

# Command Line, Git, Version Control, and Markdown

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# Command line

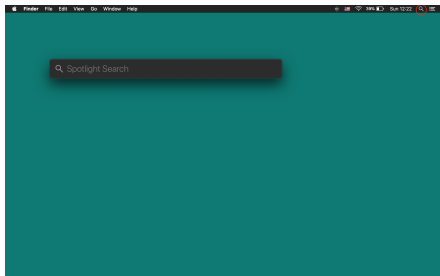
## Overview

- ① A user interface that's navigated by typing commands at prompts, instead of using a mouse.
- ② Many tasks can be performed quicker and can be easier to automate and do remotely.
- ③ The command line is the only place you can run all Git commands. (GUI operating system is limited)
- ④ Examples of command line (shell):  
**git bash**, terminal (macOS), command (Windows), Powershell, etc

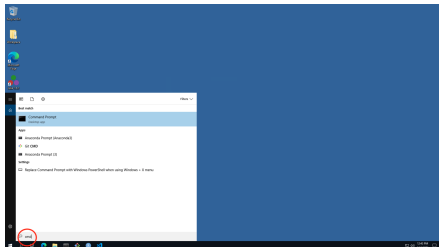
# Command line

How to open command line: Terminal and command

- 1 Terminal: search for “terminal” using spotlight search
- 2 Command prompt: search for “cmd” using start menu search



(a) Terminal (macOS)

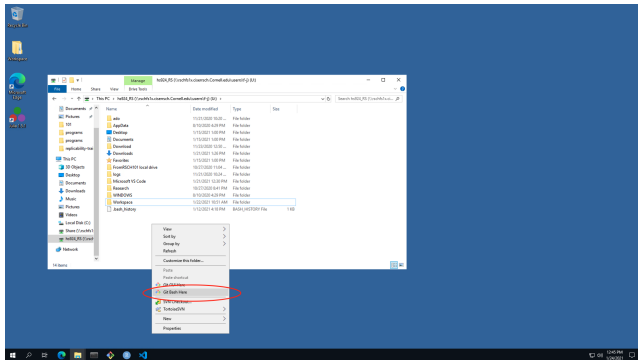


(b) command prompt (Windows)

# Command line

How to open command line: git bash

- 1 Navigate to the directory you would like to work on using file explorer, right click, select “git bash here”



(c) git bash

# Command line

## Example commands

- ❶ pwd: show current working directory
- ❷ cd: navigate directories
- ❸ mkdir, rmdir: create and remove directories
- ❹ For more information, click [▶ here](#)

# Git

## Overview

- 1 One of the Distributed Version Control Systems (More on version control later).
- 2 Three states: Modified, staged, committed
  - Modified: You have changed the file but have not committed it to your database yet.
  - Staged: You have marked a modified file in its current version to go into your next commit snapshot.
  - Committed: The data is safely stored in your local database.
- 3 For more information, click [▶ here](#)

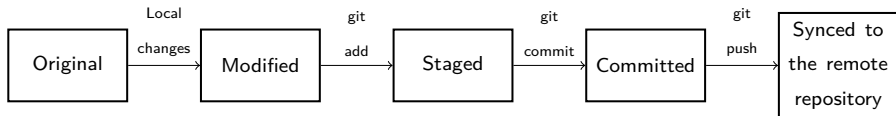
# Git

## Commands

- 1 `git add`: take a snapshot of the contents and store in a temporary staging area.
- 2 `git commit`: permanently store the contents in the staging area to the local repository.
- 3 `git push`: update remote repository using changes in the local repository.
- 4 `git pull`: update local repository using changes in the remote repository.
- 5 `git status`: get a brief summary of the situation.
- 6 `git clone`: clone a repository into a new directory.

# Git

## Flow





# Version Control

## Overview
















- ❶ A system that records changes to a file or set of files over time so that you can recall specific versions later.
- ❷ One of the key advantages of using version control systems is... to control versions.
  - Straightforward to view multiple versions of a file (assuming proper usage).
  - Possibility to view who changed what (“blame” or “annotate”).
- ❸ For more information, click [▶ here](#)

# Version Control

Example: Track history of changes

aeaverification / AEJ: / aearep-

## Commits

Search commits		All branches	
Author	Commit	Message	Date
 1	f2	pre-approved report	2 days ago
 t	55	final report	2021-01-17
 t	df	code check	2021-01-17
 t	f1	replication material	2021-01-16
 t	e0	preliminary report	2021-01-15
 t	b5	pii scan output	2021-01-15
 t	c8	data	2021-01-14
 t	a0	data and code	2021-01-14
 t	2e	removing R files	2021-01-14
 t	f7	removing R files	2021-01-14
 t	93	removing unused R files	2021-01-14
 t	b1	README	2021-01-14
 t	30	manuscript	2021-01-14
 L	da	adding better requirements template	2021-01-06
 L	f4	Minor edits	2020-12-24

(a) History and comments

# Version Control

## Example: Track history of changes

aeaverification / AEJ:Applied / aearep-1668 / Commits

### Commit



2021-01-14

3 committed

data and code

[View source](#)

[Approve](#)



[master](#)

[No tags](#)

[Go to pull request](#)

[View raw commit](#)

[Watch this commit](#)

[Run pipeline](#)

### Comments (0)



What would you like to say?

### Files changed (6)

+319	-0	A	/appendix.do
+309	-0	A	/distance.do
+861	-0	A	/pollution.do
+439	-0	A	/regression.do
+81	-0	A	/reshape.do
+333	-0	A	/temp.do

(b) List of changed files

# Version Control

## Example: Track history of changes

### REPLICATION.md

```
## Figures
| Figure # | Program | Line Number | Replicated? |
|-----|-----|-----|-----|
| Figure 1 | NA | NA | No |
| Figure 2 | regression.do | 281-380 | No |
| Figure A.1 | appendix.do | 287-310 | No |
| Figure A.2 | appendix.do | 320-327 | No |
| Figure A.3 | NA | NA | No |
| Figure A.4 | NA | NA | No |
| Figure A.5 | appendix.do | 335-370 | No |
| Figure A.6 | NA | NA | No |
| Figure A.7 | NA | NA | No |

## In-Text Numbers
[x] There are no in-text numbers, or all in-text numbers stem from tables and figures.
[] There are in-text numbers, but they are not identified in the code

Classification
> Full reproduction can include a small number of apparently insignificant changes in the numbers in the table.
> Partial reproduction means that a significant number (>25%) of programs and/or numbers are different.
> Note that if any data is confidential and not available, then a partial reproduction applies. This should be noted.
> Note that when all data is confidential, it is unlikely that this exercise should have been attempted.
> Failure to reproduce: only a small number of programs ran successfully, or only a small number of numbers were
- [] full reproduction
- [] full reproduction with minor issues
- [] partial reproduction (see above)
- [x] not able to reproduce most or all of the results (reasons see above)
```

```
159 197 | Table A.3 | appendix.do | 152-192 | No |
160 198 | Table A.4 | appendix.do | 199-247 | No |
161 199 | Table A.5 | appendix.do | 253-280 | No |
162 200 | Table A.6 | NA | NA | No |
163 201 | Table A.7 | NA | NA | No |
164 202
165 203 > [REQUIRED] Please provide debugged code, addressing the issues identified in this report.
166 204
167 205 ## Figures
168 206
169 207 | Figure # | Program | Line Number | Replicated? |
170 208 |-----|-----|-----|-----|
171 209 | Figure 1 | NA | NA | No |
172 210 | Figure 2 | regression.do | 291-300 | No |
173 211 | Figure A.1 | appendix.do | 287-310 | No |
174 212 | Figure A.2 | appendix.do | 320-327 | No |
175 213 | Figure A.3 | NA | NA | No |
176 214 | Figure A.4 | NA | NA | No |
177 215 | Figure A.5 | appendix.do | 335-370 | No |
178 216 | Figure A.6 | NA | NA | No |
179 217 | Figure A.7 | NA | NA | No |
180 218
181 219 > [REQUIRED] Please provide debugged code, addressing the issues identified in this report.
182 220
183 221 ## In-Text Numbers
184 222
185 223 [x] There are no in-text numbers, or all in-text numbers stem from tables and figures.
186 224
187 225 [] There are in-text numbers, but they are not identified in the code
188 226
189 227 Classification
190 228
191 229
192 230 - [] full reproduction
193 231 - [] full reproduction with minor issues
194 232 - [] partial reproduction (see above)
195 233 - [x] not able to reproduce most or all of the results (reasons see above)
196 234
197 235 ## Reason for incomplete reproducibility
198 236
199 237 - [] 'Discrepancy in output' (either figures or numbers in tables or text differ)
200 238 - [] 'Bugs in code' that were fixable by the replicator (but should be fixed in the final deposit)
201 239 - [] 'Code missing', in particular if it prevented the replicator from completing the reproducibility check
202 240
```

(c) Differences within file line by line

# Markdown

## Overview

- ① A lightweight markup language that you can use to add formatting elements to plaintext text documents.
- ② Why use markdown?
  - Markdown is portable. Files containing Markdown-formatted text can be opened using virtually any application.
  - Markdown is platform independent. You can create Markdown-formatted text on any device running any operating system.
  - Markdown is future proof. You can read markdown-formatted text using a text editing application, even when your application stops working.
- ③ For more information, click [▶ here](#)

# Markdown

## Tips

- ❶ Markdown uses syntax for text formatting.
  - You need a tool to translate from plain text to a formatted document.
  - We use: Visual Studio Code
- ❷ Useful extensions in Visual Studio Code
  - Preview to the side
  - Excel to markdown table

Credits to the authors of the materials in the link.