Cs 340
Lecturer: Dr. Simina Fluture

Homework # 2 Unix

Go over the homework requirements. In a separate file (use a text editor) cut and paste the commands that you typed (including the prompt) and the complete or partial output of these commands. The output of the commands shouldn't contain more than 6 lines.

Standard Directories and Files
Directory: contains the names of files and/or sub-directories. Standard directories contain some special files.

Root Directory (/)
The root directory is the top of the file system. It is the master cabinet that contains all folders and files.

1. **Get a listing of your root directory.** (use, cd and ls –l)

`/bin`
The binary directory: contains executable files and most Unix commands.

2. **Go to /bin directory.** (use cd /bin)
3. **List its contents.**
4. **List 6 commands that you recognize.**

`/dev`
Device directory.

5. **Get a listing of the device directory. Do you recognize any device?**

`/etc`
Contains commands and files for system administration. Usually a user is not allowed to change these files.

6. **Go to /etc directory.**
7. **Do a long listing; Mention a few files that you have already heard about.**
8. **What is the most used permission? What does it mean?**
9. **Using the cat command, take a look at the profile and login.defs files.**
10. **Using cat, check the passwd file or similar; look for yourself in the file.**

`/lib`
Contains a collection of related files for a given language in a single file called an **archive**.

`/tmp`
Contains temporary files.

`/etc/passwd`
Contains one line for every user on the system and describes that user.

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Determine the absolute pathname for your home directory

11. **Type:**

```
echo $HOME
```

12. **Type:**

```
pwd
```

C. Shell(s) and Shell Environment variables

1. **Check your default shell using: `echo $SHELL`**
2. **Use the `chsh` command and find a list of available shells.**
3. **Change the current shell to a `tcsh` .**
4. **Check your new shell. The change will not be listed until the next login.**
5. **Type ps (process status – gives a lists of running processes). What do you observe?**

Shell Environment variables

Bourne, Korn shell	**C shell**	
CDPATH	**cdpath**	alias names for directories accessed with cd
ENV		path along which Unix looks to find config. files
PS1	**prompt**	shell prompt that appears in the command line
PWD	**cwd**	name of current directory
HOME	**home**	the name of the user's home directory when the user first logs in
TERM		type of console terminal being used

6. **At the shell prompt, type `set | more` and then press <enter>. What is displayed on your screen?**
7. **Identify and list the settings for the variables shown above.**
8. **Use the `man` command and read about the `setenv` command.**
9. **At the shell prompt, type `csh` and then press enter. Next, type `setenv | more` and then press enter. Identify and list the settings for all environment variables.**

D. Processes

Check the Unix Handout and go over the section about **Processes -section 17**.

The action of each shell, the mechanism of how it executes commands and programs, how it handles the command and program I/O and how it is programmed, are affected by the settings of certain environment variables.

1. **Learn about the `ps` command using man.**
2. **Give a list of possible states together with their significance. Identify your login shell.**
3. **Type `ps –l` and explain the significance of:**
   F, S, UID, PID, PPID, C, PRI, NI, ADDR, SZ, WCHAN, TTY, TIME, CMD fields.

4. **Use the `top` command to monitor the CPU activity in real time. It displays the status of the first 15 of the most CPU-intensive task on the system as well as the CPU activity. To stop the execution of top enter <ctrl-C>.**

5. **Give the total number of tasks, number of running processes, sleeping processes, stopped processes and zombies.**