
Platform setup: Linux / WSL2

Key takeaways

1. Linux is the baseline: department hosts, personal Linux, and WSL2 all fit.
2. Use sudo only on machines you own; the department-host path is no-root.
3. Keep repos in the Linux home so git, tests, and agents see one filesystem.

The baseline is a Linux shell, not a machine

git, gh, tmux, node, rg, uv, and Codex must resolve wherever you work

- The course baseline is a Linux shell with git, gh, tmux, node, rg, uv, and Codex available.
- Department hosts give you that model immediately. Personal Linux and WSL2 give you the same model locally.
- The only major difference is privilege: sudo is normal on your own Linux/WSL2 install and unavailable on department hosts.

Three Linux-like places you may work

Same command model, different ownership boundaries

Department hosts

Reach them over SSH. git, gh, tmux, node, and rg are already installed, and you never get sudo.

Run `/usr/bin/chkquota` first; never reach for sudo.

Personal Linux

You own the machine, so you own sudo, the package manager, and the disk budget.

Install the system layer once with apt or dnf.

WSL2 Ubuntu

A real Linux kernel beside Windows. Windows Terminal is the launcher; Ubuntu is the shell that runs the work.

Keep repos in `/home/<you>`, never `/mnt/c`.

Prefer Linux semantics everywhere: forward slashes, one \$HOME, one shell, one repo root.

Personal Linux: install the system layer

Skip this on department hosts; they already provide the basics

```
# Ubuntu / Debian – bootstrap only; ./setup pins the rest
sudo apt update                # refresh the package index
# -y: don't prompt for confirmation
sudo apt install -y git gh tmux curl

# Fedora (-y: don't prompt for confirmation)
sudo dnf install -y git gh tmux curl
```

- After the system layer exists, ~/dotfiles handles user-space tools under ~/.local.
- Do not run sudo inside the department-host setup path. You do not have it and do not need it.

WSL2: the recommended Windows path

Open Ubuntu and stay inside the Linux filesystem

```
# In Windows PowerShell, one time – installs the Ubuntu WSL2 distro:  
wsl --install -d Ubuntu
```

```
# Then open Ubuntu in Windows Terminal – bootstrap only:  
sudo apt update                # refresh the package index  
# -y: don't prompt for confirmation  
sudo apt install -y git gh tmux curl
```

- Work under /home/<you>, not /mnt/c/Users/<you>. Linux tools are faster and simpler there.
- VS Code Remote WSL is fine, but the terminal running setup should be the Ubuntu shell.

GitHub auth and dotfiles clone

The same command sequence on Linux, WSL2, and department hosts

```
gh auth login          # one-time browser login
gh auth status         # confirm the signed-in account

# clone your private homework repository
gh repo clone utac-f26/dotfiles-<login> ~/dotfiles
cd ~/dotfiles          # enter the cloned repo
./setup                # install tools, link config
```

- Replace <login> with your GitHub username.
- If you have several Linux environments, authenticate gh in each one you actually use.
- The setup script is idempotent: fix the failing layer and rerun it.

Course repo layout

One predictable home for project work

```
# create and enter your course workbench directory
mkdir -p ~/utac
cd ~/utac

# Later assignments follow this shape:
gh repo clone utac-f26/<repo>-<login> <repo>
cd <repo>
git status
```

~/dotfiles configures your environment. ~/utac holds the code you will ask agents to change.

Agent workspace checks

Before asking Claude or Codex to edit code

Question	Command	Good answer
Am I in Linux?	uname -a	Linux kernel, including WSL2
Am I in the repo?	git status	Shows the repo branch and changes
Where am I?	pwd	/home/<you>/... or /u/<you>/..., not /mnt/c
Can tools run?	which gh codex uv	Commands resolve from expected paths

Quota, caches, and disk space

Department hosts make this visible first, but laptops hit it too

```
/usr/bin/chkquota          # department hosts
df -h ~                    # personal Linux / WSL2
du -ahd1 ~ | sort -h       # biggest directories
uv cache prune             # reclaim uv cache
rm -rf ~/.cache ~/.vscode-server # safe; recreated when needed
```

- Department undergrad home quota is 15 GB and cannot be increased.
- The usual space hogs are ~/.cache, ~/.vscode-server, browser caches, and language package caches.

Linux / WSL2 gotchas

Common fixes before escalating

- apt package not found
 - Run `sudo apt update` first; if still missing, check whether you are on Ubuntu, Debian, or Fedora.
- WSL repo feels slow
 - Move the repo from `/mnt/c/...` to `/home/<you>/...` and retry.
- gh auth works on Windows but not WSL
 - Credentials are per environment. Run `gh auth login` inside WSL too.
- Agent edits wrong tree
 - Run `pwd` and `git status` before every substantial agent request.

Key Takeaways

1. Linux is the course baseline; department hosts, personal Linux, and WSL2 all fit it.
2. Use sudo only on machines you own. The department-host path is no-root by design.
3. Keep repos under Linux home directories so git, tests, and agents see one filesystem model.