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CS 354
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Lab 0 Answers

3.1)

- In the start.S file, after the nulluser function returns, the program will end because halt is called. However, this will likely never happen since the nulluser function contains an infinite loop.
- Within the nulluser function (and in Xinu in general), the way in which new processes are created and run is very different than in Unix. Instead of forking the process and then using execvp() to change the process to a binary to be executed, Xinu accepts a function pointer as an argument for the function which the process will execute. Additionally, you pass the size of the process' stack (in bytes), the priority of the new process, and the string name of the process as arguments to the create() function. The final key difference between Linux and Xinu is that Xinu process which are made by create() do not automatically run but are placed in the waiting state. Processes in Xinu must be explicitly told to start by calling the resume() function on the process.
- The welcome boot message has been changed to display my username and student ID. All of the welcome source code has been moved into the nulluser() function.

3.2)

- After my username and student ID are printed, 2 additional processes are created. The first process (it should be PID=3) prints a message that adheres to the doge meme and the second process (PID=4) performs the requested multiplication.
- There were no direct questions asked in this problem. All of the requested code changes have been made and possess proper documentation (code comments).

Bonus Problem)

- I have added the new shell command named "poo". It works properly with the help function (i.e. the command is listed when "help" is entered and supports the "--help" flag). The command prints a graphical illustration of the Xinu operating system to the console using ASCII art.