Exercise 25.1: Kernel Modules

1. List all currently loaded kernel modules on your system.
2. Load a currently unloaded module on your system.

   If you are running a distribution kernel, this is easy to find; you can simply look in the /lib/modules/⟨kernel-version⟩/kernel/drivers/net directory and grab one. (Distribution kernels come with drivers for every device, filesystem, network protocol etc. that a system might need.) However, if you are running a custom kernel you may not have many unloaded modules compiled.

   A choice that will usually work is to pick either `e1000.ko` or `e1000e.ko`, as while these gigabit Ethernet drivers are quite common, it is very unlikely both would be loaded at once.
3. Re-list all loaded kernel modules and see if your module was indeed loaded.
4. Remove the loaded module from your system.
5. Re-list again and see if your module was properly removed.

Solution 25.1

1. `$ lsmod`

2. In the following, substitute whatever module name you used for `e1000e`. Either of these methods work but, of course, the second is easier.

```
$ sudo insmod /lib/modules/$(uname -r)/kernel/drivers/net/ethernet/intel/e1000e.ko
$ sudo /sbin/modprobe e1000e
```

3. `$ lsmod | grep e1000e`

4. Once again, either method works.

```
$ sudo rmmod e1000e
$ sudo modprobe -r e1000e
```

5. `$ lsmod | grep e1000e`