Git: Distributed Version Control System

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Git

Provides versioning/history for a collection of files. Allows one to :

- Record changes applied to the tracked files.
- Revert files to an older state.
- Cooperate with multiple users.

Terminology

Repository History container

Branches Separate code time-line

Commit Finalize changes

Revision Version of a source code (SHA1)

HEAD Latest version (HEAD 1 = previous)

Setup Git Info

User information

```
1 git config —global user.name "Your Name"
2 git config —global user.email "your@e-mail"
```

Listing 1: Information

Getting started with Git

```
1  cd source_folder
2  git init
3  git add .
4  git commit −am "Initial commit!"
```

Listing 2: Working with an existing project

Casual usage

- Develop a project
- New files? simply add them to the source code tree
  git add *source_file*
- When you have worked "enough"
  git commit -am "Explanatory comment regarding the commited changes"

Working with a global/online repository

- Create a repository and get the Git URL
  git://inf-gaia-se.inf.uth.gr/Project ??

- Navigate to your local repository
  git remote add origin *URL*
  git push -u origin master to push your changes OR
  git pull origin master to pull the remote version

- If the remote repository already exists, clone it
  git clone git@*git://inf-gaia-se.inf.uth.gr//...*

Working with branches

Need to experiment a bit?

- **git checkout -b *experiment***
- Then work a bit (remember to commit your changes)
- Should anything go wrong you can switch to the previous branch using
  git checkout *master*
- If it feels right, switch back to the main branch (master) and merge the changes
  git merge *experiment* might ask for manual changes

Usefull Git commands

Look these up

- git status

- git log

- git checkout

- git branch

- git revert

- git commit −−amend

Information

More Git related resources

- http://git-scm.com/documentation
- https://help.github.com/
- http://try.github.io/levels/1/challenges/1

Give it a try

Git is a *learn-as-you-use* thing. Google is your friend.