**CSc 3320: Systems Programming**

Spring 2021

Homework

# 3: Total points 100

Submission instructions:

1. Create a Google doc for each homework assignment submission.
2. Start your responses from page 2 of the document and copy these instructions on page 1.
3. Fill in your name, campus ID and panther # in the fields provided. If this information is missing in your document TWO POINTS WILL BE DEDUCTED per submission.
4. Keep this page 1 intact on all your submissions. If this *submissions instructions* page is missing in your submission TWO POINTS WILL BE DEDUCTED per submission.
5. Each homework will typically have 2-3 PARTS, where each PART focuses on specific topic(s).
6. Start your responses to each PART on a new page.
7. If you are being asked to write code copy the code into a separate txt file and submit that as well.
8. If you are being asked to test code or run specific commands or scripts, provide the evidence of your outputs through a screenshot and copy the same into the document.
9. Upon completion, download a .PDF version of the document and submit the same.

Full Name: Tracy Michaels

Campus ID: tmichaels1

Panther #: 002430918

**10 pts for the neatness factor of your presentation.**

**PART 1: 30pts**

1. For each command tryout at least one example provided in **Chapter 3** of the Unix textbook. Feel free to use your own example. Show the screenshot for each command’s output. Present your output in a tabular form with column 1 as index (1,2,3..), second column as the command, third as the usage, fourth as the screenshot of the output. You can just show a small snapshot for the output -- we do not need the entire screen’s image.

**Part II : 30pts**

1. For each command tryout at least one example provided in **Chapter 4** of the Unix textbook. Feel free to use your own example. Show the screenshot for each command’s output. Present your output in a tabular form with column 1 as index (1,2,3..), second column as the command, third as the usage, fourth as the screenshot of the output. You can just show a small snapshot for the output -- we do not need the entire screen’s image.

**Part III : 30pts**

1. For each command tryout at least one example provided in **Chapter 5** of the Unix textbook. Feel free to use your own example. Show the screenshot for each command’s output. Present your output in a tabular form with column 1 as index (1,2,3..), second column as the command, third as the usage, fourth as the screenshot of the output. You can just show a small snapshot for the output -- we do not need the entire screen’s image.

**PART 1: 30pts**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Utility | Usage | Screenshot |
|  | at | Schedule a one time commands or script |  |
|  | awk | Text processing that scans lines of an inputs and performs actions on every matching like based on defined criteria |  |
|  | biff | Enable and disable instant mail notifications (not installed) |  |
|  | cmp | Compares two files for equality, if they’re exactly the same it returns 0 and displays nothing and if they’re different returns 1 and displays first occurrence of deviation |  |
|  | compress | Replaces file with a compressed version and appends a .Z to the end of the file name (I can read the man page for this utility but when I try to use it I get a command not found error |  |
|  | cpio | Allows you to create archive files from files or directories in a single backup volume; useful for small quantities of data |  |
|  | crontab | Creates a schedule for which a series of jobs are to be executed periodically |  |
|  | crypt | Creates a key-encoded version of a text file (command cannot be found though I had no trouble reading the man page for it) |  |
|  | diff | Compares two files and displays the differences between them |  |
|  | dump | Creates a dumpFile from a specified file system as a way to perform a for of back up (dump doesn’t seem to be installed on the server and since I do not have sudo privileges I am unable to install it) |  |
|  | egrep | Search for a pattern using extended regular expressions |  |
|  | fgrep | Search for a pattern using a fixed string |  |
|  | find | Recursively searches through file path to find files that match a pattern for either the name, permission flags, file type, …etc depending on options passed |  |
|  | grep | Search for a pattern using basic regex |  |
|  | gunzip | Uncompresses a file that was created with either gzip or compress utilities |  |
|  | gzip | Replaces file with its compressed version and appends a .gz to the end of the filename |  |
|  | ln | Creates hard and symbolic links between files |  |
|  | mount | Allows you to mount a file system.  Passing no arguments displays list of currently mounted devices. |  |
|  | od | Stands for Octal Dump, allows you to look at the raw file contents |  |
|  | perl | Stands for Practical Extraction Report Language. Originally used for scanning files and extracting information, but has grown into a general-purpose programming language |  |
|  | restore | Restore a set of files from a previous dump file. (as I was unable to create a dump file I am unable to use this utility as well) |  |
|  | sed | This utility is a stream editor which scans one or more files and performs an editing action on all of the lines that match a regex pattern |  |
|  | sort | Sorts lines in input in ascending or descending order based on options passed to it |  |
|  | su | Stands for substitute user. Allows you to run commands with a substitute user and group id, with no arguments it defaults to root |  |
|  | tar | Creates and accesses tar archive files |  |
|  | time | Reports the execution time of any command |  |
|  | tr | Maps the character set of the input to that of the output |  |
|  | tty | Itentifies the name of your teminal and displays pathname |  |
|  | ul | Removes underlining from characters so it displays properly in the terminal |  |
|  | umount | Unmounts a previously mounted file system (unable to perform because of permissions) |  |
|  | uncompress | Uncompress files compressed using the compress command (wasn’t able to use the compress command) |  |
|  | uniq | Displays contents of file with all repeated lines collapsed into one line |  |
|  | whoami | Displays users name |  |

**Part II : 30pts**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Utility | Usage | Screenshot |
|  | chsh | Allows you to change the default login shell |  |
|  | echo | Displays arguments of this utility to the standard output |  |
|  | kill | Terminates a process |  |
|  | nohup | Makes commands immune to hangup and terminate signals |  |
|  | ps | Lists process status information within current shell |  |
|  | sleep | Causes shell to sleep for a specified number of seconds |  |
| 1. t | tee | Copes its standard input to the specified files and to its standard output |  |

**Part III : 30pts**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Utility | Usage | Screenshot |
|  | env | Assigns values to specified environment variables |  |
|  | expr | Evaluates an expression and sends the result to the standard output |  |
|  | test | Returns a 0 exit code if expression evaluates to true and a nonzero exit status if it evaluates to false |  |