SI 206
Discussion 4

Terminal

File, Directory
and Path

Git and
GitHub

Practice
Problem

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Discussion 4: Terminal, Git and Class

SI 206: Data-Oriented Programming

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School of Information
University of Michigan

Fall 2023

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Reminders

- Finish the work and push to GitHub by the end of the discussion

- Homework 3 due this Friday, commit at least 4 times and push to GitHub

- Midterm 1 on week 6 (we are at week 4 now!)

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What is Terminal?

- A terminal is simply a text-based interface to the computer
- You input commands to tell computer to do things, for example:
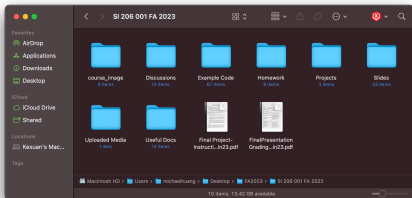 - `date`: display the time
  - `top`: display your CPU status
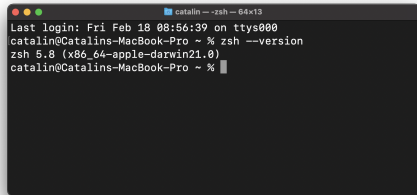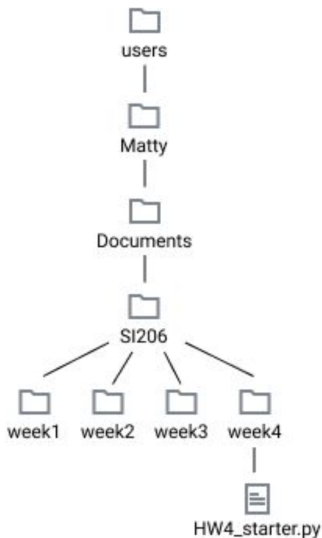

Figure 1: Graphical User interface (GUI)

Figure 2: Command Line Interface (CLI)

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File, Directory and Path

- Directory (or folder) can contain other directory and files

- Directory are structured in the form of a tree

- Path is the location of a directory or file
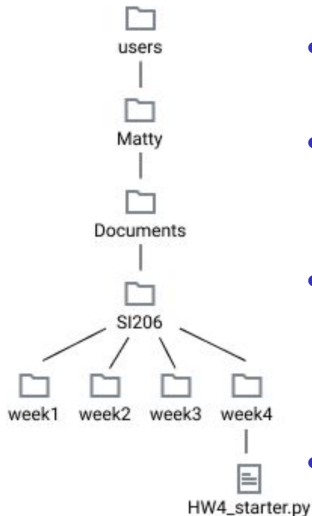
- The top-most directory is root directory

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- We use "`/`" (slash) to connect directories when representing a path

- Absolute path: describes the complete details needed to locate directory or file e.g. `/users/Matty/Documents/SI206`

- Relative path: describes the location of a file relative to the current (working) directory, e.g.
  If we're at `Matty` folder, `Documents/SI206`
  If we're at `week3` folder, `../week4/`

- Check your current directory with `pwd`

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Git and GitHub

- Git is a distributed version control tool that tracks changes in any set of computer files
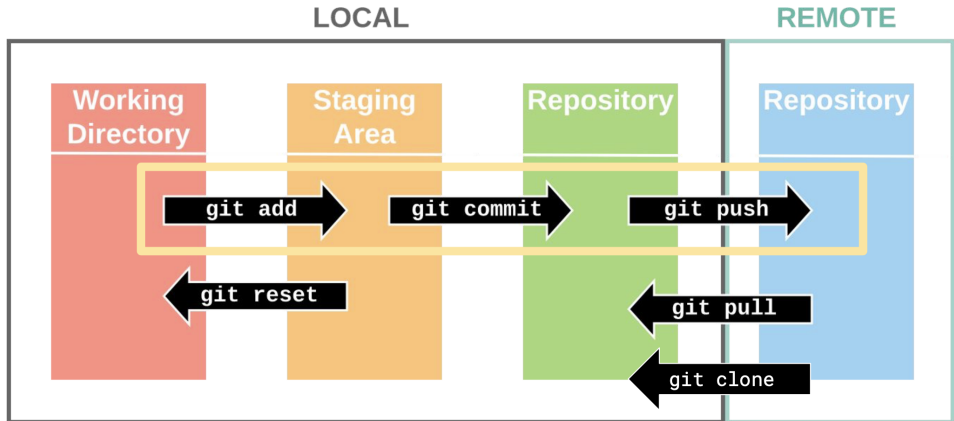
- GitHub is a online platform for software development

Git Working Flow

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Typical Git Workflow

1. Clone the repository: `git clone <link>`

2. Add file to staging area: `git add <file1> (<file2> ...)`

3. Make snapshot of current change: `git commit -m "<message>"`

4. Upload to cloud server (GitHub): `git push`

Use git status to check current stages.

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Discussion 4 Assignment

- Go to GitHub classroom and accept the assignment:
  https://classroom.github.com/a/u5XxZC81

- If you are having issues: go to Discussion 4 on Canvas files for starter code

- Commit at least 4 times and push to GitHub by the end of this discussion

- Write meaningful commit messages, e.g. "feat: perimeter method"

```
~/Desktop/SI206_GSI/diss4  python3 discussion4_starter.py
A rectangle with width 10 and height 10
Area: 100
Perimeter: 40

A rectangle with width 0 and height 10
Area: Invalid input
Perimeter: Invalid input
```