

Visualizing Selective Undo In A Command Line Interface

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Context

- 1) Create newfile.txt
- 2) Edit newfile.txt
- 3) Make Directory dirA/
- 4) Copy newfile.txt -> otherfile.txt
- 5) Move otherfile.txt dirA/



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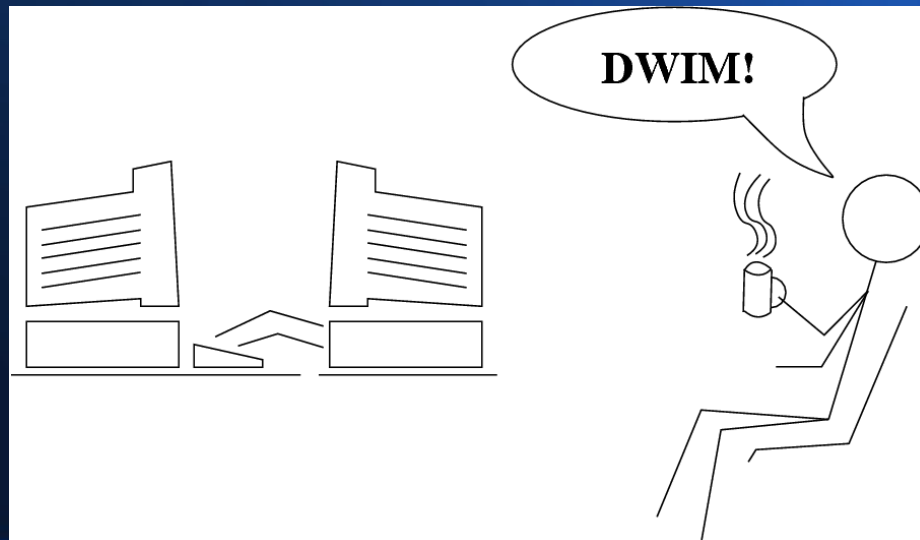


Project Goal

- Complete shell wrapper in Python
- Design a visualization for displaying changes with selective undo commands



Inspiration



Research Question

- What features affect how we understand selective undo?
- What is the best way to depict the effects of selective undo?



The Two Approaches

```
home/  
  myFile.txt  
->otherFile.txt  
  directoryA/  
*  someText.txt  *  
  anotherFile.txt
```

Fig 1. In this example, the user is selecting otherFile.txt, and someText.txt has a change in it.

otherFile.txt, and someText.txt has a change in it.

```
File location and name: /home/directoryA/someText.txt  
  
--(Hello World!)  
++(Foo bar)
```

(a) The Cascade

```
File location and name: /home/directoryA/someText.txt  
  
Foo bar
```

(b) Final State

Implementation

- Git
- Python



Methods/Data Collection

- Separate groups
 - Cascade vs Final State
- Using prototype of shell wrapper
 - Give scenarios from script

Scenario 1:

Please enter the following commands. Be sure to think about what is occurring when you type in a command so that you know what the file system looks like at intermittent points.

- 1) **touch newfile.txt**
- 2) **touch otherfile.txt**
- 3) **edit newfile.txt**
(While editing, add **Hello world!**)
- 4) **edit otherfile.txt**
(While editing, add **Lorem Ipsum**)
- 5) **rm newfile.txt**
- 6) **mv otherfile.txt newfile.txt**

Next, type in undo and undo command 5) **rm newfile**. Examine what changes will happen, and once you are satisfied hit enter.

Evaluation

- Measurements
 - Time
 - Number of clicks
- Questions after each scenario to evaluate understanding
- Demographic survey afterwards

S1 Questions:

1) What is in newfile.txt after the undo?

2) What is in otherfile.txt after the undo?

Future Work

- Threats to Validity
 - Lots of variables
 - Sample Size/participant demographics
 - Glossary
- Other Directions
- Larger question of Selective Undo
 - Other Applications