



# LibreOffice

The Document Foundation

## Collaboration & Hacking with us

*Fun stuff, you can get involved with ...*

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*“Stand at the crossroads and look; ask for the ancient paths, ask where the good way is, and walk in it, and you will find rest for your souls...” -  
Jeremiah 6:16*



# Collaboration in two forms

- Interactive document editing
  - a design overview
  - some nuts & bolts
  - current status / demo
- Interactive code improvement
  - where you can get stuck in ...
- Conclusions

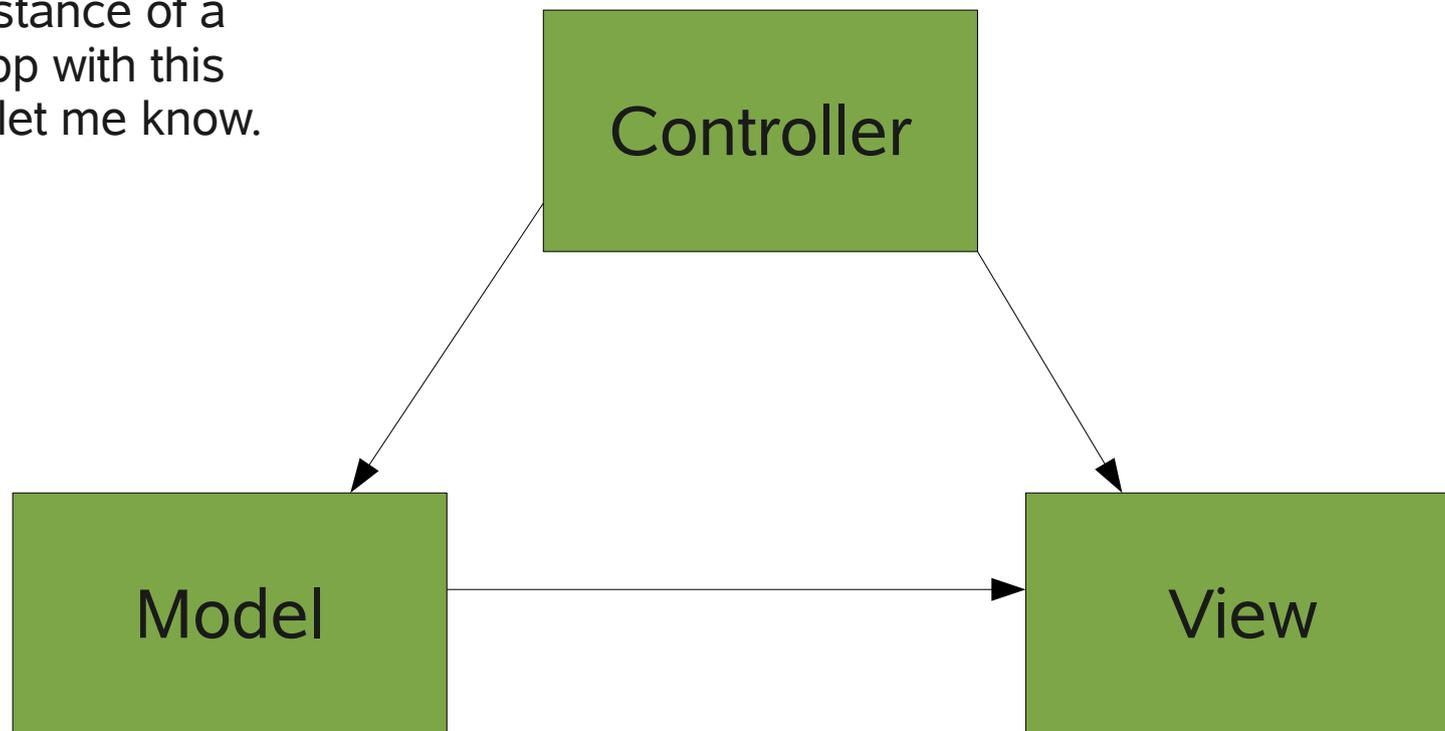
Interactive Document Editing ...

# Interactive Document Editing ...

- Everyone wants more than E-mail
- No-one wants to setup yet-another server
- Everyone has IM working already
- The Telepathy framework
  - A pleasant IM abstraction / API
  - Messages for edits, file transfer for bulk.
- So – use I/M to bootstrap communication

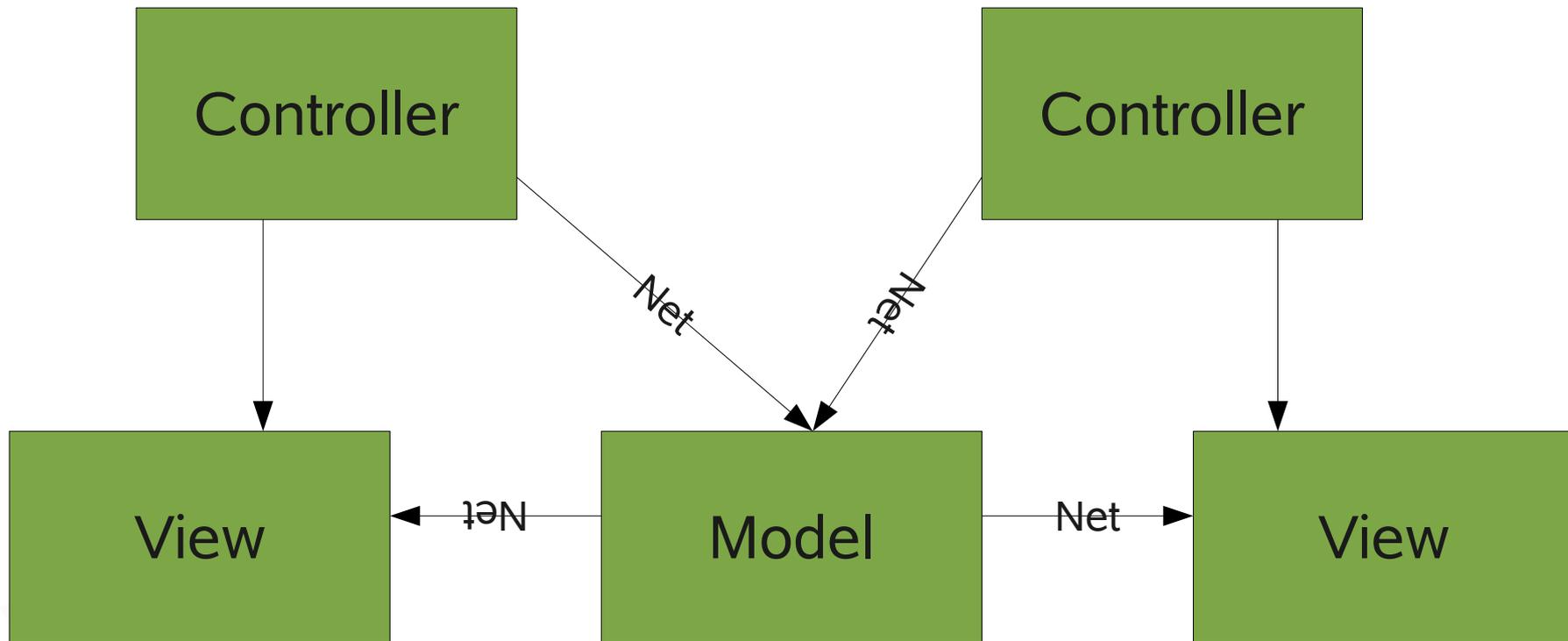
# An idealized view of perfect S/W

If anyone finds an ideal instance of a large app with this model, let me know.



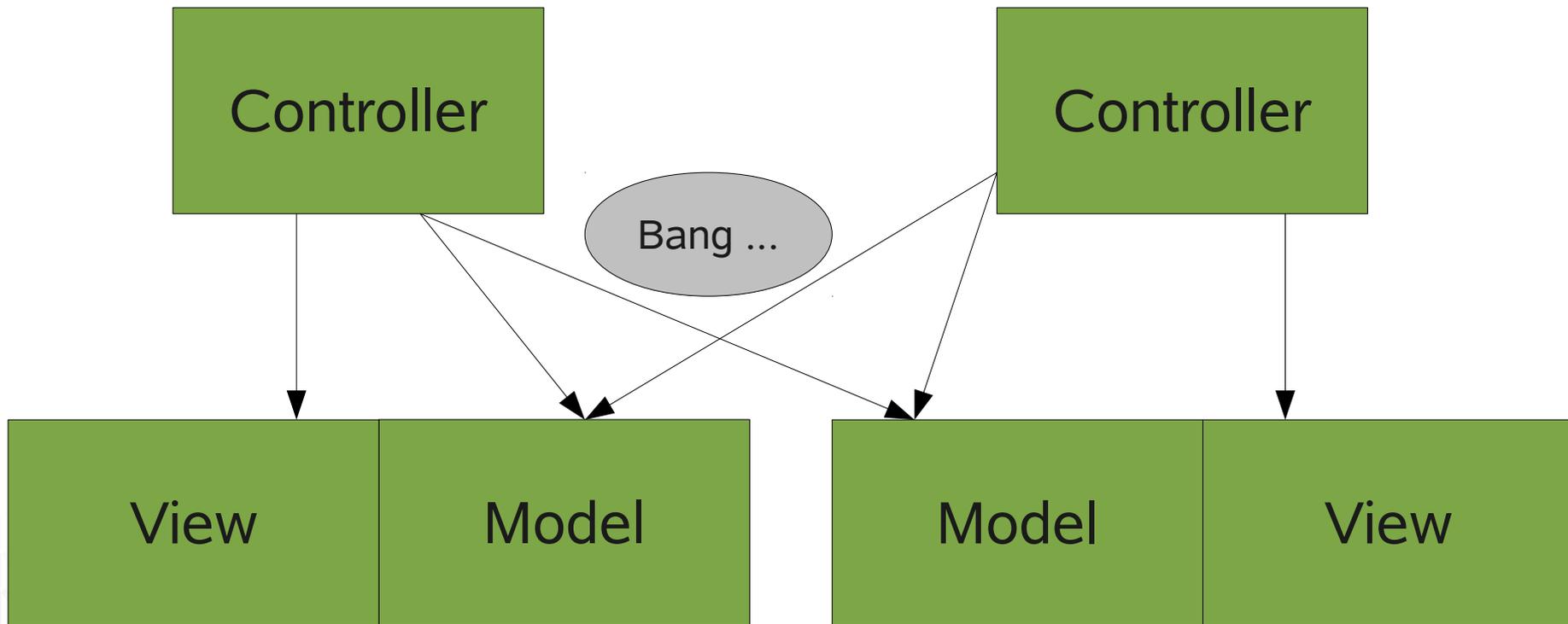
# One idealized view of perfect S/W

So – just get two controllers and two views – right ? Easy ...



# Another idealized view ...

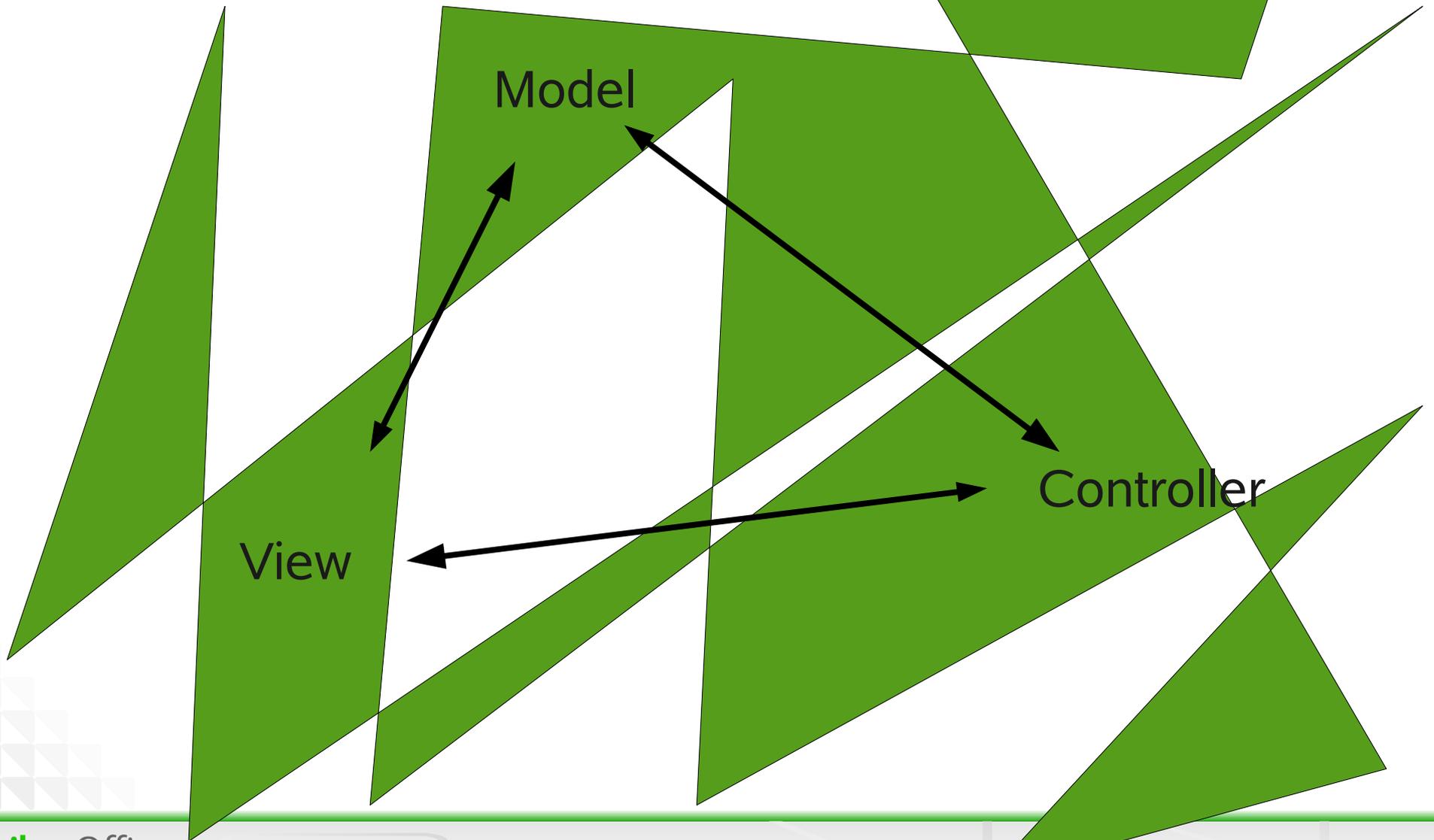
Or synchronize the models,  
reconciling conflicting edits, or  
adapting their representations ...



# Actual simplified (inherited) view

Not quite the amusing:

```
class ModelViewController { ... };
```

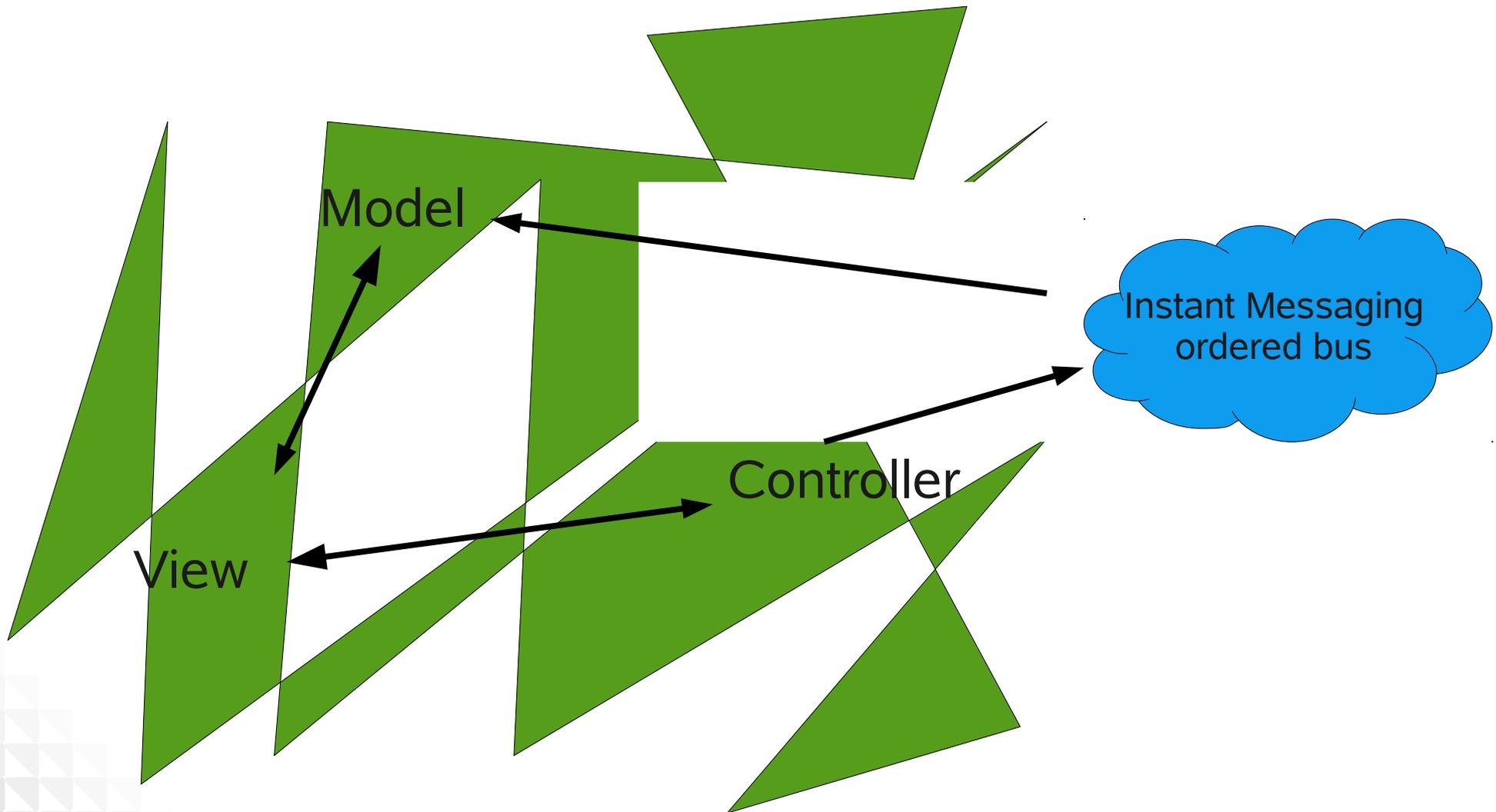


# So what can we do ?

- Make some hard up-front design decisions:
  - Ordering is King
    - It doesn't matter what you do **but**
    - **always** do everything, everywhere in the same order, on every client – and we will have consistent documents.
  - Interactive conflicts can be dealt with by users as they occur: both edit the same cell, and see who wins ...

# Adapted, collaboration design:

By no means perfect but functional.



What does that mean ?

# Some consequences ....

- Constraints:
  - cell editing is applied asynchronously ...
    - eg. enter “foo” in A1
      - edit sent to the IM bus
    - user moves to another cell
      - apply all messages from IM bus in order
      - “foo” entered into A1 ...
  - Potential latency issue
- But:
  - Implementable is feasible in linear time
  - No blue-sky monster re-work necessary ...

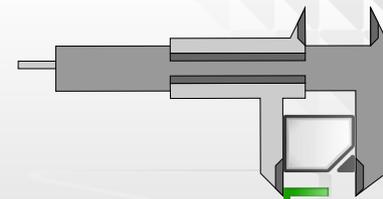
Demo ...

# The Star Trek future ...

- Autosave/recover is a user-experience nightmare
- Save is not much better ...
  - serialize state & fsync to disk as you type
  - cleverly journal inside .zip, replay state on load
  - requires intercepting some view state changes too
- Use these operations for UI behaviors
- Re-use them for undo / redo ...
- *<smoke something whacky here>*
  - standardization ...
    - also use for change tracking !!?!>!?! :-)
  - revision control systems & full history in file ... etc.

Collaboration on development ...

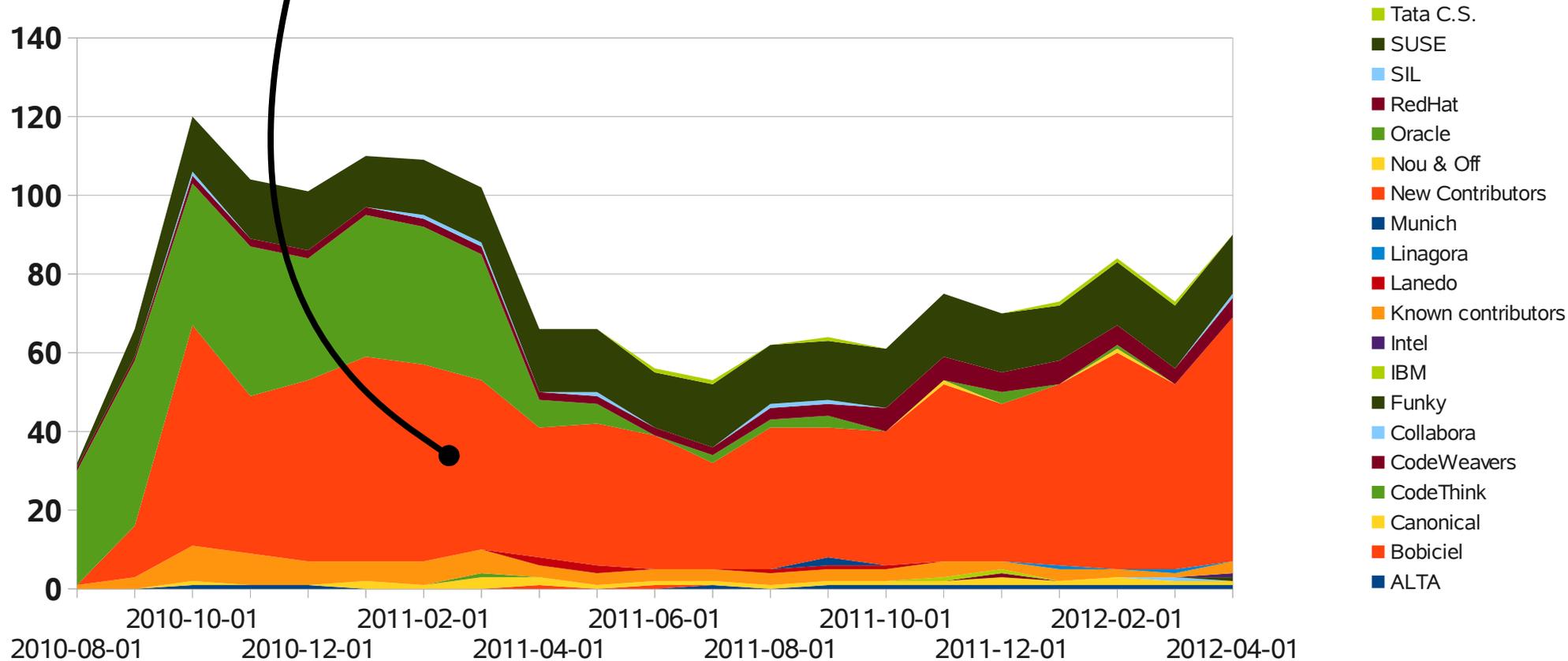
# Including new contributors ...



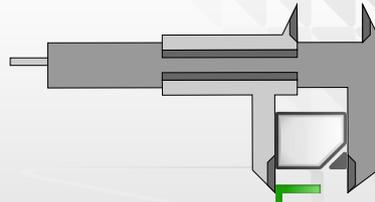
- Steadily diversifying and growing the team ...

## New guys since we launched

Developers per month by affiliation

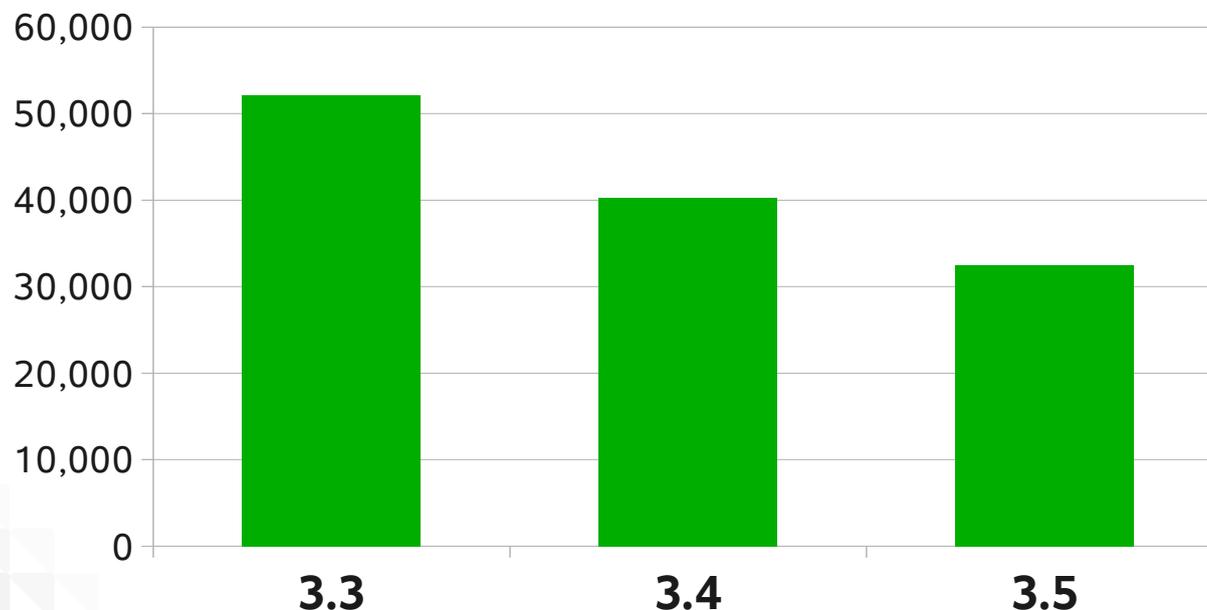


# Translating German Comments



- ▶ Making things **significantly** easier for non-Germans ...
- ▶ We removed or translated **~20k lines** of these so far
- ▶ We still have **32k to go**: done mostly by new guys ...
- ▶ **If you speak German – please help**

Detected lines of German comment



*With thanks to (recent translators):*

**Philipp Weissenbacher**  
**Luc Castermans**  
**Mike Whiteley**  
**Christina Rossmannith**  
**Winfried Donkers**  
**Michael Stahl**  
**Tim Hardeck**  
**Noel Grandin**  
**Matteo Casalin**  
**Cor Nouws**  
**and many more !**

# Pick something cool to hack on ...

- ▶ Tons of fun stuff to do from easy cleanup to bigger features
- ▶ Easy Hacks:
  - ▶ Lots of fun things to get stuck into ...
  - ▶ [http://wiki.documentfoundation.org/Development/Easy\\_Hacks](http://wiki.documentfoundation.org/Development/Easy_Hacks)
- ▶ Lots of projects in LibreOffice have a big impact

	Android	On-line	App	iPhone
UI simplification / cleanup	X	X	X	X
Tiled page rendering	X	X		X
Memory reduction	X	X	X	X
Linking re-structuring (LTO)	X		X	X
Collaborative editing	X	X	X	X
Fast startup	X	X	X	X
CoreText rendering			X	X

# Google Summer of Code collaboration ...

- ▶ Andrzej Hunt - **Smartphone remote control** for Impress
- ▶ ArturoPL - Tooling - More and better **unit tests**
- ▶ Brennan Vincent - Implementing a **Microsoft Publisher** import filter
- ▶ Daniel Bankston - **Calc Performance** Improvements
- ▶ Daniel Korostil - Lightproof [**grammar checker**] improvements
- ▶ Gökçen Eraslan - Signed **PDF export**
- ▶ iainb - Java **GUI** for Libre-Office Based **Android App(s)**
- ▶ Marco Cecchetti - Enhanced Impress **svg export** filter
- ▶ Matúš Kukan - **Telepathy** for **collaborative editing**
- ▶ Rafael - New **templates** picking **UI**

## Conclusions ...

# LibreOffice Conclusions



- **Interactive Collaboration is fun**
  - Lots more work needed teasing apart the core
  - This is something you can get involved in git: [feature/tubes2](#)
  - checkout the backing [blog / details](#)
- **LibreOffice is improving rapidly**
  - It's a fun place to hack with others to make a big difference ...
  - strike a dis-proportionate blow for freedom here
- **Thanks for all of your help and support !**
  - **we rely on you**, to prove the power of Freedom with us.
  - to get people **excited** about Free Software they use ...
- **Please do get involved** and help us ...

*Oh, that my words were recorded, that they were written on a scroll, that they were inscribed with an iron tool on lead, or engraved in rock for ever! I know that my Redeemer lives, and that in the end he will stand upon the earth. And though this body has been destroyed yet in my flesh I will see God, I myself will see him, with my own eyes - I and not another. How my heart yearns within me. - Job 19: 23-27*