Visualizing Selective Undo In A Command Line Interface

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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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Context

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

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

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