CSE 141L: Introduction to Computer Architecture Lab
Implementing

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Milestone 1 is due in 7 days

- What to submit?
  - SOMETHING

- M1 is graded for completion, not accuracy
  - The purpose of milestones is to *help you* manage large, long-term project
  - TAs will use gradescope "grades" to help give feedback
  - Recall: Only Milestone 4 (final submission) is actual grade*
    - *With exceptions for things such as skipping milestones altogether

Today's Objectives:
What does implementing look like?

- Some tips for setting up CloudLabs
- Exploring the `basic_proc` example
- Exploring ModelSim/Questa and Quartus

n.b. the rest of these slides not presented, but here as a reference

The code editors in ModelSim/Questa/Quartus aren't great

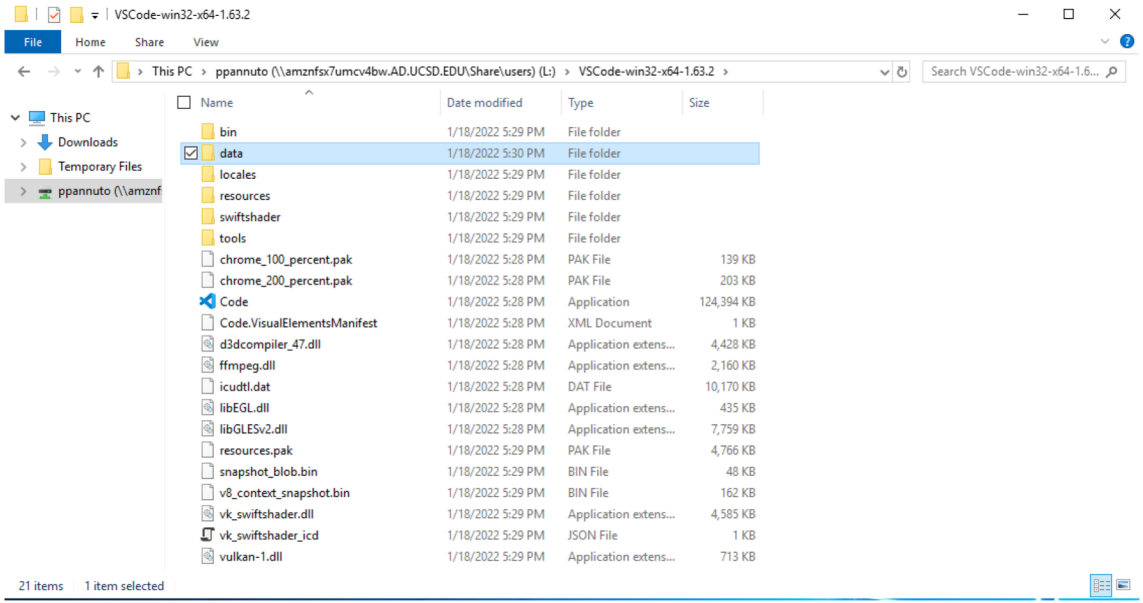
- You can use them, but more modern editors have some helpful tools
- Especially around version control
  - Because you are using version control, right?
    - And I don't mean copying folders `milestone1, m1_working, m1_real, m1_final, …`

CloudLabs — What's ephemeral and what's not

- Spins up a 'fresh machine' each login
- But you have a shared **L:/** drive that persists across sessions
  - So put stuff there
  - But also maybe don't trust it 100%
    - [What fixes this? Version control of course!]
- Take advantage of "portable apps"
  - https://code.visualstudio.com/docs/editor/portable
  - https://git-scm.com/download/win – Choose "portable" and install in **L:/**

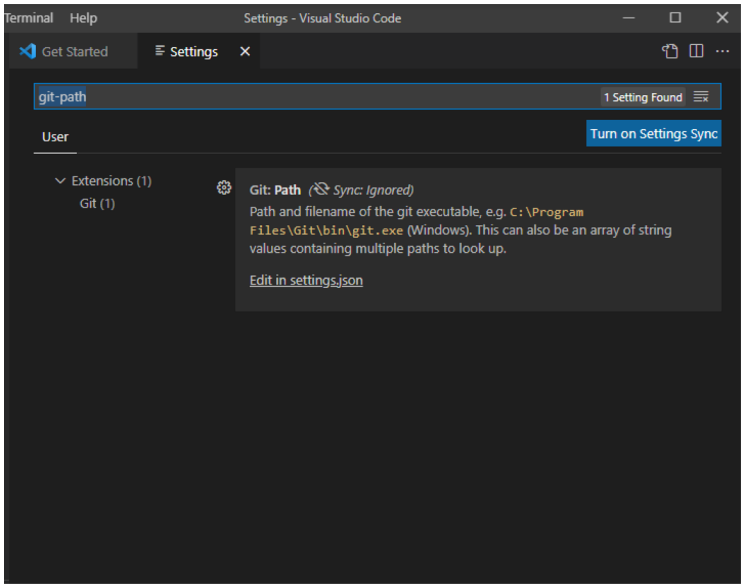
Portable VSCode

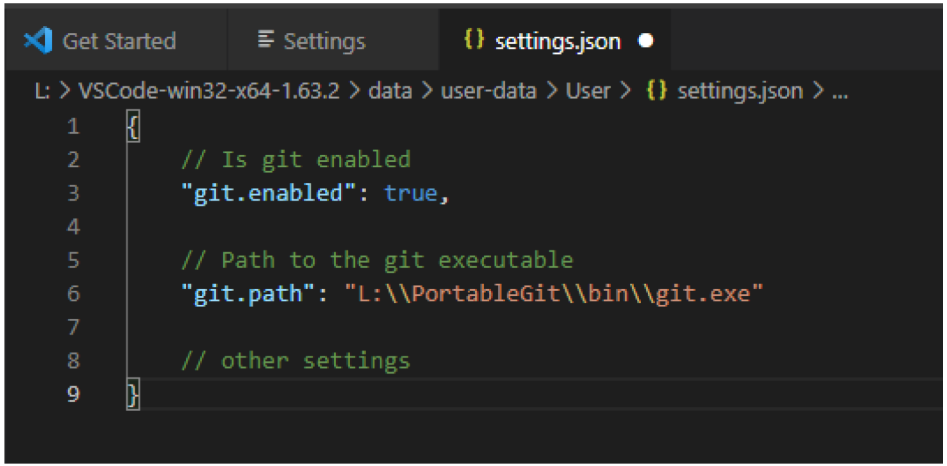
- Download the **zip**, not the installer
- Unzip the folder in your `L:/` drive, and make a folder called `data`



If using portable apps, have to point VSCode to git

- File->Preferences->Settings; search `git-path`; write this json:

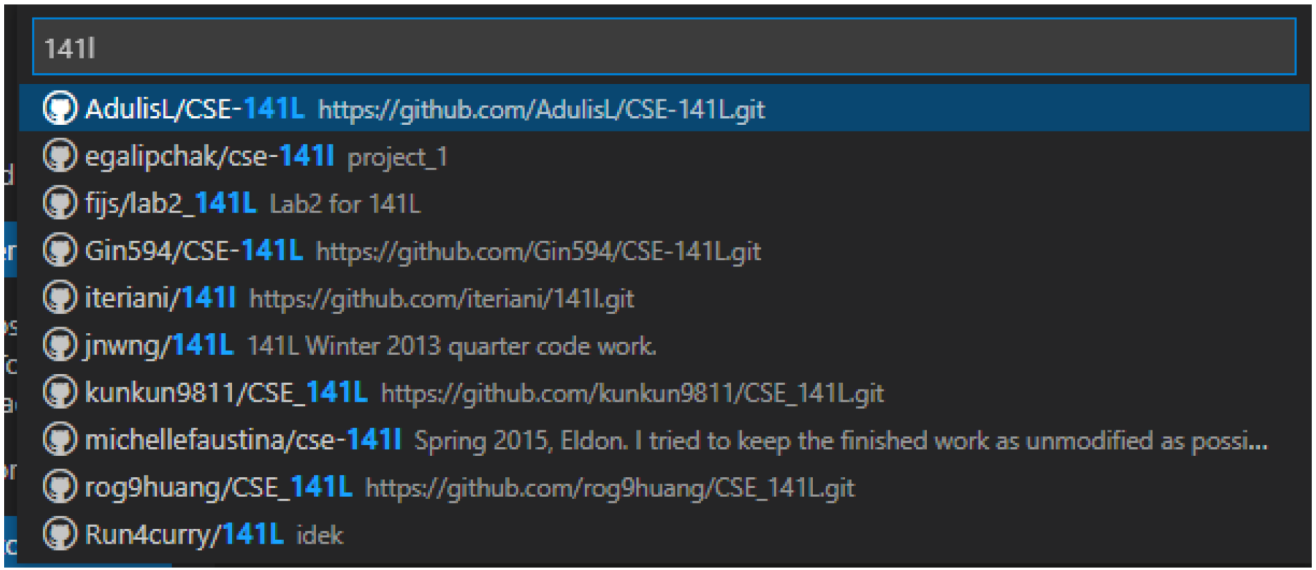




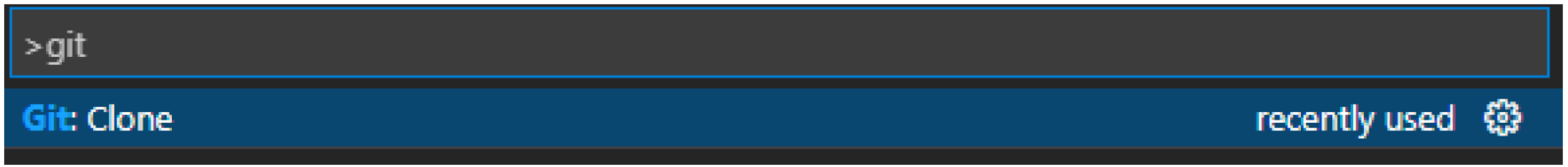

```
{
“git.enabled”: true,
“git.path”: “L:\\YOUR_FOLDER_NAME\\bin\\git.exe”
}
```

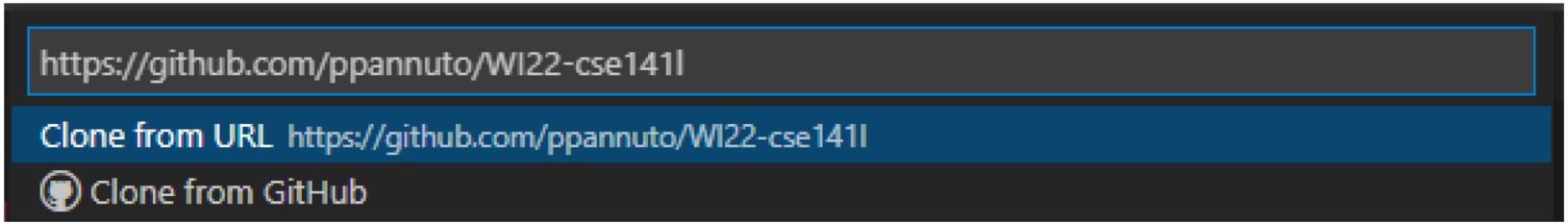
Quick reminder: No public repos please

- Q: What's really clear and indisputable evidence of sharing code?
- A: A publicly accessible repository



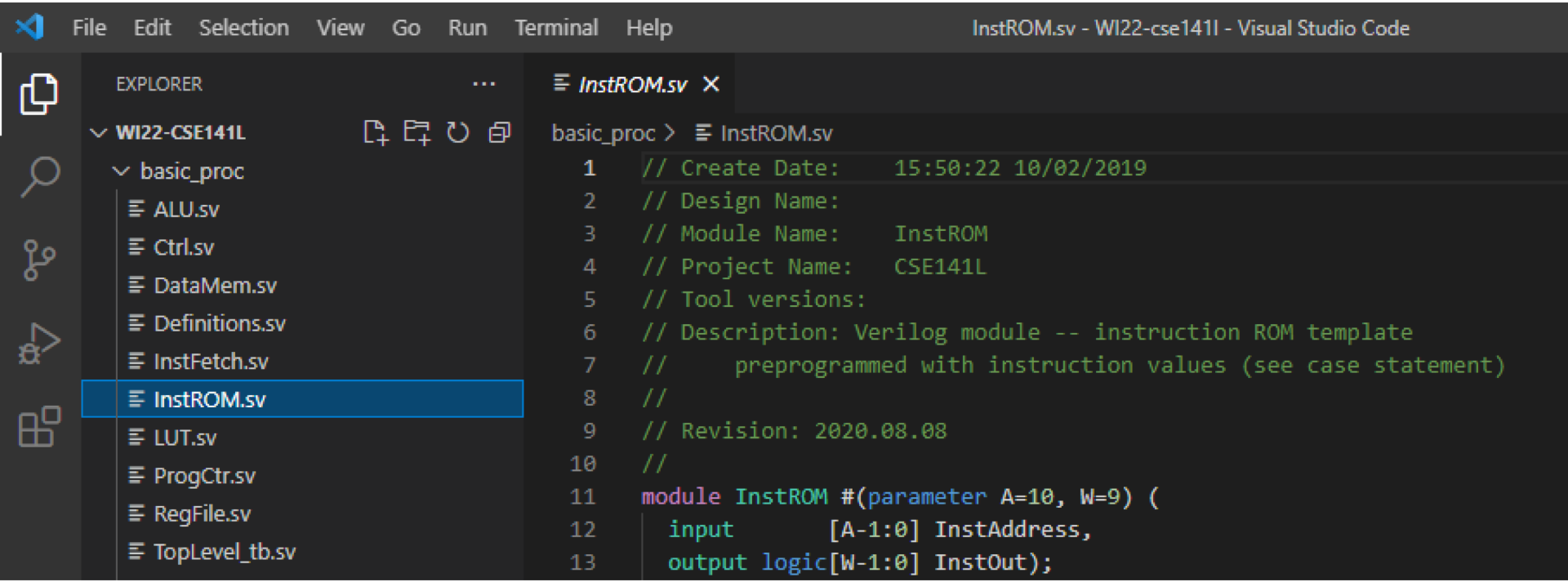
The “github” built-in won’t find private repos, so you have to type the URL by hand



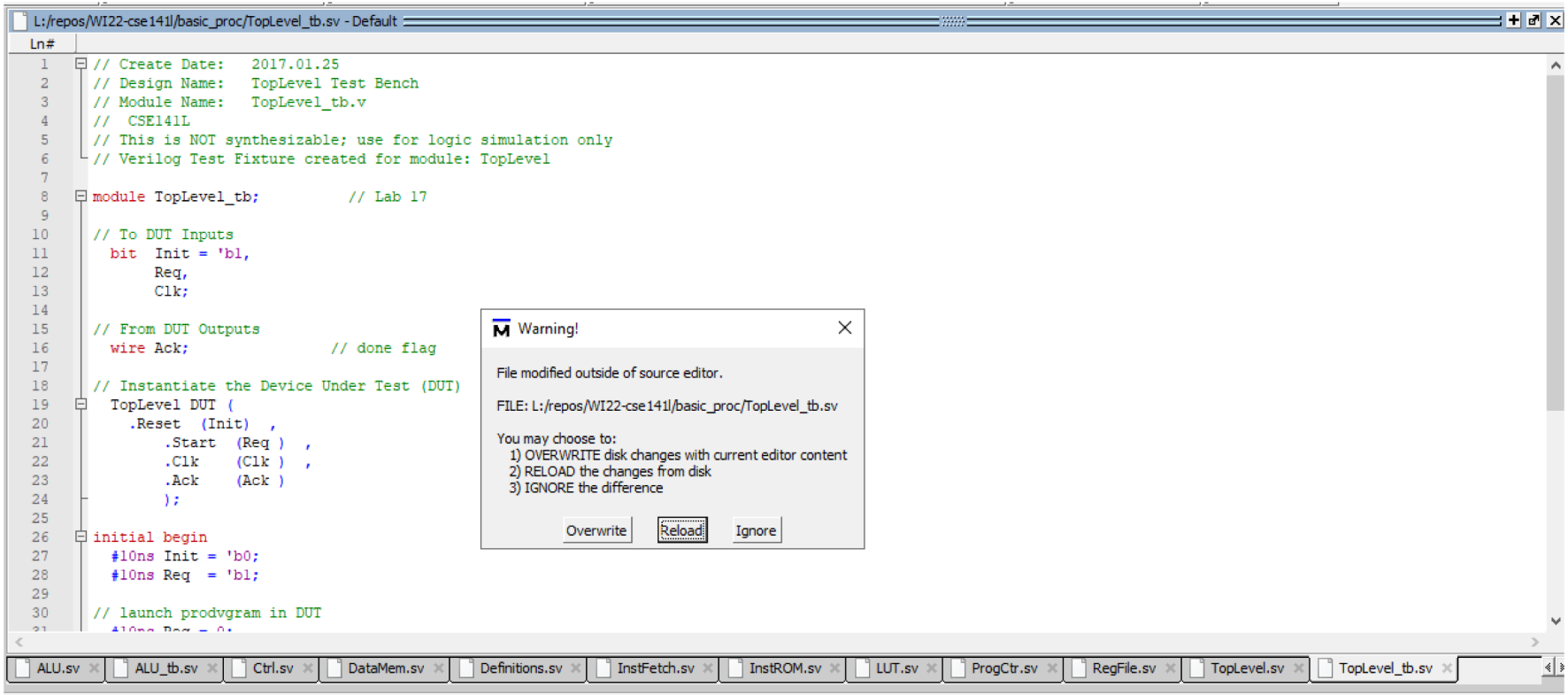


- You can use the default ‘credential helper’ (“manager-core”); authorize it to github; and then it will clone

Now you're set up to code!



Careful, you (can) have two editors open



[Demo Plan]

- Create new project from basic_proc
- Compile
  - Show warnings; explore ALU 1 vs 1'b1
- Go to waveform viewer
  - Show results
  - Work examples / take Q's