Project 1 Write Up

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What do you think the main point of this assignment is?

I think the main purpose of this assignment was to investigate the Linux kernel first hand. This was a good way to become familiar with the Linux kernel build process.

How did you personally approach the problem? Design decisions, algorithm, etc.

After learning that **RR** and **FIFO** scheduling algorithms come standard in the Linux kernel from researching we decided to compare the version of the Linux kernel that we had to the stock Linux kernel. I *greped* through the stock Linux kernel source code and found that the scheduling algorithms are contained with in the *sched.c* and *sched_rt.c* I ran a *diff* between the two versions and found that in the project 1's source code was missing a few functions that are necessary for the **RR** and **FIFO** scheduling algorithms. After finding that the sched files differed I created a patch file with the **RR** and **FIFO** implementation.

How did you ensure your solution was correct? Testing details, for instance.

To verify my **RR** and **FIFO** scheduling algorithms were successfully implemented I recompiled the Linux kernel after applying the patch to the *sched* files. Once I had the kernel built I installed the image with a unique name and label and booted into it. Once I was running my system on the new 3.0.4 kernel I then could issue the system call *sched_setscheduler*. The system call was faily weird so after some research I found that there was a builtin command *chrt* and you can run commands with specific prioritys and schedualing algorithims. I then used *chrt* to test that the implementation was correct.

What did you learn?

I like this project because I learned how to build the Linux kernel from scratch and how to use patch files. While I have built other large projects from source before I have never built such a crucial part of a system before like the kernel. It was also very cool to use the *patch* function and create patch with *diff*, a tool I use all of the time.