

Homework 1: The Linux Operating System

CSE 101

1 Introduction

This homework focuses on the Linux Operating System. This homework will teach you several linux commands, and show you how to create and edit files in the Linux environment.

You should review the `linux.pdf` handout on Canvas, for information on Linux commands and how to get started using Linux. You will use many of the commands covered in the “Important Linux Commands” section of the handout for this homework.

2 Homework Specifications

The following subsections describe what you will write and submit for this homework. You will need to submit scripts of the commandline for this homework, meaning you should practice the commands first before recording the scripts. Perform all tasks with the original `hw1.tar.gz` files, or your grade could be affected.

Check that you have met all of the requirements for this homework before you submit it for grading, as the homework will be counted as late if you submit or resubmit it after the due date.

These tasks focus on how to create, edit, and destroy files, and navigate the filesystem using the commandline. You will first need to extract the `hw1.tar.gz` archive file into a directory. For a reference on how to extract tarballs, see Section 2.16 of the `linux.pdf` handout. Once you have extracted these files, practice the following tasks until you can perform them with little difficulty. You will submit a **script** for each subsection (2 in total). For a reference on how to create a script, see Section 2.14 of the `linux.pdf` handout.

2.1 Manipulating Files

Commands used in this section:

- `cd`
- `touch`
- `gedit`
- `rm`
- `ls`
- `rmdir`

Record a script showing each of these tasks consecutively, called `manipulation.script`. If you get stuck, read the manpages for the above commands and see which one fits best what you are trying to accomplish. You may also lookup a command online to see examples of how it is used (however first use the manpage, as it is the official documentation for the command and thus is usually more straight-forward!). For more information, see Section 2.1 of the `linux.pdf` handout.

Tasks for this subsection:

1. Change directories into `manipulating_files`.
2. Create a file called `touched.txt`.
3. Open `touched.txt` in Gedit; add some text and then save and close Gedit.
4. Have the terminal print out the contents of `touched.txt`.
5. Remove `touched.txt`.
6. Have the terminal list the contents of `empty_directory`.
7. Remove `empty_directory`.
8. Have the terminal list the contents of `full_directory`.
9. Remove `full_directory` (hint: use the manpage for `rm` to see how to remove files recursively).
10. Have the terminal list the contents of your current working directory to show that all files have been removed.
11. Exit the script.

2.2 Filesystem Navigation

Commands used in this section:

- `cd`
- `pwd`
- `ls`
- `cat`
- `cp`
- `mv`

Record a script showing each of these tasks consecutively, called `navigation.script`. If you get stuck, read the manpages for the above commands and see which one fits best what you are trying to accomplish. You may also lookup a command online to see examples of how it is used (however first use the manpage, as it is the official documentation for the command and thus is usually more straight-forward!). For more information, see Section 2.1 of the `linux.pdf` handout.

Tasks for this subsection:

1. Change directories into `filesystem_navigation`.
2. Have the terminal list the contents of your current working directory.
3. Have the terminal print out the contents of the `found_treasure` from your current working directory.

4. Find where the file `hidden_treasure` is located in the `maze` directory (hint: use the manpage for `ls` to see how to display results recursively, then find and copy the path to the file).
5. Copy the `hidden_treasure` file into your current working directory as `found_treasure` (copy, don't move!)
6. Have the terminal print out the updated contents of `found_treasure`.
7. Move `found_treasure` into the `bank` directory (move, don't copy!)
8. Exit the script.

3 Submission Guidelines

For Homework 1, you must turn in the following files:

- `manipulation.script`
- `navigation.script`

Submit your files as a tarball to Canvas before the due date. The name of your tarball should retain the following format: `<firstname>_<lastname>_cse101_hw1.tar.gz`. Please do not use any capital letters in your filenames.

An example of the command you should run on your system is produced below:

```
tar czvf cse101_jane_doe_cse101_hw1.tar.gz manipulation.script navigation.script
```