

Lab 4 – Description of Program

Script 1

The script begins by printing the heading using the awk command. It then iterates through every numeric folder in the /proc directory and stores information on the pid, user, rss and cmdline into variables.

The pid value is retrieved from the name of the directory and the user is retrieved from the owner of the directory using the stat command. The rss value is obtained from the status file using the grep command and then piping the output to the sed command to remove extra information and whitespace. If no value is obtained, the rss value is set to zero.

The cmdline value is retrieved from the cmdline file using the cat command and then piping the output to the tr command to replace the null character (\0) with a space. If no value was obtained, the name of the process is set as cmdline. The contents of the pid, user, rss and cmdline variables are then outputted using the awk command.

Script 2

The script begins by iterating through all c files in the directory given by the first argument passed to the script (\$1). The fullpath to the file is then obtained using the readlink command. The file is then checked to see if it contains a main function, an init_module function or neither of these functions. For files containing a main function, the number of occurrences of printf and fprintf are found using the grep command. This information is then appended to a variable (main_files) along with the full path of the variable. For files containing an init_module function, the line numbers where printf occur are found using the grep command and then piping the output to the sed and tr commands to convert newlines into commas. This information is then appended to a variable (module_files) along with the full path of the variable. For other files, the full path to the file is appended to a variable (other_files).

After all files have been checked, the contents of the variables main_files, module_files and other_files are outputted if they are not empty. If they are empty, a message that that type of source file was not found is outputted.