COMP 311: Project #2

Due on December 8, 2020 at 11:59 PM (Before Midnight)

Question 1

Write the proper Linux command(s) to perform each of the following tasks. For each task record the task number and the corresponding answer (i.e., commands) in a file named (`q1_answers`).

(Task1) Use `find` command to compile a list of *all* directories in your system (under `root '/'` directory). The command must redirect the output so that the list of directories ends up in a file called `directories.txt` and the list of error messages in a file called `errors.txt`.

(Task2) Try the command `sleep 5`. What does the command do?

(Task3) Run the command `sleep 5` in *background* using `&`.

(Task4) Run the command `sleep 80` in *foreground*, then *suspend* it with `CTRL+z`, then put it into the background using `bg`. Next, run the command `jobs`, then the command `ps`. Finally, bring the job back into the *foreground* with `fg`.

(Task5) Run the command `sleep 30` in *background* using `&`, then use `kill` command to terminate the process by *its job number*. Repeat this task but this time *kill the process by specifying its PID*.

(Task6) Run the command `sleep 40` in *background* using `&`, then use `kill` command to *suspend (stop)* the process. Finally, use the `bg` command to resume running the process.

(Task7) Start a number of `sleep 60` processes in *background*, then terminate them all at the same time using the `pkill` command.

(Task8) Create a variable called `myprj2var` in your current bash shell with value `good`, then make sure that the variable `myprj2var` is passed from bash to ksh when you run a `ksh` shell under your bash shell.

(Task9) Add directory `/etc` to the beginning and end of you current `PATH` environment variable.

(Task10) Give a usage example for each of the commands: `nice` and `exec`.

Question 2

Refer to the given file `prj2_passwd` and write the proper single Linux command to perform each of the following tasks. For each task record the task number and the corresponding answer in a file named (`q2_answers`). *Note that tasks 9 and 10 are **optional**, answering them will reward you an extra credit.*

(Task1) Display the *login names* (e.g., `u1183456`) of all users whose **first name** is `Mohammad` (**all cases**).

(Task2) Display the *first names* of all users with `comp322` as part of their home directory **sorted by the numerical value** of their **user id numbers**.

(Task3) Select all the users with **first name** `Mohammad` (**all cases**) and *change* their first names to `Mahmoud` and save their entries (lines) to a file called `Mahmoud_passwd`.

(Task4) List the full names (i.e., first name and last name separated by a space) of the three users before the last two users in the file.

(Task5) Using `sort` command, remove all duplicate lines from the file `prj2_passwd` and save the result to a file called `cleanprj2_passwd`.

(Task6) List the last names (all in capital letter) sorted in descending order of all users with login names that do **NOT** start with `u116`.

(Task7) List the number of users that have a login name that starts with `u116`.

(Task8) Change the shell of all users with `ksh` as their shell to `bash` and save their entries (lines) to a file called `oldkshusers`.

(Task9) (*Optional*) List the *last names* of all users with **login names** that **start with** `u116` and **end with** a digit from 1 to 4.

(Task10) (*Optional*) List the *initials* (i.e., the first letter of the first name followed by the first letter of the last name) of all users that have `ksh` as their default shell.

Submission

To successfully submit your solution to this project and be considered for grading, you **MUST** upload **three artifacts** as a reply to the designated Ritaj message before the deadline:

1. A script log named `project2_[university_id].log` containing the steps you followed to do the required tasks. Similar to what you do in regular lab tasks.
2. Two files `q1_answers` and `q2_answers`.

Important Notes

1. You should do all the work above completely on your own. Working with anybody else on any part of this project will result in a zero grade.
2. No projects will be accepted after the specified deadline for any reason.
3. Projects that do not have the corresponding log file turned in will NOT be graded.