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SER 334 – Assignment 5

04/01/2023

**Kernel Version: 5.19**

**Functions:**

* module\_init(x)
  + Defined on line **88** in **module.h**
  + **Description:** driver that accepts a function as a parameter and executes it at kernel boot time or module insertion.
* module\_exit(x)
  + Defined on line **100** in **module.h**
  + Description: driver that accepts a function as a parameter and executes it when kernel is removed.

**Task\_struct:**

* Defined on line **727 - 1518** in **sched.h**
* **Attributes:**
  + Process Name: task→comm
  + PID: task→pid (Line: 950)
  + State: task→ \_\_state (Line: 734)
  + Prio: task→ prio (Line: 772)
  + Static Prio: task→static\_prio (Line 773)
  + Normal Prio: task→normal\_prio (Line 774)

**Header Documentation**

* **for\_each\_process**
  + Defined on line **645** in **sched/signal.h**
  + **Signature: int** for\_each\_process( struct task\_struct \*task )
  + **Parameters:** takes a pointer to a struct task\_struct
  + **Description:** loops over tasks to perform some action
* **printk**
  + Defined on line **464** in **printk.h**
  + **Signature:** int printk(fmt, “text”)
  + **Parameters:** fmt: format, “text” – string text
  + **Description:** Prints a kernel message
* **module\_param**
  + Defined on line **126** in **moduleparam.h**
  + **Signature:** int module\_param(name, type, perm)
  + **Parameters:** 
    - name: the variable to alter, and exposed parameter name.
    - type: the type of the parameter
    - perm: visibility in sysfs.
  + **Description:** typesafe helper for a module/cmdline parameter
* MODULE\_PARM\_DESC
  + Defined on line **33** in **moduleparam.h**
  + **Signature:** MODULE\_PARM\_DESC(\_parm, desc)
  + **Parameters:** 
    - \_parm: the parameter variable
    - desc: description on usage
  + **Description:** One for each parameter, describing how to use it.