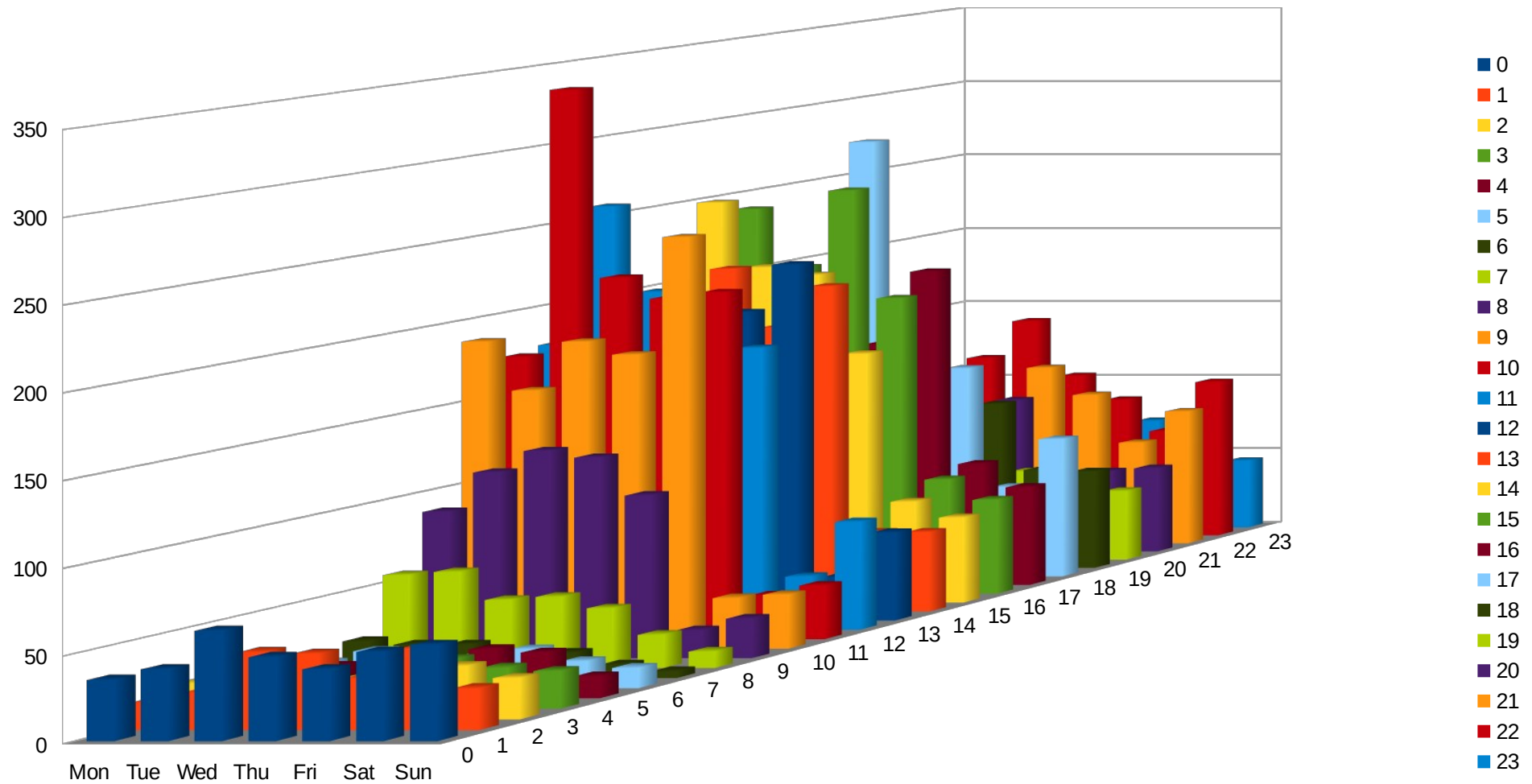
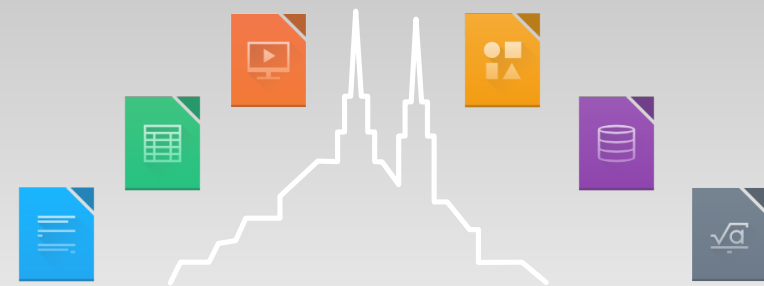
# Some Commands Used



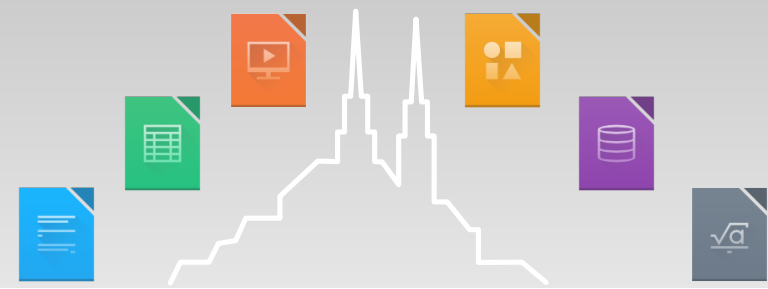
- ▼ Authors sorted by number of commits:
  - ▼ `git shortlog --since=2015-10-01T00:00:00 -n sc | grep '^([ ]\.\+):' | sed -e 's/^(.\+ )\([0-9]\+\):/1;2/'`
    - ▼ import as semicolon separated .csv
- ▼ Summaries with author;subject:
  - ▼ `git log --since=2015-10-01T00:00:00 --pretty='format:%aN;%s' sc`
    - ▼ import as semicolon separated .csv
- ▼ Authors of a topic:
  - ▼ `git log --since=2015-10-01T00:00:00 --pretty='format:%aN;%s' sc | egrep '(coverity|cid)#' | sed -e 's/^\([^;]*\);.*1/' | sort -u`
- ▼ Sort commits by tdf# bug numbers:
  - ▼ `git log --since=2015-10-01T00:00:00 --pretty='format:%aN;%s' sc | grep 'tdf#' | sed -e 's/^(.*tdf#)\([0-9]\+\)\(.*\)2;1\2\3/' | sort -n`
    - ▼ import as .csv and create a pivot table of bug numbers in rows and count

Note: all without .mailmap file, there are ~3 author aliases in Calc and a few more in All.

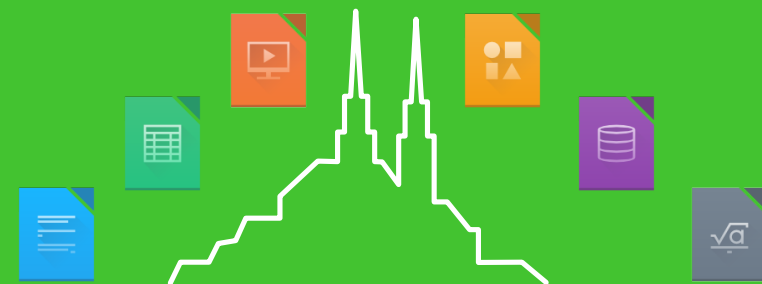
# Commits per Hour of Week



# Questions?



I might be able to answer..



## Thank you ...

- ▾ ... for using LibreOffice!
- ▾ ... for supporting LibreOffice!
- ▾ ... for hacking LibreOffice!



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