**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: Adam Nguyen

Campus ID: anguyen117

Panther #: 900911012

**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 1:

|  |  |  |  |
| --- | --- | --- | --- |
| Index | command | usage | screenshot of the output. |
| 1 | at | Executes commands at a specific time. |  |
| 2 | awk | Scripting language used for manipulating data and generating reports.  Awk is mostly used for pattern scanning and processing. |  |
| 3 | biff | No manual entry for biff.  The biff command informs the system whether you want to be notified when mail arrives. |  |
| 4 | cmp | Compares two files byte by byte |  |
| 5 | compress | Attempts to reduce the size of the named files (compress data) |  |
| 6 | cpio | Copy files to and from archives.  “copy in, copy out” |  |
| 7 | cron | background process to execute scheduled commands |  |
| 8 | crontab | Maintains crontab files for individual users |  |

|  |  |  |  |
| --- | --- | --- | --- |
| 9 | crypt | Password and data encryption function |  |
| 10 | diff | Compare files line by line |  |
| 11 | dump | No manual entry for the dump command.  backup the filesystem to some storage device |  |
| 12 | egrep | Print lines matching a pattern using extended expressions |  |
| 13 | fgrep | Print lines matching a pattern using fixed string. |  |
| 14 | find | Search for files in a directory hierarchy |  |
| 15 | grep | Prints matching lines after searching the named input files for lines containing a match to the given pattern. |  |
| 16 | gunzip | Restores compressed files to their original form |  |
| 17 | gzip | Attempts to compress regular files and ignores symbolic links |  |
| 18 | ln | Makes links between files |  |
| 19 | mount | Attach the file system found on some device to the big file tree |  |
| 20 | od | Dump files in octal and other formats |  |
| 21 | perl | Practical Extraction and Report Language. General purpose programming that originally scans for scanning arbitrary text files, extracting information, and printing reports. |  |
| 22 | sed | Stream editor for filtering and transforming text |  |
| 23 | sort | Places in order lines of text files to standard output | It seems that empty lines go first. |
| 24 | su | Runs commands with substitute user and group ID |  |
| 25 | tar | Saves many files together into a single tape or disk archive, and can restore individual files from the archive. |  |
| 26 | time | When command finishes, time writes a message to standard error giving timing statistics about this program run (time a simple command or give resource usage) |  |
| 27 | tr | Translate or delete characters. Translate, squeeze, and/or delete characters from standard input, writing to standard output. |  |
| 28 | ul | Do underlining.  Reads the named files or standard input and translates occurrences of underscores to the sequence which indicates underlining for the terminal in use, as specified by the environment variable TERM. |  |

|  |  |  |  |
| --- | --- | --- | --- |
| 29 | umount | Detaches the file system(s) mentioned from the file hierarchy. |  |
| 30 | uncompress | Restores files to their original state after they have been compressed using the compress utility. |  |
| 31 | uniq | Reports or omit repeated lines.  Filter adjacent matching lines from input and writing to output. | (Gotten rid of duplicate of last entry) |
| 32 | whoami | Print effective user-id.  Print the user name associated with the current effective user ID. Same as id -un |  |

**Part II : 30pts**

2. 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 2:

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | chsh | Changes your login shell. Prompts for a shell. |  |
| 2 | echo | Displays a line of text. Echo the string(s) to standard output. |  |
| 3 | kill | Terminate a process.  Kills processes which do not catch the specified signal |  |
| 4 | nohup | Runs a command immune to hangups, with output to a non-tty. |  |
| 5 | ps | Reports a snapshot of the current processes.  Displays information about a selection of the active processes. |  |
| 6 | sleep | Delay for a specified amount of line. Pauses for NUMBER seconds, minutes, hours, or days. | It pauses for 5 seconds then |

**Part III : 30pts**

3. 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.

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | expr | Evaluate expressions.  Print the value of Expression to standard output. |  |
| 2 | test | Check file types and compare values.  Exit with the status determined by expression. |  |