EI331 Course Project

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I. PROJECT 1

A. Introduction

This project is an introduction to the Linux Kernel Modules. We are given two *c* files as the example code and are required to use some global variables and commands to see what the kernel module is doing.

B. Process

The project mainly consists of two parts. One is to load and remove kernel modules and the second is to use the */proc* file system. We did some simple experiments on the concepts first, and then used 2 excersises to verify whether we have mastered the knowledge. The results for the experiments are as follows(we were asked to print the value of the Golden ratio prime, jiffies, HZ, and used a given function to claculate the greatest common divisor):

FIG. 1: Part of the results

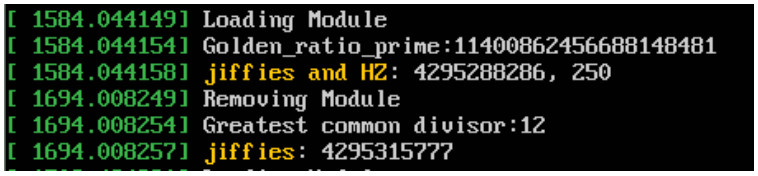

FIG. 2: Part of the results

In the two assignments, we were asked to calcualte and print the number of jiffies and the number of seconds from the time our module was first loaded into the kernel to the time we accessed it. We only have to set a gloabl variable to save the value of jiffies when the module was first loaded into the kernel. The seconds can be calculated similarly using jiffies and HZ. Some experimetal results are shown below:

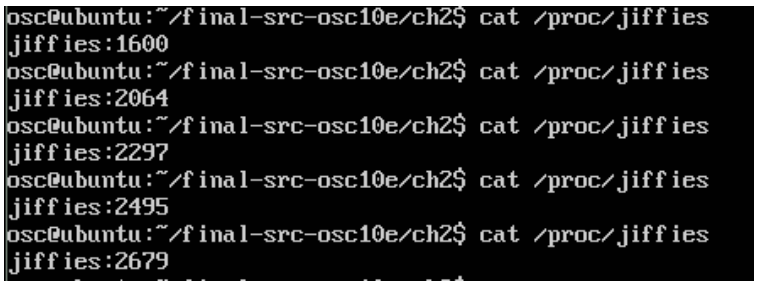

FIG. 3: The number of jiffies

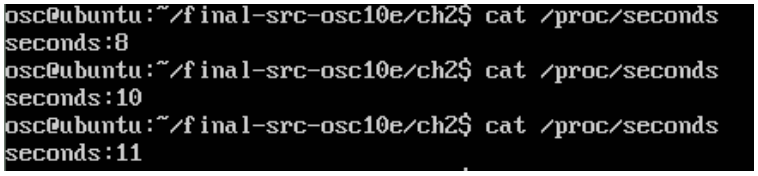

FIG. 4: The number of seconds

The code is shown in $jiffies.c$ and *seconds.c*.

C. Conclusion

In this project, we get an overview of how the linux modules work and have experimented on how the modules are loaded and deleted from the kernel. Also, we make use of some given files and gloabl variables to reach our goal.