Introduction to R and Git(Hub)

Git: Idea and concept

- distributed version control system
- track and document changes in code
- compare and find differences
- "time travel maschine"
- helps to imagen changes as smaller tasks
- share, publish, and collaborate on projects

Intro to Git, for the Social Scientist

Git for Social Scientists

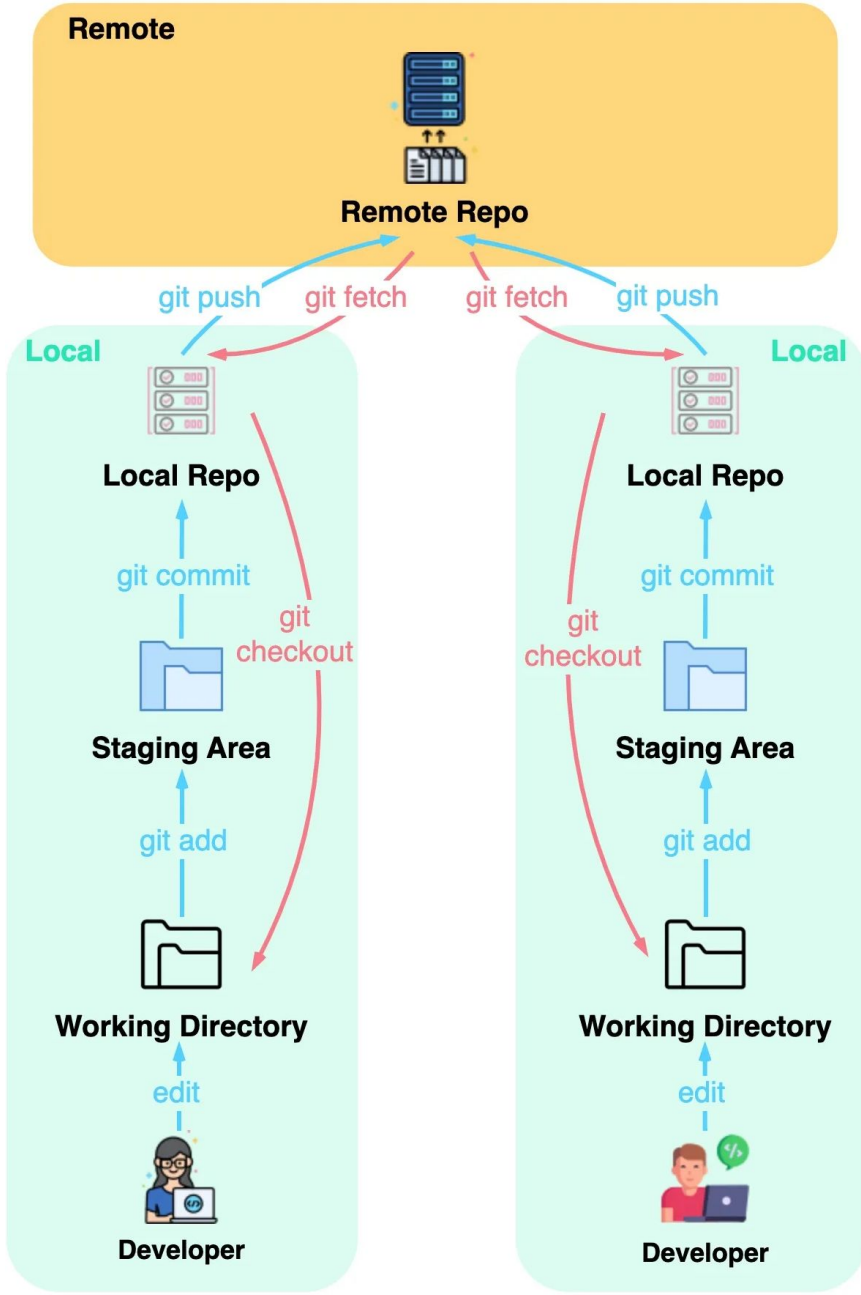
Git for Students in the Social Sciences

AI tool suggesting git command

Git: First and basic steps

```
$ git config --global user.name <your name>
$ git init <your repository name>
$ git status
```

```
$ git add <file-name-1> <file-name-2>
$ git commit -m "<commit-message>"
OR BOTH IN ONE
$ git commit -am "<commit-message>"
```



GitHub: Remote and cooperative workflow

```
$ git clone <git-repo-url>
```

```
$ git branch < branch-name>
$ git checkout <name-of-your-branch>
OR BOTH IN ONE
$ git checkout -b <name-of-your-branch>
```

```
$ git push -u (<remote> OR origin) <branch-name>
```

```
& git fetch
& git merge <branch-name>
OR BOTH IN ONE
$ git pull <remote> (<branch-name>)
```

.gitignore

Why: text file with folders and files (patterns) not to track

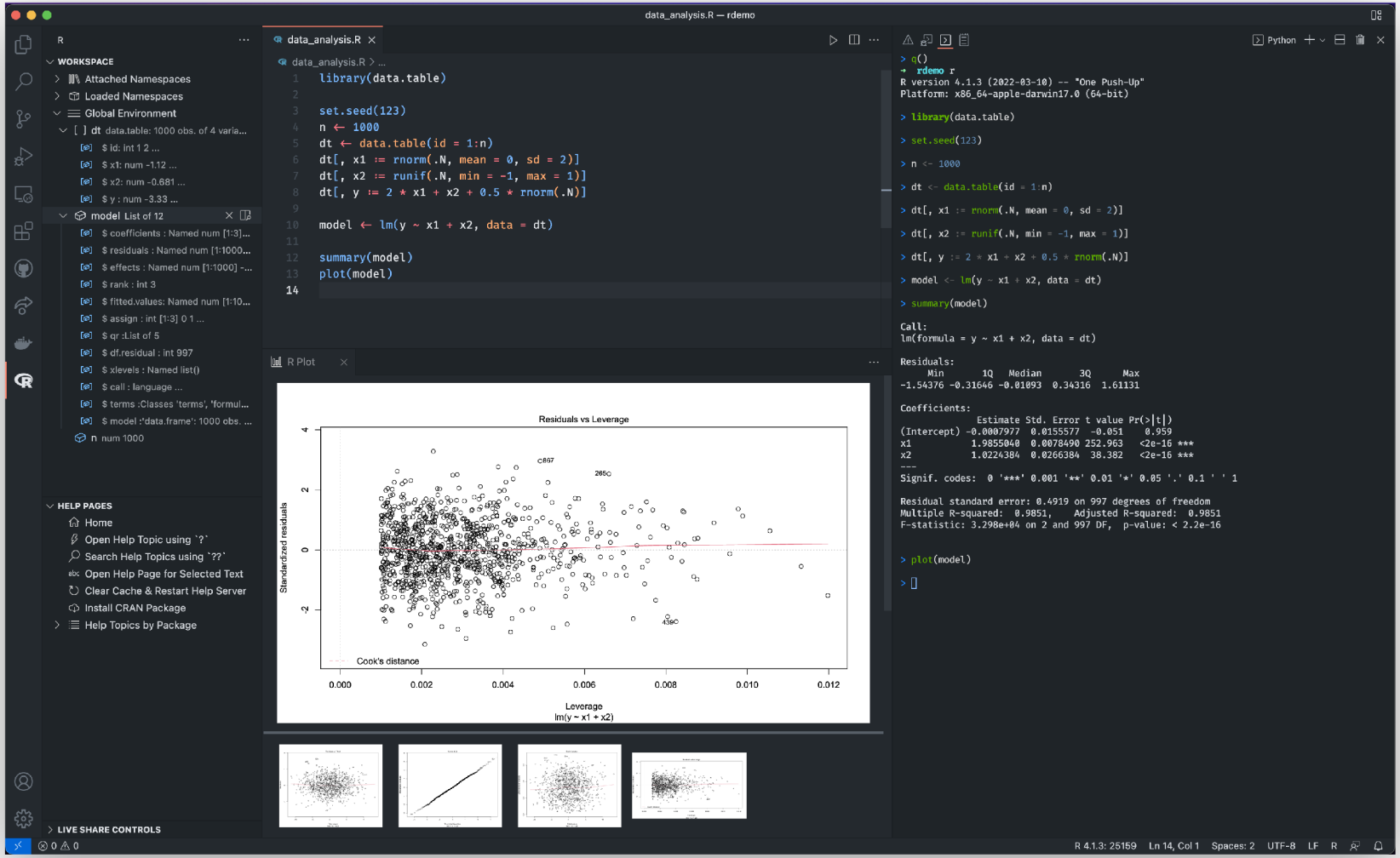
What: sensitive data; temp and old files; big data files; (outputs)
-> usually track just plain text working files (e.g. R scripts, LaTeX source, etc.)

How: 2 approaches (helpful online tool creates content automatically)

```
/data/old
passworts.txt
*.doc
```

```
/*
!.gitignore
!/scripts
```

Code Editor: VSCode



Code Editor: Benefits

- swiss army knive of coding and file management
  - search (and replace) in whole project folder
  - (better) syntax highlighting
  - customizable
- multiple languages supported (e.g. R, Python, LaTeX, Markdown)
- Git(Hub): integration for better workflow
- with R:
  - run multiple R Sessions in parallel
  - script still editeble if process busy

Code Editor: HowTo

- https://code.visualstudio.com/docs/languages/r
- https://renkun.me/2019/12/11/writing-r-in-vscode-a-fresh-start/
- https://schiff.co.nz/blog/r-and-vscode/