P0: My First Kernel Mod

Overview

You will modify the boot message of Reptilian. You will then take a screenshot of the terminal displaying the modified boot message with your name/UFID and a personal message visible and create a short video to demonstrate your code. You'll submit the project via Canvas.

Structure

The project is broken into four main parts:

1) Modify the kernel to print your name, UFID and a personal message while booting
2) Re-build the kernel
3) Take a screenshot displaying your name and UFID in the boot message
4) Create a unified patch file

Note: You must print "##### First Last Name (UFID: XXXX-XXXX) Personal Message #####) with one new line above and below, after the line "Booting the kernel." in the boot messages. The personal message can be anything you'd like. See example screenshots below for clarifications.

Optionally, students may also modify the GRUB menu to add '(First Last Name)' next to the default Reptilian 18.01-A7.1 option, see the *Example Screenshots* section below for an example of what the modified menu should look like (+4% of assignment's value) (*Note:* This does not have to be included in the patch, just take a screenshot and talk about what you did in the report and screencast).

Testing

You should test your code by starting your VM and make sure it displays your name & UFID while booting. You might want to record a video of the VM booting and then screenshot the video at the desired frame in case it loads too fast for you to see the message you added. You should also apply your patch file to a clean VM to make sure everything works.

Submissions

You will submit the following at the end of this project on Canvas (Do NOT zip files):

● Screenshot of modified boot message with name and UFID visible (and a screenshot of the GRUB menu if you are doing the extra credit)
● Screencast
● Report
● Unified Patch File

Report

Your report will explain how you modified the boot message, including what changes were made to which files and why each change was made. It will include description of how testing was performed. The report may be in Portable Document Format (pdf) or plain-text (txt). The report should be no more than half a page and should cover all relevant aspects of the project.

Screencast

In addition to the written text report, you should submit a screencast (with audio) walking through the changes you make to the operating system (~2 minutes).

Patch File

The patch file will include all changes to all files in a single patch. Applying the patches and remaking the necessary parts of Reptilian, then rebooting should modify the boot message as described above.

To create the patch file follow these commands:

```
$ cd /usr/rep/src/reptilian-kernel
$ git add -u
$ git add '*.c' '*.h' '*Makefile' '*.tbl'
$ git diff remotes/origin/os-2018-01 > p0.diff
```

We will test your project applying the patch and running these commands from the kernel source directory:

```
$ git apply p0.diff
$ make && sudo make install && sudo make modules_install
```

Example Screenshots

Below you can see an example of what acceptable screenshots look like for the project and the extra credit (You don't need to circle what you added):
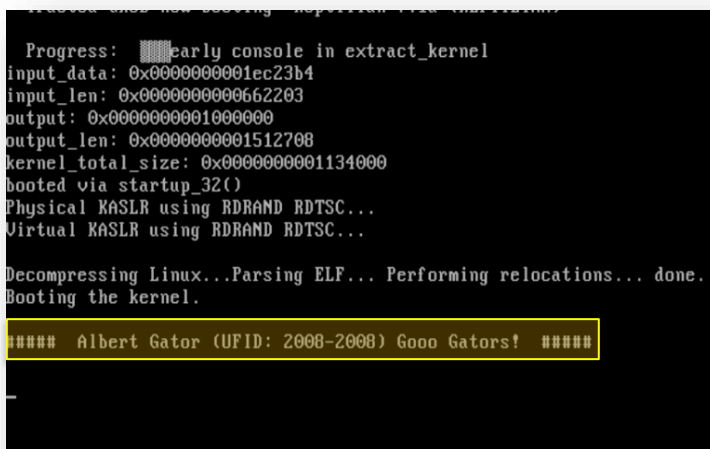
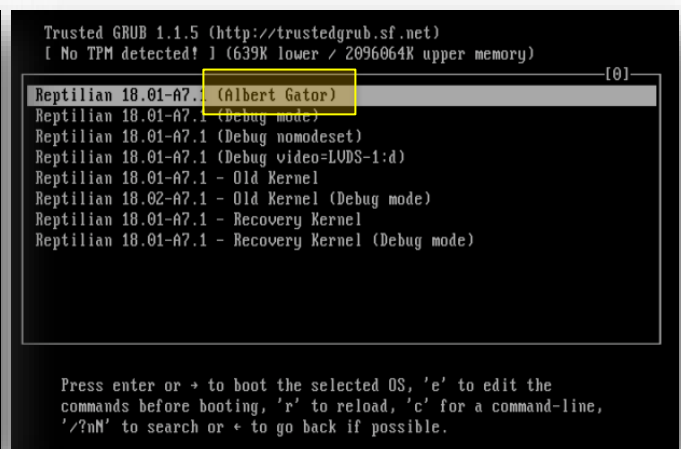

Figure 1. Modified Boot Message

Figure 2. Modified GRUB Menu (Extra Credit)