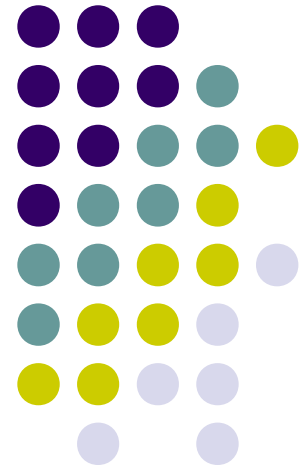


Travaux d'Etudes et Recherche: Genie Logiciel

**Apprendre techniques
travaux collaboratives**



About: Collaborative Work and Tools



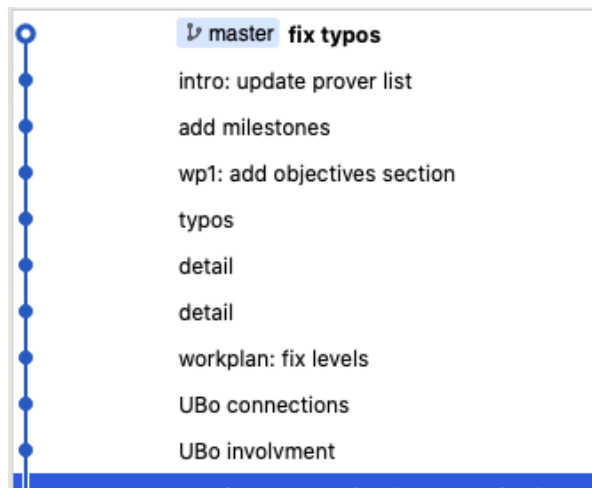
- Working in groups changes the work flow in many ways:
 - ... documentation is necessary
(teams change, newcomers, leavers, team structuring)
 - ... all work has to be versioned
(if not, communication is doomed)
 - ... mailing versions comes to a limit

About: Collaborative Work and Tools

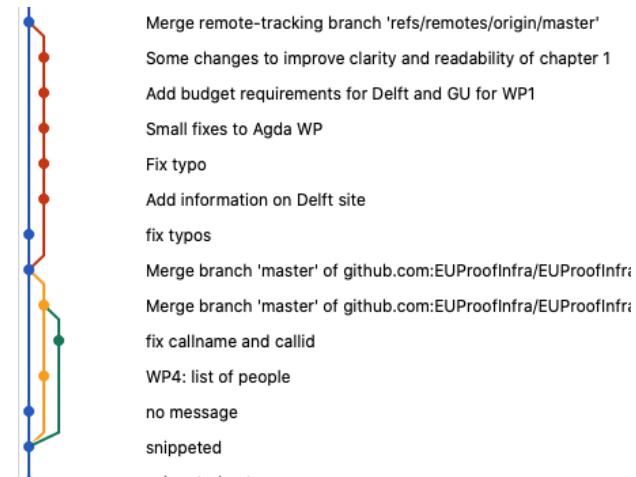


- To show it in a version graph:

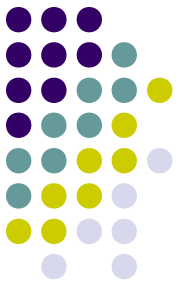
single fighter style:



collaborative style:



Problems of Group Work

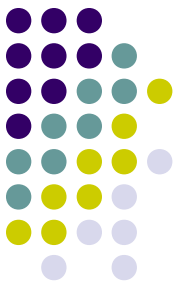


- ... separate work force into work groups
- ... defined clear tasks
 - organisational (who is responsible for what?)
 - documentation („based on“ ? deliverable ...)
 - technical (interfaces: import, export, ...)
- ... define (technical) procedures to combine results
 - groupware for joint editing
 - version control a la svn and git
 -
- ... control quality of combined results
 - reviews, machine-checked validations, tests

(Technical) Solutions

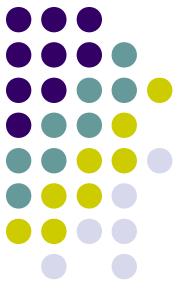


- Groupware
 - Jointly Editing Texts (low or high quality)
 - Jointly Developing Sources
 - version management
 - config management
 - task and bug - tracking
 - Jointly Managing Certifications



Jointly Editing Texts (low or high quality)

- Simple Collaborative Editors as Cloud Solution
 - (fairly) elementary quality,
 - support for text structure, pictures, tables, links
 - can be problematic wrt. intellectual property (Cloud!)
 - usually a “fast and fun“ solution
 - Concrete:
 - google doc
 - Microsoft Office Online
 - Dropbox Paper
 - Cryptpad
 - Nuclino
 - Etherpad:
 - Alternatives: see also <https://beebom.com/google-docs-alternatives/>



Jointly Editing Texts (low or high quality)

- Simple Collaborative Editors as Cloud Solution
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 - can be problematic wrt. intellectual property
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22. Januar, 11:25

100% ▾

Insgesamt: 1 Änderung ^ ▾

Grand Challenge

The long-term goal of this research collaboration is to address a Grand Challenge : Thorough Formal Development Methods and Tools for Embedded Systems, in particular Robotics Systems. The Challenge includes the modeling of the physics of environments over refinement and testing methods down to code generation and code verification for concrete target platforms. We focus on SE methods that target demonstrably **safe**, **secure** and **certifiable** systems. We start on the working hypothesis that the Isabelle system is **the** adequate basis for the integrated process support (rather than trying to combine various tool-chains in some round-engineering approach) and the unique final correctness control instance in the unified process.

Versionsverlauf

Nur benannte Versionen anzeigen

MITTWOCH

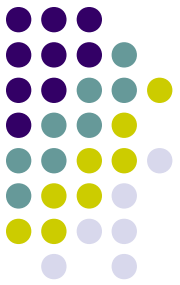
- ▶ 22. Januar, 11:25
Aktuelle Version
● Simon Foster

LETZTE WOCHE

- ▶ 16. Januar, 17:05
● Burkhart Wolff

DIESEN MONAT

- 10. Januar, 13:07
● Burkhart Wolff



Jointly Editing Texts (low or high quality)

- Wiki's, Messengers, ...
 - wiki (hawaïen: “vite”)
 - In a typical wiki, text is written using a simplified markup language and often edited with the help of a rich-text editor.
 - typical wiki language: **markdown**, configurable with style sheets.

Editing IsabelleClub.20160210Meeting

```
by(auto simp: valid_SE_def bind_SE_def assert_SE_def)
qed
{:endbrush:}
{:divend:}

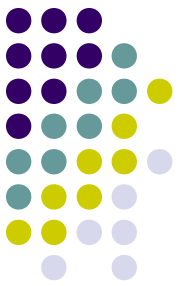
On note ici l'usage de la règle @@List.rev_induct@@ qui permet de raisonner sur un invariant d'exécution. Le théorème
prouve que l'état de régulation est inatteignable sans l'occurrence de l'input cruise .

* Chantal propose d'utiliser les relations pour formaliser la fonction de transition. Il suffit ensuite de générer la
fermeture transitive pour raisonner sur les chemins d'exécution.

{:brush=isabelle:}
definition step' :: "inputs => cruise_state rel"
where
  "step' x = {(σ,σ'). step x σ = Some((), σ')}"

definition steps' where "steps' ≡ step' inputs.on U step' off U step' brake U step' standby "

find_theorems name:"induct" "_!*"
theorem "{(σ;0,σ) ∈ (steps')!*" ⇒ ¬ cruise_state.cruise σ"
apply(erule rtrancl.induct)
{:endbrush:}
```

Jointly Editing Texts (low or high quality)

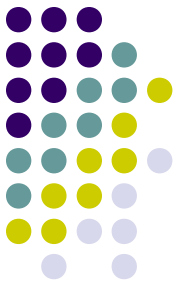
- Wiki's, Messengers, ...
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On note ici l'usage de la règle `List.rev_induct` qui permet de raisonner sur un invariant d'exécution. est inatteignable sans l'occurrence de l'input cruise .

- Chantal propose d'utiliser les relations pour formaliser la fonction de transition. Il suffit ensuite de généraliser sur les chemins d'exécution.

```
1 | definition step' :: "inputs  $\Rightarrow$  cruise_state rel"  
2 | where "step' x = { ( $\sigma, \sigma'$ ). step x  $\sigma$  = Some( $\{\}$ ,  $\sigma'$ ) }"  
3 |  
4 | definition steps' where "steps'  $\equiv$  step' inputs.on U step' off U step' bran  
5 |  
6 | find_theorems name:"induct" " _*"  
7 | theorem " $(\sigma_0, \sigma) \in (\text{steps}')^* \implies \neg \text{cruise\_state.cruise } \sigma"$   
8 | apply(erule rtrancl.induct)
```

Jointly Editing Texts (high quality)



- Scientific quality texts usually require LaTeX
- Advantage: Text-based format, programmable
- Advantage: Large Libraries
- Inconvenience: One has to invest into learning it.
- Also available as Cloud-service:
 - Overleaf (www.overleaf.com)

Source Rich Text

Recompile

- fig1.eps
- history.txt
- lncs.cls
- lncsdoc.pdf
- readme.txt
- samplepaper.tex
- splncs04.bst

```

1 % This is samplepaper.tex, a sample chapter demonstrating the
2 % LATEX macro package for Springer Computer Science proceedings;
3 % Version 2.20 of 2017/10/04
4 %
5 \documentclass[runningheads]{lncs}
6 %
7 \usepackage{graphicx}
8 % Used for displaying a sample figure. If possible, figure files should
9 % be included in EPS format.
10 %
11 % If you use the hyperref package, please uncomment the following line
12 % to display URLs in blue roman font according to Springer's eBook style:
13 % \renewcommand\UrlFont{\color{blue}\rmfamily}
14 %
15 \begin{document}
16 %
17 \title{Contribution Title\thanks{Supported by organization x.}}
18 %
19 \titlerunning{Abbreviated paper title}
20 % If the paper title is too long for the running head, you can set
21 % an abbreviated paper title here
22 %
23 \author{First Author\inst{1}\orcidID{0000-1111-2222-3333} \and
24 Second Author\inst{2,3}\orcidID{1111-2222-3333-4444} \and
25 Third Author\inst{3}\orcidID{2222-3333-4444-5555}}
26 %
27 \authorrunning{F. Author et al.}
28 % First names are abbreviated in the running head.
29 % If there are more than two authors, 'et al.' is used.
30 %
31 \institute{Princeton University, Princeton NJ 08544, USA \and
32 Springer Heidelberg, Tiergartenstr. 17, 69121 Heidelberg, Germany
33 \email{lncs@springer.com}\
34 \url{http://www.springer.com/gp/computer-science/lncs} \and
35 ABC Institute, Rupert-Karls-University Heidelberg, Heidelberg, Germany\
36 \email{\{abc,lncs\}@uni-heidelberg.de}}
37 %
38 \maketitle % typeset the header of the contribution
39 %
40 \begin{abstract}
41 The abstract should briefly summarize the contents of the paper in
42 15--250 words.
43
44 \keywords{First keyword \and Second keyword \and Another keyword.}
45 \end{abstract}
46 %
47 %
48 %
49 \section{First Section}
50 \subsection{A Subsection Sample}
51 Please note that the first paragraph of a section or subsection is
52 not indented. The first paragraph that follows a table, figure,
53 equation etc. does not need an indent, either.
54
55 Subsequent paragraphs, however, are indented.
56
57 \subsubsection{Sample Heading (Third Level)} Only two levels of
58 headings should be numbered. Lower level headings remain unnumbered;
59 they are formatted as run-in headings.
60
61 \paragraph{Sample Heading (Fourth Level)}
62 The contribution should contain no more than four levels of
63 headings. Table~\ref{tab1} gives a summary of all heading levels.
64

```

1 First Section

1.1 A Subsection Sample

Please note that the first paragraph of a section or subsection is not indented. The first paragraph that follows a table, figure, equation etc. does not need an indent, either.

Subsequent paragraphs, however, are indented.

Sample Heading (Third Level) Only two levels of headings should be numbered. Lower level headings remain unnumbered; they are formatted as run-in headings.

Sample Heading (Fourth Level) The contribution should contain no more than four levels of headings. Table 1 gives a summary of all heading levels.

Table 1. Table captions should be placed above the tables.

Heading level	Example	Font size and style
Title (centered)	Lecture Notes	14 point, bold
1st-level heading	1 Introduction	12 point, bold
2nd-level heading	2.1 Printing Area	10 point, bold
3rd-level heading	Run-in Heading in Bold. Text follows	10 point, bold
4th-level heading	<i>Lowest Level Heading.</i> Text follows	10 point, italic

* Supported by organization x.

2 F. Author et al.

Displayed equations are centered and set on a separate line.

$$x + y = z \quad (1)$$

Please try to avoid rasterized images for line-art diagrams and schemas. Whenever possible, use vector graphics instead (see Fig. 1).

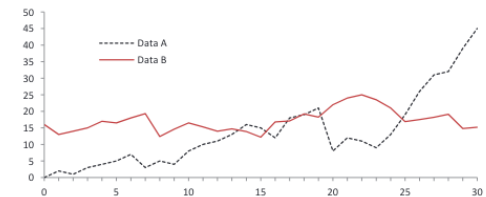
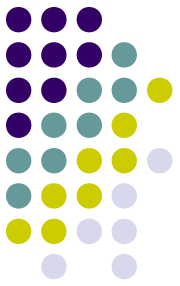


Fig. 1. A figure caption is always placed below the illustration. Please note that short captions are centered, while long ones are justified by the macro package automatically.

Theorem 1. *This is a sample theorem. The run-in heading is set in bold, while the following text appears in italics. Definitions, lemmas, propositions, and corollaries are styled the same way.*

Proof. Proofs, examples, and remarks have the initial word in italics, while the following text appears in normal font.

System Development



- Based on Version-Management Systems
 - svn, mercurial, git
 - Cloud-solutions: **github**, gitlab.
 - manages files and file-trees of different type
 - merges on file-trees and textual files
 - can be combined with programmed validations and test procedures
 - de-facto standard for industrial and open-source projects
 - comes with wiki's and bugtrackers.

System Development



Learn Git and GitHub without any code!

Using the Hello World guide, you'll start a branch, write comments, and open a pull request.

[Read the guide](#)

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European e-Infrastructure on Formal Proofs

131 commits 1 branch 0 packages 0 releases 11 contributors

Branch: master New pull request

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fblanqui	fix typos		
LaTeX-proposal			Latest commit ed2844d 4 hours ago
attic			10 days ago
lib	misc		11 days ago
sites	minor edits Nancy		3 days ago
workpackages	wp1: add objectives section		7 days ago
.gitignore	more ignorance		7 hours ago
Makefile	flexibilized ORRM		last month
ambition.tex	fix typos		8 days ago
conceptmethodology.tex	misc		4 hours ago
			3 days ago