GitUp

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The Need for a Simple Backup System

- Backing up work is important
- Git is too hard to use
  - Majority of users identify documentation insufficiencies
  - Steep learning curve for new users
- Cloud Storage Systems don’t cut it
  - What if I want to compare?
  - Where’d my last version go?

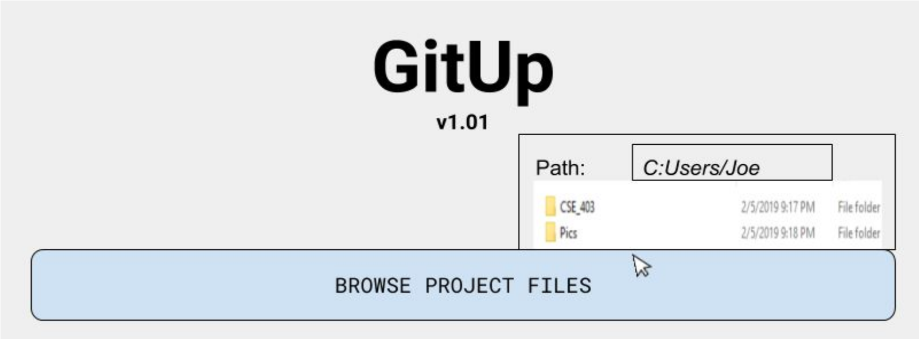
Gitless: A Step in the Right Direction, But...

- Aims to make Git easier to use
  - On many counts, it does!
  - Solves a fundamentally different problem!
- Command line interface and git-like commands
  - Programmers with little to no experience will still struggle!

GitUp: The Best of All Worlds

- Accessible to wide range of users (beginners and non-programmers)
- Version Control down to file level
- Automatic pushing/pulling eliminates conflicts between working version, local and remote repositories.
- Smart grouping of committed changes

What will GitUp Look Like?

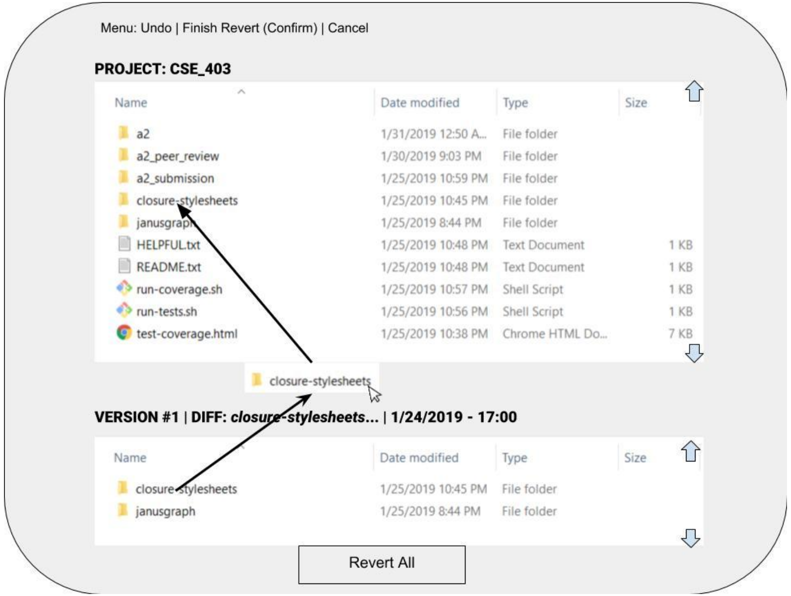


Path: C:Users/Joe

CSE_403	2/5/2019 9:17 PM	File folder
Pics	2/5/2019 9:18 PM	File folder

View after launch.

What will GitUp Look Like?



PROJECT: CSE_403

Name	Date modified	Type	Size
a2	1/31/2019 12:50 A...	File folder	
a2_peer_review	1/30/2019 9:03 PM	File folder	
a2_submission	1/25/2019 10:59 PM	File folder	
closure-stylesheets	1/25/2019 10:45 PM	File folder	
janusgraph	1/25/2019 8:44 PM	File folder	
HELPFUL.txt	1/25/2019 10:48 PM	Text Document	1 KB
README.txt	1/25/2019 10:48 PM	Text Document	1 KB
run-coverage.sh	1/25/2019 10:57 PM	Shell Script	1 KB
run-tests.sh	1/25/2019 10:56 PM	Shell Script	1 KB
test-coverage.html	1/25/2019 10:38 PM	Chrome HTML Do...	7 KB

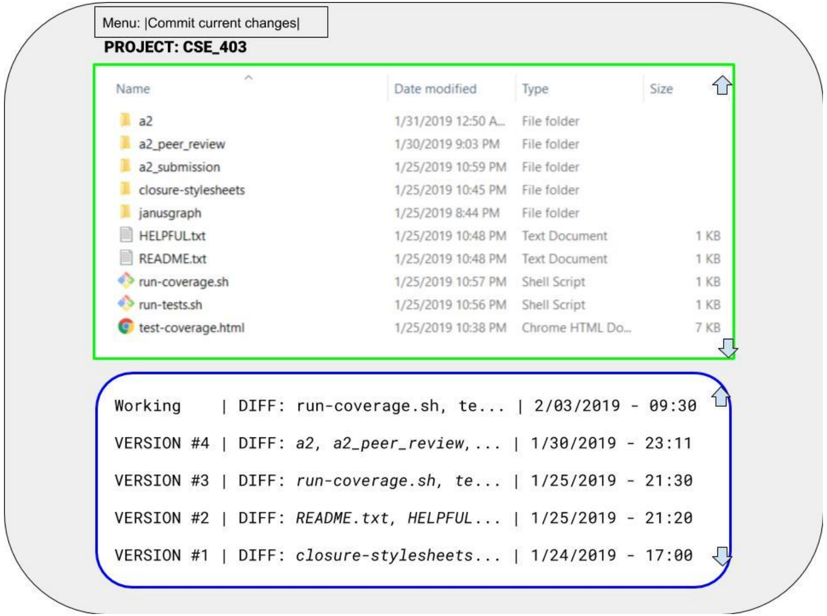
closure-stylesheets

VERSION #1 | DIFF: *closure-stylesheets...* | 1/24/2019 - 17:00

Name	Date modified	Type	Size
closure-stylesheets	1/25/2019 10:45 PM	File folder	
janusgraph	1/25/2019 8:44 PM	File folder	

View after selecting changes.
Easy drag and drop of past file versions
into the master version to revert.
Revert All button.

What will GitUp Look Like?



Menu: |Commit current changes|

PROJECT: CSE_403

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```
Working    | DIFF: run-coverage.sh, te... | 2/03/2019 - 09:30
VERSION #4 | DIFF: a2, a2_peer_review,... | 1/30/2019 - 23:11
VERSION #3 | DIFF: run-coverage.sh, te... | 1/25/2019 - 21:30
VERSION #2 | DIFF: README.txt, HELPFUL... | 1/25/2019 - 21:20
VERSION #1 | DIFF: closure-stylesheets... | 1/24/2019 - 17:00
```

View after selecting project.
Green: Project files.
Blue: Selected file changes.

How Will Gitup Be Implemented?

- Tkinter for Python GUI
- GUI Interface interface with GitPython
- GitPython to communicate between local files and Git repository
- Python HTTP client to communicate with remote repositories

Schedule

Weekly Goals:

6. Automatic Repository creation and Pushing/Pulling.
7. File Reverting
8. Smarter Grouping of Changes Part 1
9. Smarter Grouping of Changes Part 2
10. Collect and Respond to Final Feedback
11. Feedback Implementation

Data Collection

- Two groups of testers
  - An “experienced” pool of developers whose focus is on evaluating functionality
  - An “inexperienced” pool of developers whose focus is on evaluating ease of use
- User testing will be performed during our development process to locate deficiencies and bugs
  - Data could be subjective - standardized feedback forms will make results easier to evaluate

What’s Been Learned?

- Originally planned to survey inexperienced users for feature suggestions
  - Had to find feedback/complaints online to figure out what GitUp needs to provide
- How can we design for our target customers?
- Originally planned on users giving pre-created repositories for projects
  - Create local and remote repositories for users (1.GitHub 2.GitLab 3. BitBucket)
  - OAuth: request user credentials, receive token, communicate w/ remote repo
- Automatically grouping changes is an interesting problem.
  - Event based is the most promising
- Locking files to avoid merge conflicts could prove difficult
  - Git doesn’t implement this feature, so we can’t use Git as a reference point

Programming is for Everyone!

- Today, more and more people from almost every field are programming!
- Making programming easier is more important than ever
    - Jupyter Notebook
    - Excel Macros
    - Etc.
- GitUp can make version control easy and accessible to users who aren’t ready to use Git

Works Used

- https://insights.stackoverflow.com/survey/2018
- https://spderosso.github.io/onward13.pdf
- https://www.gitkraken.com/git-client
- https://docs.python.org/3/library/tk.html#tkinter
- https://gitpython.readthedocs.io/en/stable/