ComS 252 Homework 4: Processes

Individual assignment

Due September 28, 2021

1 Objectives

For this assignment, you will manage processes. You should be comfortable with the notion of a process, and familiar with utilities for managing processes and services. You will run several "custom" programs for this assigmnent; most should be executed as `user`. Upon successful completion of each task, you will generate a task file (in `user`'s home directory), which contains your ISU username and hash code. These files should look something like this:

```
Username: asminer
Hashcode: _Task_07_L8oZbCRQAro
```

You will not receive points for your submission if your username or the generated code is incorrect.

2 Download

Download the virtual machine `Hw04.ova`. The accounts `root` and `user` have passwords `rootpw` and `userpw`, as usual. Unless otherwise specified, all activities below should be done in the `user` account.

3 Task 1: Pipes

Read the `man` pages for custom programs `abc2code`, `name2ud`, and `ud2abc`. Use these programs together, with pipes and redirection, to generate a code from your username, and save it to file `task1.txt` in `user`'s home directory.

4 Task 2: Job control in the shell

Run program `task2` and follow the instructions. You will need to switch jobs between foreground and background mode. This can be done in a single shell.

5 Tasks 3 and 4: Signals

For tasks 3 and 4, you will need to login to two different text consoles to obtain two shells, so you can send various signals to a running process. Use CTRL+ALT+Fn to switch to text console number n. On some systems (notably, Macs) you also need to press "fn". CTRL+left/right arrow or ALT+left/right arrow is another option on some systems.

Run `task3` and follow the instructions. Then run `task4` and follow the instructions.

6 Task 5: Daemons and services

There is a custom service, named `t5.service`, on this virtual machine. Start the service (as `root`) and verify that it is running, using the command–line tools for managing services. Once the service is running, run the client program `task5`; this does not need to be run as `root`.

7 Submitting your work

Login as `root`, and run `Turnin yourISUusername` to automatically submit your work. Check the `man` page for `Turnin` for more information.