Elikem Hermon | 20075527
Hermann Krohn | 20057435

Lab 4 – Description of Testing

Script 1

In order to determine the validity of the program, the ps command was used. This command lists running processes in the linux environment. The following arguments were passed alongside the ps command to format the output to show the process id (pid), user and resident pages (rss).

$$ps\ -eo\ pid, user, rss, args$$

Figure 1 (refer to Appendix) shows the expected output while Figure 2 (refer to Appendix) depicts the output of the program. These figures were obtained by using the script command. The output from the program matches the expected output with the exception of the running processes (bash script1.sh / ps). This is justified as the expected output runs the ps process while script1 runs the bash process. Therefore, the program works as expected.

Script 2

Script 2 was tested by verifying the output against the c files found in /E377-Wed-49/ as shown in Figure 3. As expected, the output displays the main files with their respective number of printf and fprintf occurrences. The values were verified by checking the files. Additionally, Figure 3 displays module files followed by the line numbers where printk occurs within them. The line numbers were verified by checking the files. Lastly, Figure 3 displays the other files with no main or init_module functions.

Figure 4 shows the output when the script was ran on a directory with no c files. As expected, no files were displayed when executed on the lab 4 directory.

Elikem Hermon | 20075527
Hermann Krohn | 20057435

Appendix

```
student@ELEC377-Student:~/E377-Wed-49/lab4$ ps -eo pid,user,rss,args
  PID USER      RSS COMMAND
    1 root      240 init [3]
    2 root        0 [keventd]
    3 root        0 [ksoftirqd_CPU0]
    4 root        0 [kswapd]
    5 root        0 [bdflush]
    6 root        0 [kupdated]
   10 root        0 [mdrecoveryd]
   11 root        0 [kjournald]
   59 root      592 /usr/sbin/syslogd
   62 root      448 /usr/sbin/klogd -c 3 -x
  167 root      512 /sbin/dhcpcd -d -t 10 eth0
 1545 root        0 [khubd]
 1568 root      520 /usr/sbin/inetd
 1575 root      564 /usr/sbin/crond -l10
 1578 root     2108 sendmail: accepting connections
 1581 smmsp    1944 sendmail: Queue runner@00:25:00 for /var/spool/clientmqueue
 1585 student  1560 -bash
 1586 root      468 /sbin/agetty 38400 tty2 linux
 1587 root      468 /sbin/agetty 38400 tty3 linux
 1588 root      468 /sbin/agetty 38400 tty4 linux
 1589 root      468 /sbin/agetty 38400 tty5 linux
 1590 root      468 /sbin/agetty 38400 tty6 linux
 1606 student  1044 ssh-agent
11421 student   552 script lab4_part1_out.txt
11422 student   592 script lab4_part1_out.txt
11423 student  1448 bash -i
11446 student   768 ps -eo pid,user,rss,args
```

Figure 1 - Expected output from the ps command for script1

```
student@ELEC377-Student:~/E377-Wed-49/lab4$ bash script1.sh
PID       USER      RSS       COMMAND
1         root      240       init [3]
2         root      0         [keventd]
3         root      0         [ksoftirqd_CPU0]
4         root      0         [kswapd]
5         root      0         [bdflush]
6         root      0         [kupdated]
10        root      0         [mdrecoveryd]
11        root      0         [kjournald]
59        root      592       /usr/sbin/syslogd
62        root      448       /usr/sbin/klogd -c 3 -x
167       root      512       /sbin/dhcpcd -d -t 10 eth0
1545      root      0         [khubd]
1568      root      520       /usr/sbin/inetd
1575      root      564       /usr/sbin/crond -l10
1578      root      2108      sendmail: accepting connections
1581      smmsp     1944      sendmail: Queue runner@00:25:00 for /var/spool/clientmqueue
1585      student   1560      -bash
1586      root      468       /sbin/agetty 38400 tty2 linux
1587      root      468       /sbin/agetty 38400 tty3 linux
1588      root      468       /sbin/agetty 38400 tty4 linux
1589      root      468       /sbin/agetty 38400 tty5 linux
1590      root      468       /sbin/agetty 38400 tty6 linux
1606      student   1044      ssh-agent
11421     student   552       script lab4_part1_out.txt
11422     student   592       script lab4_part1_out.txt
11423     student   1448      bash -i
11447     student   1196      bash script1.sh
```

Figure 2 - Output from script1

```
Main Files:
/home/student/E377-Wed-49/lab0/lab0user.c: 1,1
/home/student/E377-Wed-49/lab1/lab1.c: 5,0
/home/student/E377-Wed-49/lab3/consumer.c: 2,2
/home/student/E377-Wed-49/lab3/meminit.c: 3,0
/home/student/E377-Wed-49/lab3/producer.c: 2,2
/home/student/E377-Wed-49/lab5/client.c: 0,8
/home/student/E377-Wed-49/lab5/selfcomp.c: 0,0

Module Files:
/home/student/E377-Wed-49/lab0/lab0mod.c: 60,63,83
/home/student/E377-Wed-49/lab2/lab2.c:
/home/student/E377-Wed-49/lab2a/lab2.c:

Other Files:
/home/student/E377-Wed-49/lab3/common.c
```

Figure 3 - Output from script 2 (1)

```
No main file
No module file
No other file
```

Figure 4 - Output from script 2 (2)