Section 1: Coding in Bash Shell

- Concepts and Terms
- Most Frequently Used Commands
  - Basic operations
  - File system navigation
  - File creation and editing
  - Interacting with Python/ Git/ AWS/ HDFS
  - More tips
- Exercises & Learning Resources

Section 1: Coding in Bash Shell

- **Concepts and Terms**

Unix

- A operating system & a set of tools that support multitasking and multi-user functionality
- Unix is most widely used in all forms of computing systems such as desktop, laptop, and servers.

Shell

- One of the Unix tools
- A command line interface program

Bash

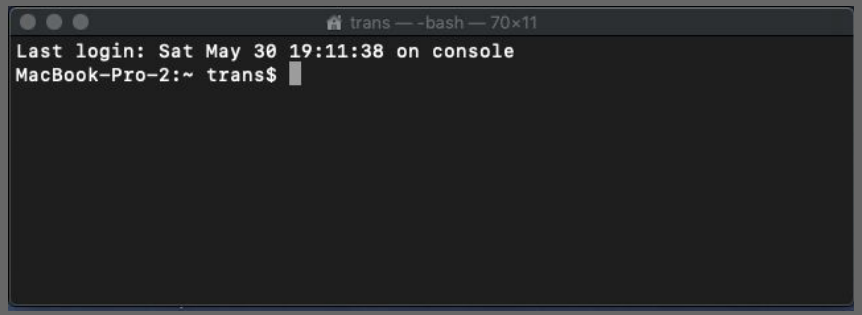
- One of the Shell programs (default shell program on Mac/ Ubuntu)

Section 1: Coding in Bash Shell

- **Concepts and Terms**

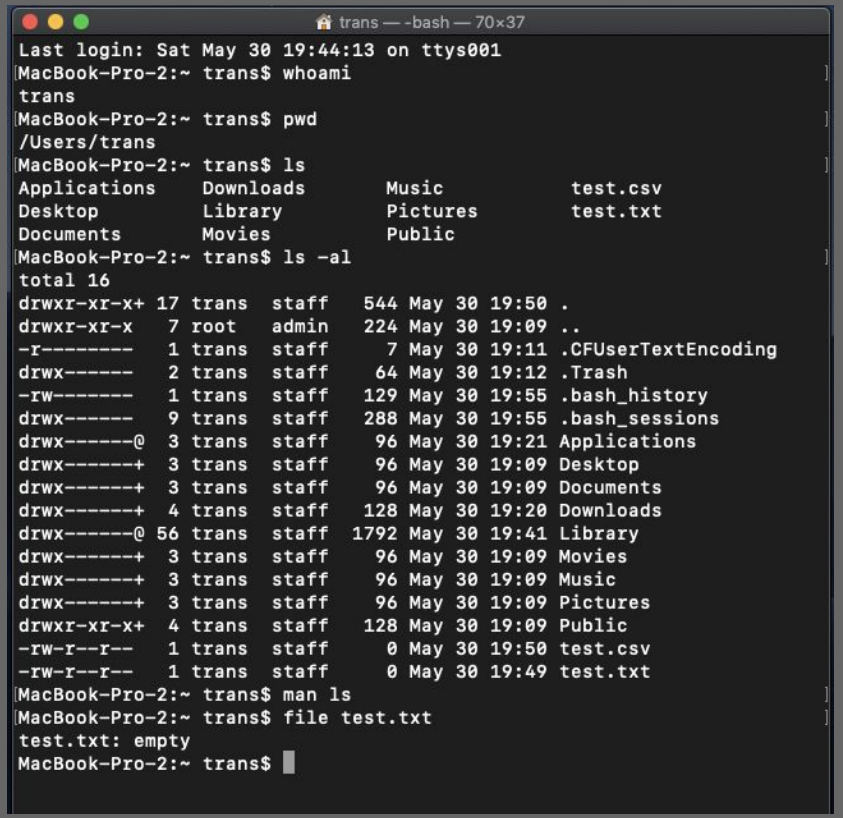
  CLI (Command-Line Interface)

  - Processes lines of commands to a computer program
  - Terminal, iterm/ iterm2, tmux
    - Zoom in/ out: Cmd + “+” / Cmd + “-”
    - Open a new tab: Cmd + “t”
    - Close current tab/ window: Cmd + “w”



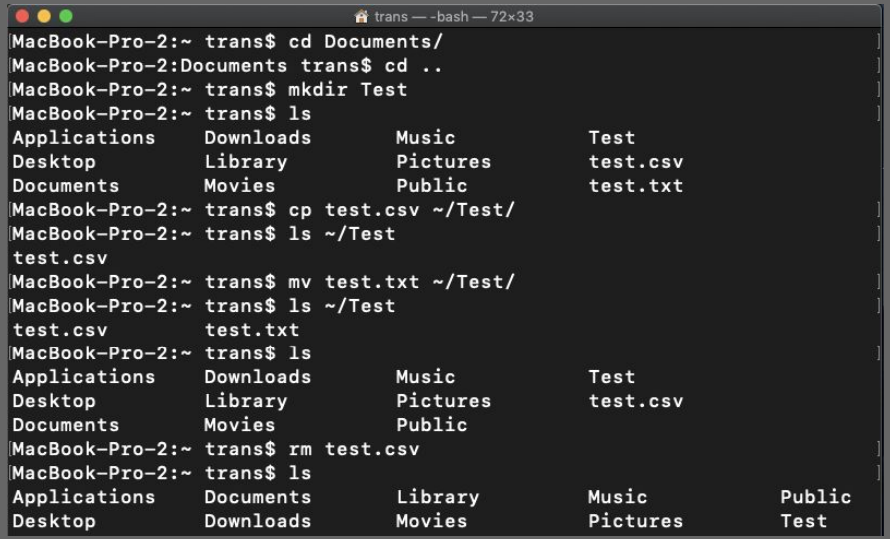
Section 1: Coding in Bash Shell

- **Most Frequently Used Commands -** Basics
  - Who am I: whoami
  - Where am I: pwd (print working directory)
  - What's inside: ls (list) / ls - al (list all long)
  - How to use a command:
    - man ls (manual list)
    - type "q" to quit
  - What's this file: file file_name.file_format
  - What was the previous commands:
    - history
    - !1
    - history | grep l



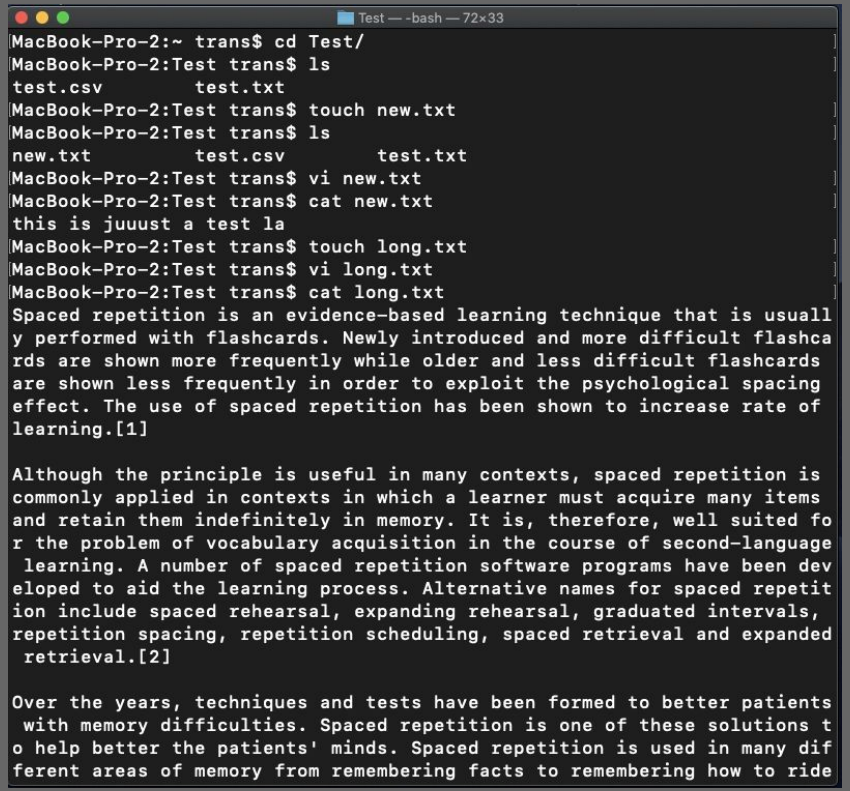
Section 1: Coding in Bash Shell

- **Most Frequently Used Commands -** Navigation
  - Go to another place:
    - cd (change directory)
    - cd .. (go back to one-level-up directory)
  - Make a new folder: mkdir (make directory)
  - Copy a file: cp (copy)
  - Move a file: mv (move)
  - Don’t want it anymore:
    - rm (remove)
    - Please pay 200% attention
    - There’s no “control z”



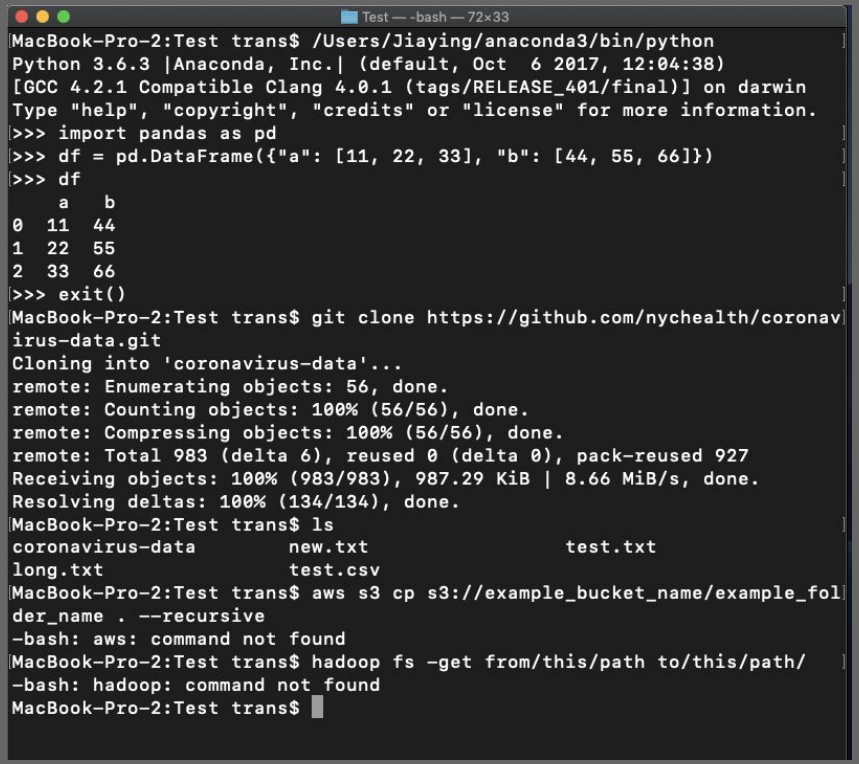
Section 1: Coding in Bash Shell

- **Most Frequently Used Commands -** Create/ Edit files
  - Create a file: touch file_name.file_format
  - Edit the file:
    - vi file_name.file_format (visual editor)
    - “I” (insert)
    - “esc” (exit) => “:wq” (write and quit)
  - View the file(s):
    - cat file_name.file_format (concatenate)
    - less file_name.file_format
    - tail -n file_name.file_format



Section 1: Coding in Bash Shell

- **Most Frequently Used Commands -** Interactions
  - Python
    - your/environment/bin/python
    - your/environment/bin/jupyter notebook
  - Git
    - git clone/ add/ commit/ push/ pull/ status
  - AWS
    - aws s3 cp from/path to/path
    - aws s3 cp from/path to/path -- recursive
  - HDFS
    - Hadoop fs -get from/path to/path



Section 1: Coding in Bash Shell

- **Most Frequently Used Commands -** More tips
  - too lazy to type it all:
    - Tab (case sensitive)
    - Arrow up & down
  - too many lines: clear
  - Too lazy to press the arrows:
    - Control + “a” (go to head)
    - Control + “e” (go to end)
  - Stop running something: control + “c” (cancel/ crease)

Wrap-up: Coding in Bash Shell

- **Concepts and Terms**
- **Most Frequently Used Commands**
  - **Basic operations**
  - **File system navigation**
  - **File creation and editing**
  - **Interacting with Python/ Git/ AWS/ HDFS**
  - **More tips**
- **Exercises & Learning Resources**
  - Linux Coding: https://linuxjourney.com/lesson/the-shell
  - Linux Productivity Tools: https://www.usenix.org/sites/default/files/conference/protected-files/lisa19_maheshwari.pdf
  - The Unix Workbench: https://www.coursera.org/learn/unix