ELEC 377 Lab 2 Code Documentation

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File Name: lab2.c

Objective: Write a C program that prints the prints the process information of the system.

Code Description:

The init_module function is the function that is used when we type insmod to load the kernel into the OS. It serves as the “main” function for this system process. It first declares a pointer to the proc_dir_entry struct. A new proc_entry is then created. The if statement serves to check if proc_entry was created successfully. If it was not created successfully the init_module returns -1 to indicate failure. If the proc_entry is successfully created, my_read_proc is assigned to its element read_proc.

my_read_proc serves as the function that prints the process information. We declare pageSize to display the size of the page in k using “>> 10”. At the beginning of the file, headers are printed out for the process information. The first task is found using a while loop and checking if the pid value is nonzero. Since this is a circular linked list, the firstTask is stored for later. The firstTask is then printed along with the second task using a do while loop to find the second task. Depending on if the mm field is null, we print either two zeroes or the value using our page size variable from earlier to display it in 4K. Finally the else block looks for all remaining tasks and prints them out until the firstTask is reached again.

The cleanup_module is called by the kernel when the module is removed and only has one line using the remove_proc_entry function.