Linux Kernel Programming

Wed,Fri 9AM - 11.30 AM @ KD 102 or KD 306

Course and instructors

$whereis cs698z

https://www.cse.iitk.ac.in/users/deba/cs698z-kernel.html

Moodle (TBA)

$whereis deba

KD 212, deba@cse.iitk.ac.in, Extn: 2004

Meeting hours: 2pm - 5pm Wed and Fri

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http://www.cse.iitk.ac.in/users/ssahai/

Evaluation

1. Two Quizzes (10%)
2. In class exercises (10%)
3. Three assignments (30%)
4. Project (30%)
5. End-semester (20%)

References

Understanding the Linux Kernel, Daniel P. Bovet, Marco Cesati.
Linux Kernel Development, 3rd Edition, Robert Love.
Linux Device Drivers, 3rd Edition, By Jonathan Corbet, Greg Kroah-Hartman, Alessandro Rubini.
Linux kernel documentation
www.lwn.net
...
Topic specific (will be added in course page)

CS698Z enables you to ...

➜ Not panic if someone asks "Can you write code in kernel?"

➜ Provide guidance to conceive and critically analyse new directions

➜ Empirically analyse different designs at a finer granularity

➜ Think alternate design choices to

◆ Meet application level demands

◆ Exploit advanced hardwares

➜ Design and implement new ideas

CS698Z is not ...

➔ Another or advanced (in traditional sense) OS course

➔ Writing a new operating system

➔ Creating a new linux distribution

➔ Understanding Linux kernel in entirety

➔ Anything other than the content of next slide

CS698Z is ...

➜ Better understanding of OS design and implementation
- ◆ OS refresh
- ◆ Code study

➜ Experiencing   (in-class exercises/homeworks)
- ◆ Code debugging
- ◆ Hacking/tweaking

➜ Extending (assignments)
- ◆ To understand better
- ◆ Implement simple extensions

➜ Research/Innovation in OS
- ◆ Paper discussion
- ◆ Project idea conceptualization

Logistics

➔ Personal laptops with 1.5hr backup desirable

➔ Virtual machine will be our "machine for learning"

◆ Install your choice of hypervisor (VM enabler)

◆ Create a Linux VM (Ubuntu Linux recommended)

➔ If required, we can provide remotely accessible VMs to work on

"Take pride in honest hard work "

"Cheating implies accepting defeat"

"If you are here to learn, never defeat the purpose by cheating"

https://www.cse.iitk.ac.in/pages/AntiCheatingPolicy.html