

# 1 SYSTEMS PROGRAMMING LABORATORY VIII - Device Drivers

## Examples&Exercises:

- Kernel and module compilation.
  - *insmod*, *modprobe*, *lsmod*, *rmmod*.
  - Analyze the code and output.
1. Kernel and module compilation; [linux-2.6.20.7.tar.gz](#)
    - Download the kernel code.
    - Extract it to the directory */usr/src*
    - Create the symbolic link *linux* to the kernel directory
    - *make menuconfig* (optional; study the kernel internals)
    - *make bzImage*
    - *make modules*
    - *make modules\_install*
  2. Studying *hello* module; [Makefile](#), [hello.c](#)
    - Study and analyze the codes, outputs.
    - *make*
    - *insmod* (or *modprobe*)
    - *lsmod*
    - *rmmod*
  3. Scull (Simple Character Utility for Loading Localities);
    - Scull is a char driver that acts on a memory area as though it were a device.
    - The advantage of scull is that it isn't hardware dependent. scull just acts on some memory, allocated from the kernel.
    - Anyone can compile and run scull, and scull is portable across the computer architectures on which Linux runs.
    - On the other hand, the device doesn't do anything "useful" other than demonstrate the interface between the kernel and char drivers and allow the user to run some tests.

[lddexamples.tgz](#)

- Download the code.
- Study and analyze only the *scull* codes.