

CS 213: System Software Lab
Autumn 2024, IIT Dharwad
Assignment-1
Linux and Bash

1. Write a script to sort the file "/etc/passwd" in ascending order, utilizing the numeric values within the third column for the sorting process. **[1 Mark]**

2. Write a script to extract the login shell and username from the file /etc/passwd **[1 Mark]**

3. Write a script that sorts the list of the files in the current directory according to their file size. **[1 Mark]**

4. Write the scripts to implement the following operations: **[7 Marks]**
 - a. Capture details of all active processes and save them in a file named "result.txt" [Use the ps command for reference].
 - b. Display all lines that do not include the term 'usr'.
 - c. Count the total occurrences of lines containing 'usr'.
 - d. Display all lines which contain 'usr' along with the line numbers.
 - e. Display lines that do not contain 'usr', but only the top 2 lines.
 - f. Display the lines checking for the whole word 'lib'.
 - g. Display the search string 'lib' in a different color from the rest of the text.

5. Write a script which counts the number of files of "*.txt" type in the current directory. **[2 Marks]**

6. Write a script to perform the following operations:
 - a. Display the last five lines from three different files. **[1 Mark]**
 - b. Display the lines from third to fifth lines from the file /etc/group. **[2 Mark]**
 - c. Display the lines from 4th to 8th after sorting the file /etc/group. **[2 Marks]**
 - d. Display the lines from 2nd to 4th line in the current directory that starts with name 'script'. **[2 Marks]**

7. Write a script to perform the following operations from the file `test.txt`:
 - a. Display the list of surnames in reverse sequence from the above file. **[2 Marks]**
 - b. Display the last five surnames in reverse sequence from the above file and store it in another file. **[3 Marks]**

Instructions:

- Posted on: 19/08/2024
- Due date: 25th August 2024 (11:59 PM)
- Suggested Input files (.txt) are available in the drive folder and in the moodle.
- The mode of submission is Moodle. Any other kind of submissions are not accepted.
- Save all the scripts as:
 - script1.sh,
 - script2.sh
 - script3_a.sh, script3_b.sh, script3_c.sh
 - script4.sh
 - script5.sh
 - script6_a.sh, script6_b.sh, script6_c.sh.....
 - script7_a.sh, script7_b.sh
- Please zip all your script files, and submit a single file named "<roll-no>.zip", where <roll-no> should be replaced with your IIT Dharwad roll number.
- If you have violated the naming convention then you will be awarded a **10%** penalty of your secured marks.
- There will be a 100% penalty for plagiarism.
- Introducing irrelevant code is considered as malpractice.
- Late submission files are not considered for evaluation.