

DAP2024 - Git Transfer of knowledge

Debriefing, Portuguese Met. Service (IPMA,. I.P.)
13th ACCORD LTM meeting, 06 February 2025

by
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Expected outcomes from the training



Get familiar and develop practical skills with Git/GitHub, both individually and as a team

Ensuring compatibility with technological advances in the ACCORD community to enhance sharing and collaboration

Integrating a new version control system and good practices into the new local ATOS machine, replacing previous SVN (operational) system

Overview of the training

IPMA headquarters in Lisbon

- Meeting room (~15-20 training posts)
- Video-conf and projection facilities
- Wi-fi connection
- Coffee-break snacks
- Canteen for lunch



Overview of the training

Total number of participants (12 in presence; 4 online):

- NWP experts
- downstream applications experts
- Computer section experts

Prerequisites:

- Personal laptop (Linux or Windows)



Agenda

Tuesday 29 Oct

- 10:00-10:30 Presentation of the course and participants
- 10:30-12:30 Git and GitHub intro and practical exercises
- 12:30-13:30 Lunch break
- 13:30-15:30 Git and GitHub intro and practical exercises (cont)
- 15:30-16:30 Coffee break
- 16:30-17:30 1st day wrap-up and discussions

Wednesday 30 Oct

- 10:00-10:30 Doubts resolution and questions
- 10:30-12:30 ACCORD GitHub forge and practical exercises
- 12:30-13:30 Lunch break
- 13:30-15:30 ACCORD GitHub forge and practical exercises (cont)
- 15:30-16:30 Coffee break
- 16:30-17:30 2nd day wrap-up and discussions



Code version control: introduction to Git and GitHub

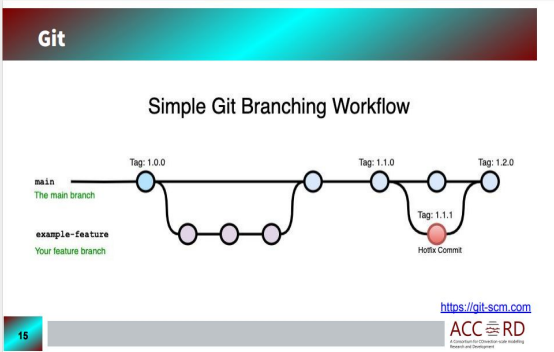
Intro: History of Version Control in ACCORD

System	Model	Author	Last Change
SVN	Centralized	1.0.0	1.0.0
Git	Distributed	1.0.0	1.0.0
Mercurial	Distributed	1.0.0	1.0.0
Subversion	Centralized	1.0.0	1.0.0
Perforce	Centralized	1.0.0	1.0.0
Bitbucket	Distributed	1.0.0	1.0.0
GitLab	Distributed	1.0.0	1.0.0
GitHub	Distributed	1.0.0	1.0.0

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Generalities on code version control vs. ACCORD



Git repository features

GitHub

GitHub is a web-based platform that facilitates version control and collaborative software development using Git, a distributed version control system.

- It allows developers to host and manage their code repositories, track changes, and collaborate with others through features like pull requests, issue tracking, and project management tools.
- GitHub also provides social networking features, enabling users to follow projects and contribute to open-source initiatives.
- With its extensive integration capabilities and a vast ecosystem of tools, GitHub has become a central hub for developers and teams around the world.

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GitHub web interface tool

Code version control: hands-on exercises



GitHub overview



PRACTICAL EXERCISE 1:

Setup your GitHub user

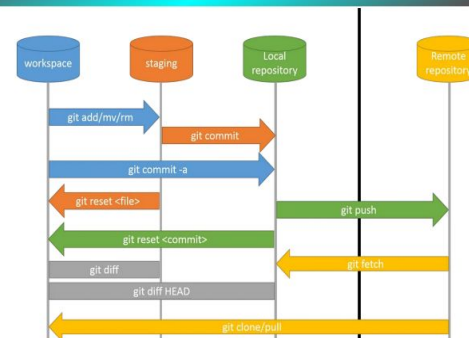
Tips: Add your affiliation and ssh keys in your configuration area

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Practical exercises, exploring
command lines

Git command line



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Research and Development

Exercises discussion, with
solutions provided on the go

ACCORD Forge repo in GitHub and dedicated/advanced practical exercises

GIT

ACCORD Git Branching Diagram

COMMAND LINE

Fork and branch

You can create a user fork of IU-sandbox by doing the following:

1. Go to <https://github.com/ACCORD-WP104-sandbox>
2. Click on Fork to create a fork of IU-sandbox for your user (USER)
3. Clone your fork:

```
git clone https://github.com/ACCORD-WP104-sandbox.git
```

or

```
git clone https://github.com/dsantos/IU-sandbox.git user
```

CI & CD

ACCORD GitHub doc prototype

ACCORD-WP104.github.io

ACCORD Forge documentation

join the organisation

- to be as close as possible to the code versions
- should be version controlled
- automatic generation tools
- error link to docs...

Ten simple scientific goals

ACC RD

... a good discussion on “the real stuff” and everything you need to know today on ACCORD collaborative work !

Outcomes

All the participants enjoyed the training

Individually, all participants were enthusiastic to start using these practices/utilities on their daily work, to handle personal work projects

Participants were trained to start contributing at any time (were given permissions to the ACCORD forge)...

Locally, there is a need to design the best way to use this facility - which relies on new concepts (i.e. local code will be archived to into platforms exterior to IPMA) - and to plan the moving from SVN to Git/GitHub which should occur in 2025

This was an excellent team opportunity !

Thank you !