Development Operations
Assignment # 1

REG#: _____   NAME: _____

COURSE CODE: CS423   INSTRUCTOR: MUHAMMAD SAJID ALI

TOTAL MARKS: 68

Instructions

- Write the bash script for each of the following tasks. Your script file name should be the concatenation of your registration number and the task# (i.e., u2019123_task1). You must include comments to help readers understand your script.

Task 1: Working with files and directories.   **(20 marks)**

1. Change your working directory to root directory
2. Display the current working directory
3. Ask user to enter the prefix of new directory to be created and store the input in variable named 'prefix'
4. Create an empty file named 'empty' prefixed with text entered by the user.
5. Create a directory in your home directory named 'task1' suffix by your registration no and prefixed by the user input and underscore '_'
6. List everything sorted by latest time in root directory except . & .. to a file named 'root_directory_details.txt' under newly created directory in your home directory. This list must include following details.
   A. Permissions of an item
   B. File type (i.e. regular file or directory)
   C. Ownership only
   D. Last modification date
   E. Size in Kbs
   F. Filename
7. Rename newly created empty file to <your_name_reg_no>_emp.php
8. Copy this file to your home directory
9. Write the following code to this renamed file using *cat* command and *heredoc*
   ```
   <?php
      echo 'Hello : <your name>';
      echo 'php version: ' . phpversion();
   ?>
   ```
10. Display everything written in file <your_name_reg_no>_emp.php
11. Find if your created script includes *heredoc* using *grep* command (look for <<)
12. Print the number of lines in your script

Task 2: Updating and installing packages   **(16 marks)**
1. Get the latest package information
2. Print the version of *nano*
3. Upgrade *nano*
4. Install apache2
5. Check the status of apache2 service
6. Install mysql and php
7. Display the installed versions of mysql and php
8. Display the DocumentRoot path of the apache2

9. Copy the file named '<your_name_reg_no>_emp.php' from Task 1 to the DocumentRoot path of the apache2.
10. Open this file in your browser using route → http://localhost/ '<your_name_reg_no>_emp.php'

Task 3: Monitoring performance and status   **(14 marks)**
1. List selection of or all running processes and their PIDs
2. Sleep for 10 s and run this sleep process in background
3. List the background processes
4. List the active processes and their resource usage
5. List mounted file systems and their usage in human readable form. This should also include total available space
6. List mounted file systems and their usage to file named '<your_reg_number>_mfsu.txt'. This should include the following details only. [Hint, try to make use of *awk* utility]
   a. File system name
   b. Total size
   c. Total usage in %
7. Display the free memory

Task 4: Compression and archiving   **(8 marks)**
1. Archive a set of files only in your home directory. You may create some directories or empty files if needed.
2. Compress a set of files & folders and name it <your_reg_number>.zip
3. Extract files from a compressed zip archive

Task 5: Push your scripts to a repository   **(10 marks)**
1. Create directory named 'Assignmen1'
2. Copy all assignment scripts to 'Assignment1' folder
3. Initialize your git repository
4. Stage and commit the scripts
5. Ask user to enter the remote repository URL
6. Push the scripts to the repository

Submission
1. Archive all scripts under name assignment1_<your_reg_number>.zip
2. Upload the zip file on teams