ELEC 377 Lab 1 – Description of Solution

Section 003, Group 16 – Thursday Lab

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Problem Description

The purpose of Lab 1 is to build a loadable kernel module to add extra functionality to the Linux kernel and gain some understanding of the internal data structures in the Linux kernel. The group wrote a Linux module that returns process information about the current running process. The process information includes name, PID, PPID, State, Real UID, Effective UID, Saved UID, Real GID, Effective GID, and Saved GID.

Solution Approach

To create the kernel module, the functions in the last three lines of the lab1mod.c file were examined. The last three lines consisted of "*MODULE_LICENSE("GPL"), module_init(), module_exit()."* The module is licensed as "GPL" to enable the functionality from the module that provides the "*/proc*" file system. Additionally, the functions *module_init()* and *module_exit()* are used when the module is loaded and removed. These final three lines are used to provide the "*/proc*" file system to use the functionality from the module. To create the lab1 file in the directory, *module_init()* calls the *lab1_init()* function and similarly, to remove the file, *module_exit()* calls the *lab1_exit()* function.