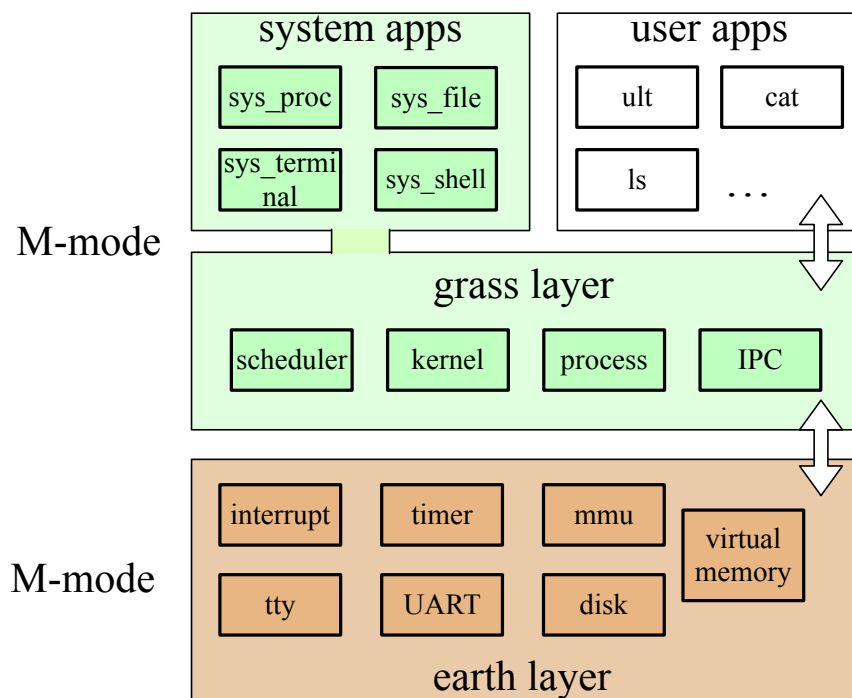


CS6640, Week 04a

1. egos architecture



2. egos-2k+ booting process I

```

1  ----- Simulate on QEMU-RISCV -----
2  qemu-system-riscv32 -M virt -smp 4 -m 8M -bios tools/egos.bin -nographic
3      -drive if=pflash,format=raw,unit=1,file=tools/qemuROM.bin
4      -device sdhci-pci,addr=0x1
5      -device sd-card,drive=MMC
6      -drive if=none,file=tools/disk.img,format=raw,id=MMC
7  [CRITICAL] --- Booting on QEMU with core #2 ---
8  [SUCCESS] Finished initializing the tty and disk devices
9  [INFO] Use direct mode and put the address of the trap_entry into mtvec
10 [SUCCESS] Finished initializing the MMU, timer and interrupts
11 [SUCCESS] Enter the grass layer
12 [INFO] Load kernel process #1: sys_process
13 [INFO] Load 0x4400 bytes to 0x80200000
14 [INFO] Load 0x510 bytes to 0x80208000
15 [SUCCESS] Enter kernel process GPID_PROCESS
16 [INFO] Load kernel process #2: sys_terminal
17 [INFO] Load 0x3660 bytes to 0x80200000
18 [INFO] Load 0x274 bytes to 0x80208000
19 [SUCCESS] Enter kernel process GPID_TERMINAL
20 [INFO] sys_process receives: Finish GPID_TERMINAL initialization
21 [INFO] Load kernel process #3: sys_file
22 [INFO] Load 0x5040 bytes to 0x80200000
23 [INFO] Load 0x9c4 bytes to 0x80208000
24 [SUCCESS] Enter kernel process GPID_FILE
25 [INFO] sys_process receives: Finish GPID_FILE initialization
26 [INFO] Load kernel process #4: sys_shell
27 [INFO] Load 0x4da4 bytes to 0x80200000
28 [INFO] Load 0x89c bytes to 0x80208000
29 [CRITICAL] Welcome to the egos-2k+ shell!
30 → /home/cs6640 %

```

3. egos-2k+ booting process II

```
CPU jumps to 0x80000000
|
+--> earth/boot.s:boot_loader
    |
    +--> earth/boot.c:boot
        |
        +--> grass/init.c:grass_entry
            |
            +--> grass.c:main
                |
                +--> ['mret' to APPS_ENTRY]
                    |
                    +--> apps/system/sys_proc.c:main
                        |
                        ...
                        |
                        +--> apps/system/sys_shell.c:main
                            |
                            +--> [your program]
```