From knowing the definition of Linux Kernel to becoming a kernel hacker

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Who Am I?

- Freelance Linux Kernel Developer
- Co-organizer of RGSoC
- Co-coordinator of Outreachy for Linux Kernel projects
- Linux Kernel and Open source evangelist
- Open learning and open education enthusiast/advocate

What this talk is about

Journey of

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More about

My Idea of Linux Kernel Engineer v/s Me

1

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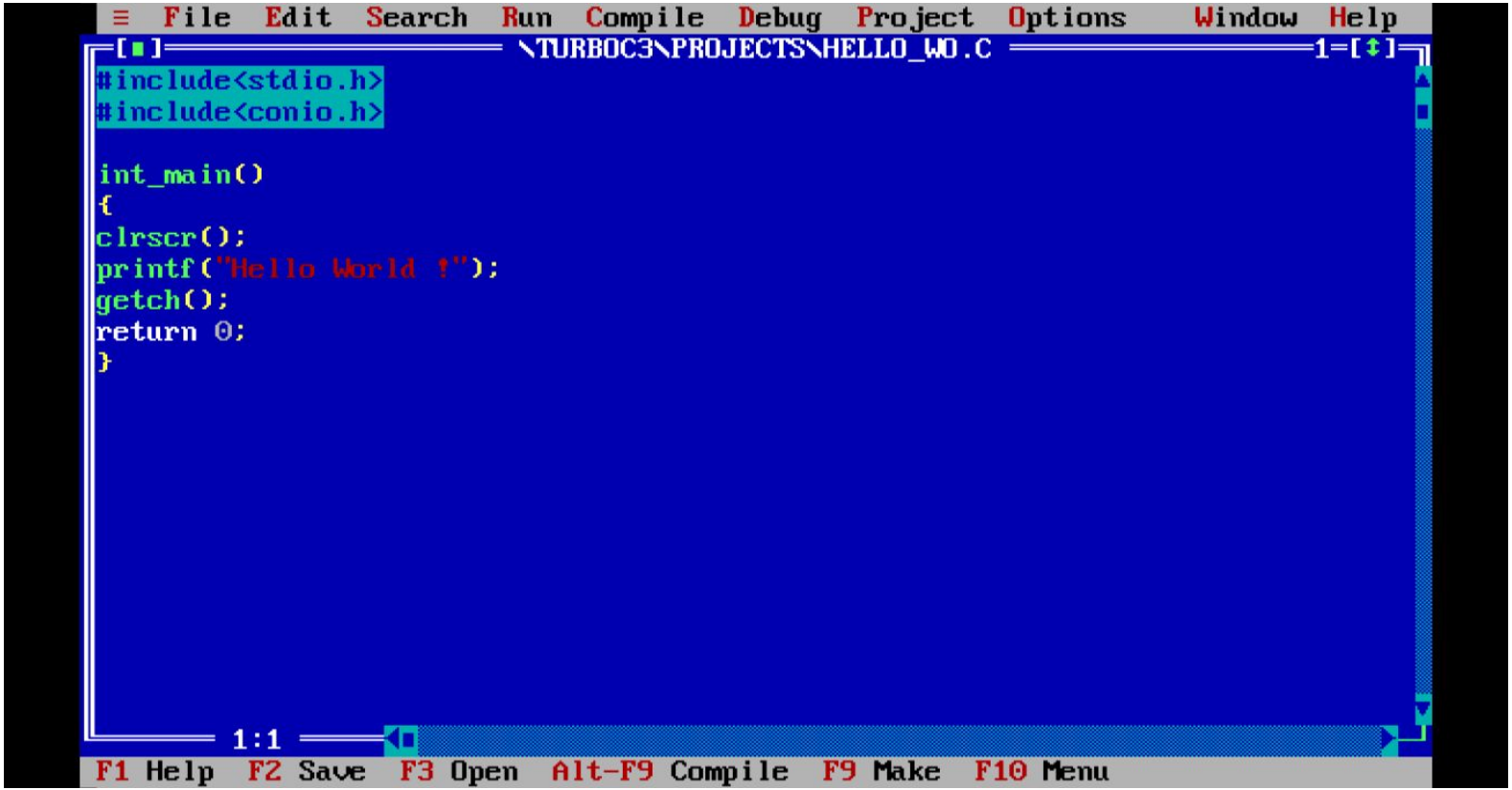
1



My Idea of Linux Kernel Engineer v/s Me

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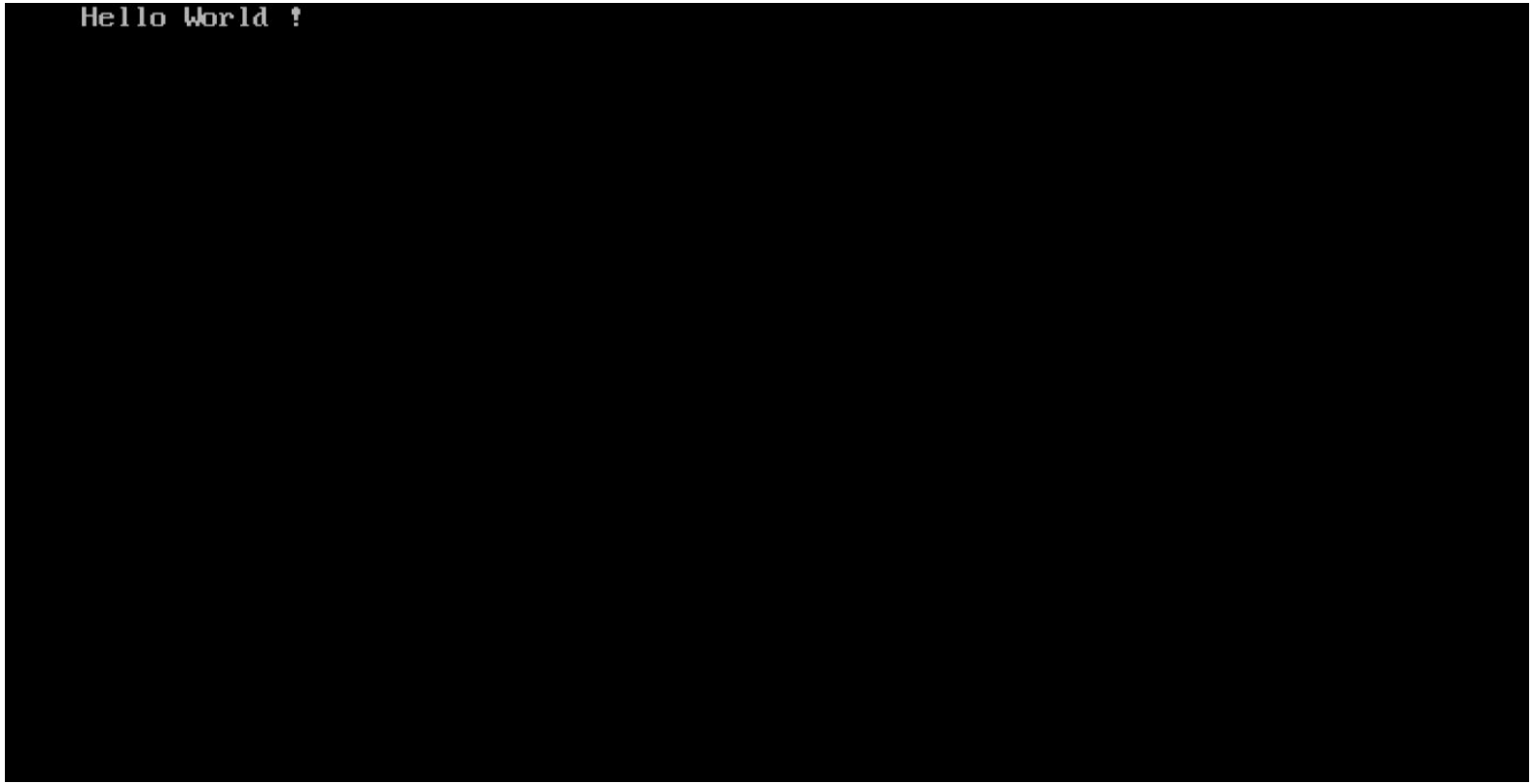

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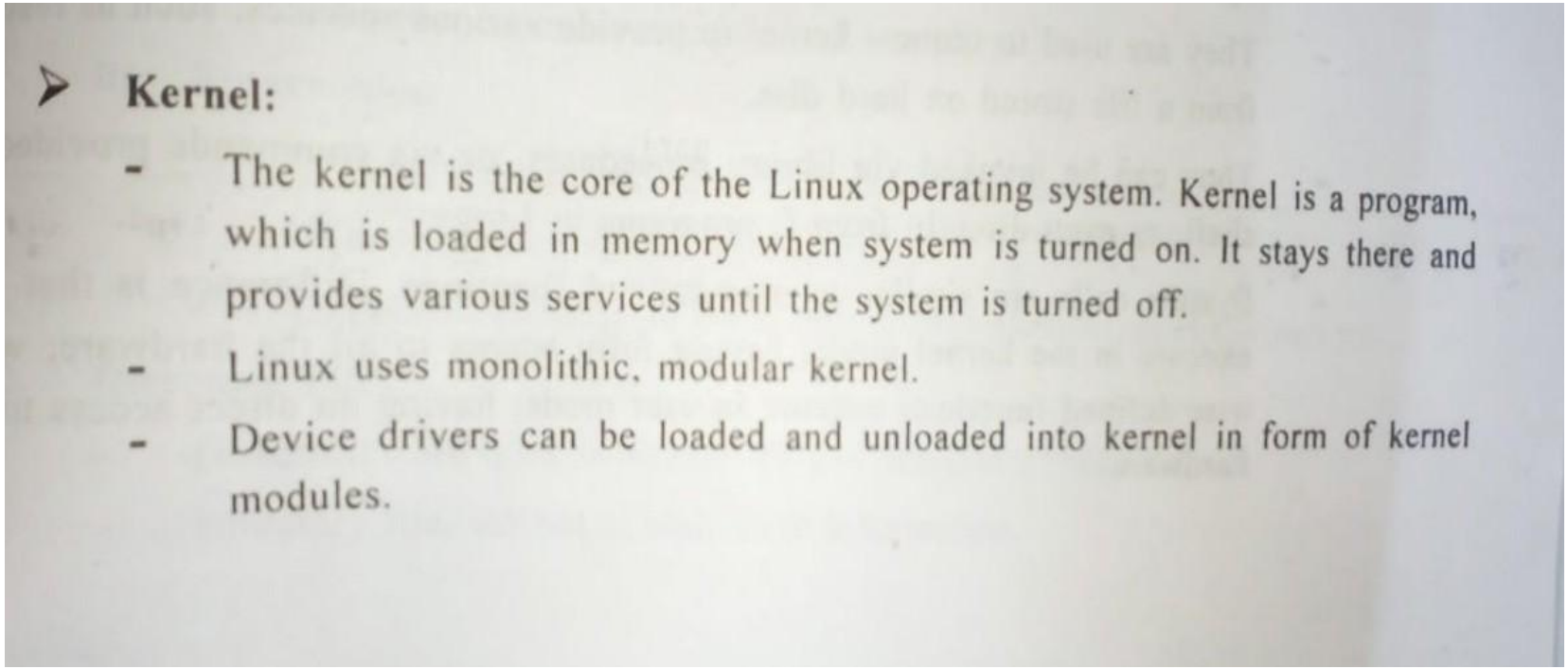

➢ **Kernel:**

- The kernel is the core of the Linux operating system. Kernel is a program, which is loaded in memory when system is turned on. It stays there and provides various services until the system is turned off.
- Linux uses monolithic, modular kernel.
- Device drivers can be loaded and unloaded into kernel in form of kernel modules.

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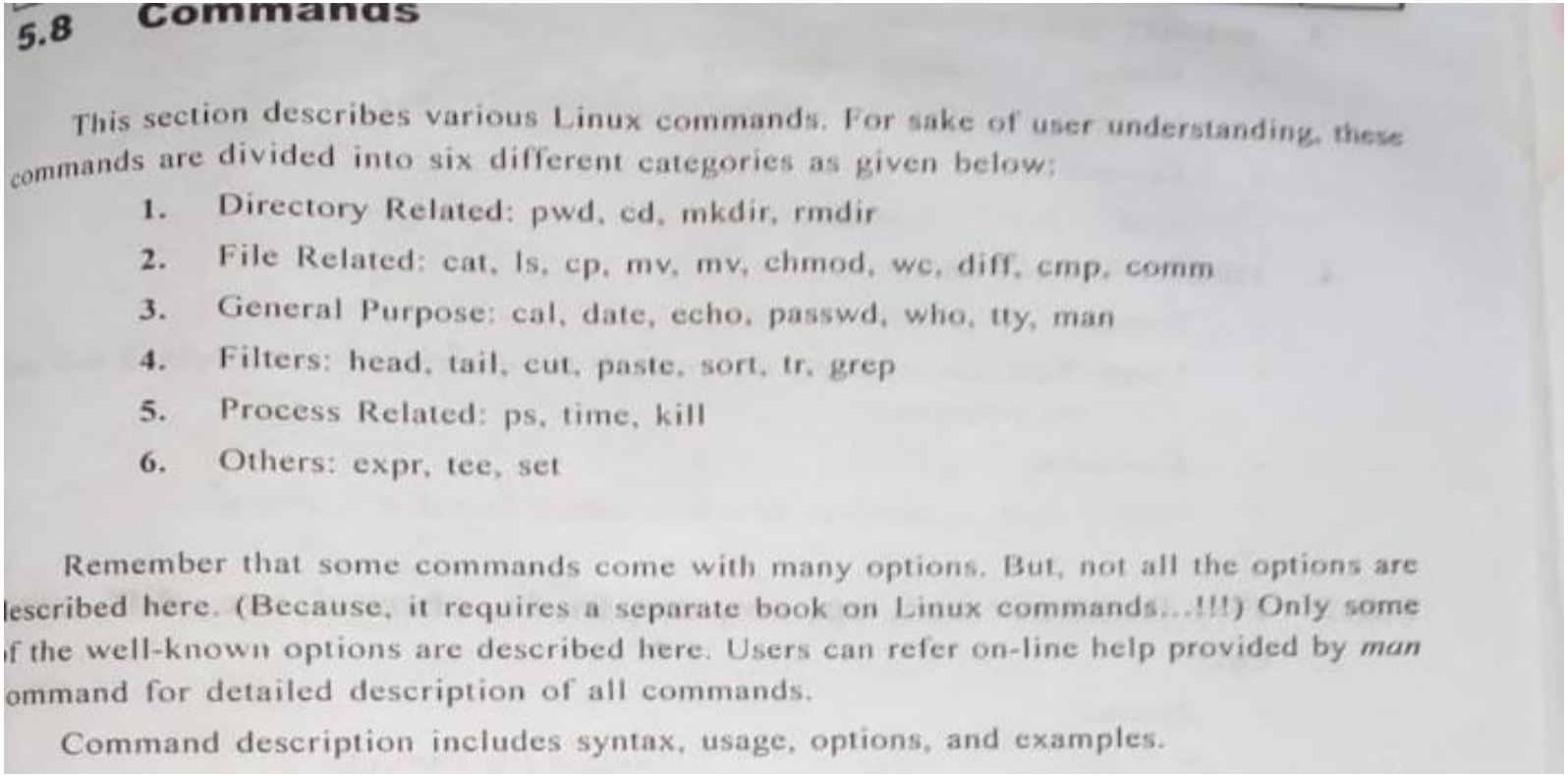

5.8 Commands

This section describes various Linux commands. For sake of user understanding, these commands are divided into six different categories as given below:

1. Directory Related: pwd, cd, mkdir, rmdir
2. File Related: cat, ls, cp, mv, mv, chmod, wc, diff, cmp, comm
3. General Purpose: cal, date, echo, passwd, who, tty, man
4. Filters: head, tail, cut, paste, sort, tr, grep
5. Process Related: ps, time, kill
6. Others: expr, tee, set

Remember that some commands come with many options. But, not all the options are described here. (Because, it requires a separate book on Linux commands...!!!) Only some of the well-known options are described here. Users can refer on-line help provided by *man* command for detailed description of all commands.

Command description includes syntax, usage, options, and examples.

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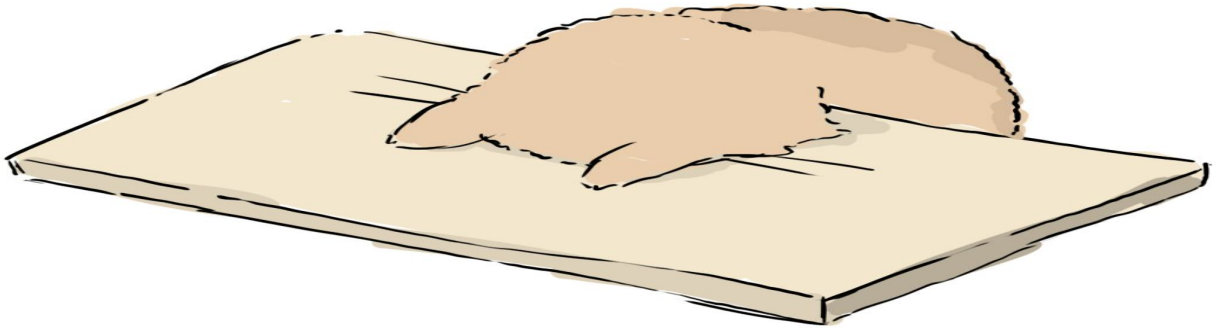

Then how did I started hacking on Linux Kernel?

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What I did?

- Installing Linux Distro

What I did?

Me after discovering GCC

What I did?

Discovering Outreachy

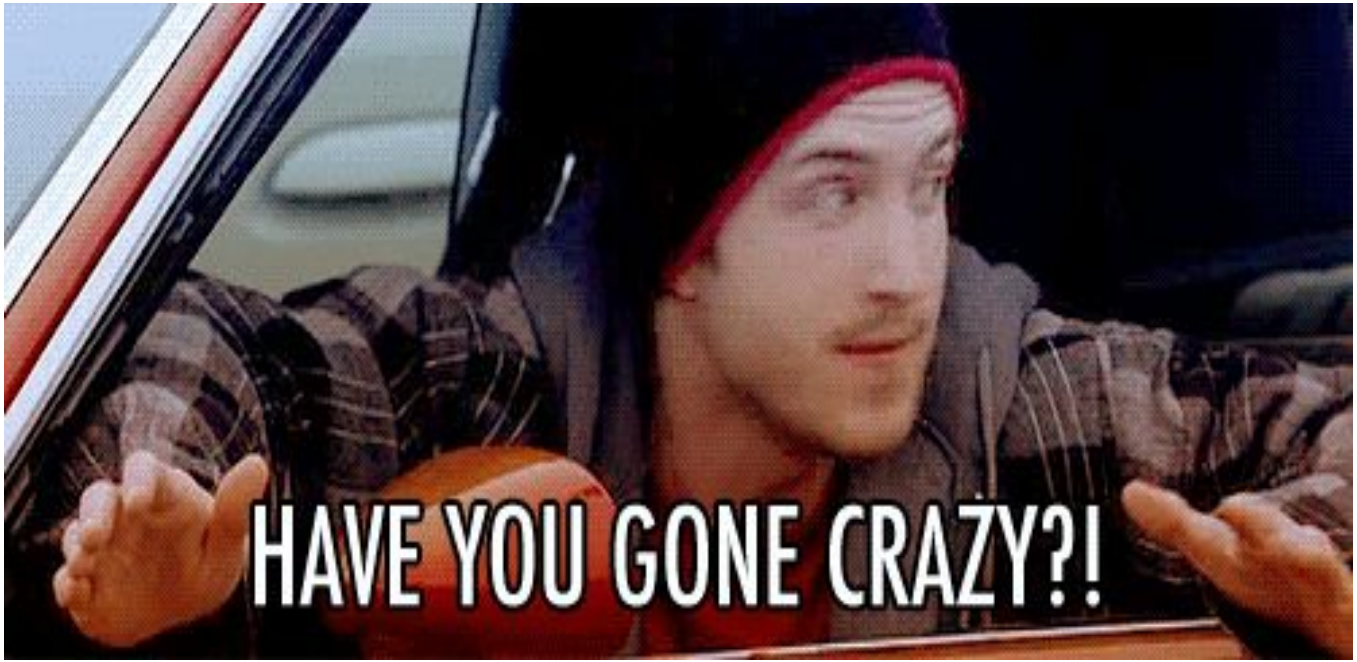
What I did?

"Thanks, your patch is applied"

What I did?

Linux kernel intern -> Linux Kernel Engineer

So you mean one need to get fractured to be a Linux Kernel hacker?



A Growth Mindset

Can positive attitude help you to be a Linux kernel hacker?

Like anything else, learning is a skill as well and you can get better at it when you start putting efforts!

Six self learning skills for Linux Kernel

1. Finding right resources

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    a. Source code and LWN articles

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    a. Source code and LWN articles
    b. Mailing list archives
    c. Git {grep, blame, log, show} 
    d. Conference talks and kernel developer blogs

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2. Asking questions

    a. Important to figure out why you don’t know about X or why is it difficult to understand Y topic

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    b. Good questions v/s bad questions

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a. Important to figure out why you don’t know about X or why is it difficult to understand Y topic
b. Good questions v/s bad questions
c. Mailing list etiquettes

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3. Understanding Maintainer’s style

a. Not all subsystem maintainers prefer same style of patch submission

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3. Understanding Maintainer’s style

   a. Not all subsystem maintainers prefer same style of patch submission
   b. Patch series v/s patch per change

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4. Automating the learning

    a. Use existing tools [Git grep tricks, Vim editor tricks]

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4. Automating the learning

   a. Use existing tools [Git grep tricks, Vim editor tricks]
   b. Write your own scripts [bash, coccinelle] by recognizing the repetitive tasks/patterns

Six self learning skills for Linux Kernel

5. Keep updating your knowledge about kernel subsystems

a. New v/s old v/s deprecated APIs/subsystems

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5. Keep updating your knowledge about kernel subsystems

a. New v/s old v/s deprecated APIs/subsystems
b. From Subsystem specific Git trees to stable tree

Six self learning skills for Linux Kernel

6. Improving your craft as a programmer
    a. Recognizing the difference between good/bad/intelligent code

Six self learning skills for Linux Kernel

6. Improving your craft as a programmer
    a. Recognizing the difference between good/bad/intelligent code
    b. Learning from other programmers

Let’s be open about sharing our learning in Linux Kernel and build something new/exciting/impossible together!