

ShellSlayer Fall 2024 Workshop

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*Last Updated:
Tue Oct 29 04:47:50 PM EDT 2024*

Preamble

Visit: <https://go.umd.edu/shellslayer>

- ▶ Includes link to github page for ShellSlayer
- ▶ Has a Feedback Form to fill in at the end of this session

Welcome Slayers

Immediate Goals

- ▶ Illustrate Docker as a way to get a shell environment / run programs
- ▶ Learn a some useful Unix commands and shell tricks that may improve your life on the command line
- ▶ Have some fun and eat some candy

Long Term Goals

- ▶ Consider contributing to the tutorial via playtesting, writing levels, etc.
- ▶ Add some levels on some topics not covered

Thank yous

- ▶ ACM leaders who invited me to join you (Mihir and Ishan)
- ▶ ACM playtesters and facilitators

Docker Setup

If you've not installed Docker already, search the internet for **“Install Docker”** and follow the instructions



- ▶ Docker is a system by which “containers” can be set up to run programs
- ▶ Containers provide a skeleton operating system along with libraries/utilities so that programs can run reliably
- ▶ Similar in spirit to Virtual Machines or Emulation BUT has some technical distinctions which you can read about on your own time
- ▶ Docker allows for download/run of containers with programs in them via a GUI (blegh) or command line (yay!)

Running Shell Slayer

Start the “Docker Desktop” application (via clicking things) then use a command shell to download / run the shellslayer image via:

Windows: `cmd.exe`

```
>> docker run -it --rm kauffman77/shellslayer
```

MacOS: `Terminal.app`

```
>> docker run -it --rm --platform=linux/amd64 kauffman77/shellslayer
```

Linux: `Terminal Emulator of Choice`

```
>> sudo docker run -it --rm kauffman77/shellslayer
```

sudo may not be necessary depending on your system config

Structure of the Exercise

- daemon (noun)
1. Archaic spelling of demon
 2. In multitasking computer operating systems, a program that runs as a background process rather than being under the direct control of an interactive user.

You sense a foul presence in the process tree...

- ▶ A “Daemon” process is present in the system and must be killed.
- ▶ To do so, you must switch to be the Root user (administrator)
- ▶ Becoming root requires a password
- ▶ Each level (level_00_less, level_02_editing, ...) teaches about a Unix tool/technique and when completed properly will reveal part of the root password (one of the Daemon’s names)
- ▶ Complete all levels to obtain, get the whole password, and slay the Daemon

Workshop Plan

Level	Name	Overview
level_00_less	1	Viewing text files with <code>cat</code> / <code>less</code>
level_02_editing	2	Editing text files with <code>vi</code> / <code>nano</code>
level_05_grep	3	Searching for text with <code>grep</code>
level_10_sh_loops	4	Looping over files in the shell
level_15_find	5	Locating files with <code>find</code>
level_20_sed	6	Substituting text in files with <code>sed</code>
level_99_su_kill	-	Changing to “root” and killing processes

For each level...

- ▶ Give a short overview
- ▶ Give participants a few minutes to try the commands and solve the exercise
- ▶ Regroup to discuss the stage solution and fill in a Daemon name

Thank You for Your Participation

Participant Feedback at <https://go.umd.edu/shellslayer>

- ▶ If you enjoyed the workshop and have feedback, provide it in the survey
- ▶ If you are interested in contributing to the tutorial, email me

`<profk@umd.edu>`



*The world doesn't need a hero.
It needs a professional.*