Day One: What is Linux?

Linux Week SP26

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On “Learning Linux”

You can use the GUI. You can download things from the internet. You can effectively use Linux like Windows.

HOWEVER, “Learning Linux” makes your life easier.

- Manually search through tons of folders and files => a little CLI-fu
- Updating & installing programs is slow and tedious => sudo apt install x
- “Oh god why is my machine broken” => Seeing the exact error message

The best way to learn? Ask questions & practice skills to solve everyday problems.

- How to find files from terminal? Practice it!
- Something broke. How do I fix it? Investigate it!
- I want to change something on my system. Research it!

It is 2026, not 2006. Use the internet!

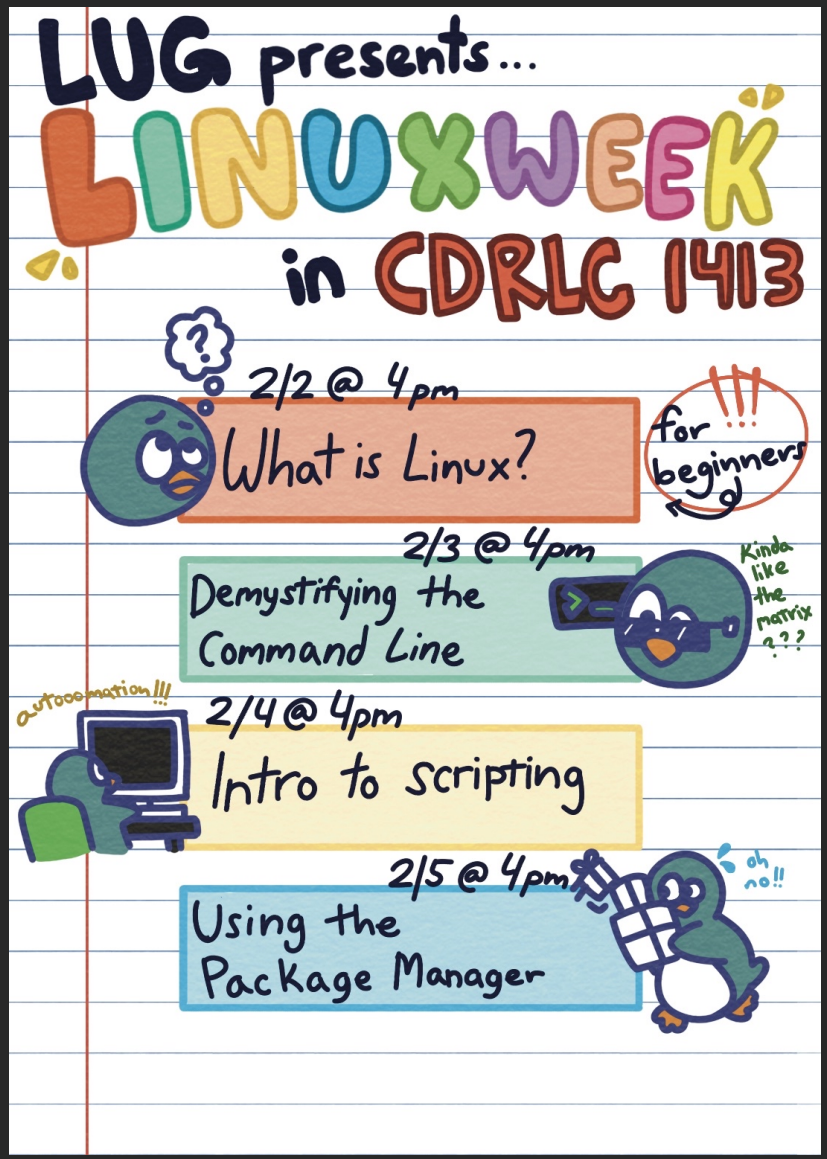
What is Linux Week?

Demystifying the Command Line
Basic command line usage & filesystem traversal via scavenger hunt!

Intro to Scripting
How to solve problems, use novel CLI tools, all to solve challenges!

Using the Package Manager
How to use package manager & find right tool to solve a problem. Collective problem solving!

TL;DR: Learn by doing!



The Technical Answer

What is Linux?

The Kernel

Any answer given short of a lecture will be riddled with asterisks.

Your computer can run multiple programs at once* because of the Kernel. It is the core of any Operating System. It manages and shares system resources between programs by:

- Managing Memory
  - Programs are greedy and assume they have ALL of memory.
- Scheduling processes
  - Only so much CPU, many things that need to run.
- Managing Filesystem I/O
  - Hardware: Kernel is your buddy. Tells you what to do.
  - Software: Kernel is your buddy. Tell it what you want to write.
  - User: Kernel is your buddy. Symlinks, rearrange files, etc.

Linux Distros

Package Managers

- Release Cycle
  - Debian: Super Stable
    - Months of testing & QA, smooth as butter. Stability > Novelty
  - Arch: Bleeding Edge
    - No releases, just package most recent version of software. Novelty > Stability.
- Package Repositories
  - Availability
  - Arch AUR
- NixOS

Ancestry

Most popular OSes are typically based off of:

- **Debian**
- **Ubuntu**
- **Arch**

There are *quite a few.*

The Philosophical Answer

What is Linux?

Free, as in Libre

Windows

- Effectively monetarily free, still requires you trick activation server
- Random updates at worst possible moment
- Always forcing new Microsoft bloat down your throat:
  - Copilot
  - OneDrive EVERYTHING
  - Start menu now searches internet!?
- Something broke? Pray its just Windows being Windows

MacOS is locked to Apple Hardware.

Linux

- GPLv2: Copyleft
  - TL;DR: Go crazy as long as you GPLv2 your code & open source it
- Something broke?
  - Everything that your system has done since boot has been logged.
  - 99% chance that your problem has an Arch Wiki article.
- “Windows supports so much more!”
  - Community patches, Containerization, Proton
  - Mainly CAD & Adobe Suite Software stuck on Windows

Open Source

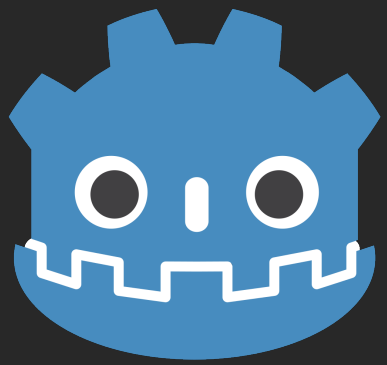
Linux promotes an Open Source ecosystem!

Open Source:

- Free, as in Free!
  - Share Open Source software all you want!
- Secure
  - Volunteers find bugs, vulnerabilities, review security
- Developers are Users
  - Focus is on making something actually usable, not extorting users for profit

You probably already use some Open Source projects:

- OBS
- Blender
- Programming Languages
- Git
- Godot



The Practical Answer

What is Linux?

Not Windows.

Things will take time to get used to.

- Command Line
- Package Manager
- Setting some things up by hand

However, a lot of things will be better!

- Super efficient
- FOSS Ecosystem

Where to start?

Ubuntu & Mint are common for good reason. I'd recommend Mint over Ubuntu.

Many people try to "learn Linux". What they generally mean is they want to learn:

- How to get comfy with the command line?
- How do I fix problems?
- What does a free operating system even mean for me?