**Part 1 Questions**

1. One error we ran into was our / lib / modules / $ ( shell uname -r )/ build M = $ ( PWD ) to load correctly. We fixed it by adding a missing letter in the Makeflie. There was also an error where init\_module and cleanup\_module was being defined twice when using make. We fixed this by changing the names of init\_module and cleanup\_module to load\_module and exit\_module.
2. A white background with black text

   Description automatically generated

A screenshot of a computer program

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A close up of a text

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A computer error message

Description automatically generated

1. I could use both the pr\_info and printk functions to achieve this since pr\_info prints to the console and printk prints to the kernel ring buffer.

**Part 2 Questions:**

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The process that is recognized as current is insmod.

1. I see systemd instead of init, the process ID, and the state of the process.
2. The two states that are observed are TASK\_RUNNING and TASK\_INTERRUPTIBLE.

**Part 4 Questions**

1. A system call is a request that a program puts out to the operating system for when user-level tasks need kernel-controlled resources or operations. There is a system call table that has the functions used to carry out system calls inside the kernel. A kernel module is used to load or unload different pieces of code at any time. They are used to add functionality to the kernel without rebooting the entire system. They can interact with the kernel’s structure, adding drivers and file systems or other small functionality into the kernel.
2. This code does not work anymore. When trying to make the file, a fatal error appears saying that sys/syscall.h could not be found. I think that this is a good thing. Since you can use a kernel module to add functionality to your code without rebooting it, there isn’t much need for a system call. Kernel calls are more convenient and practical.