

Assignment 3: Bash Scripting

IT Workshop - 1

- Deadline for submission is: 9:00PM, 23 October 2017
- Submission of this assignment will be via a Git repository on **GitLab**. GitLab is similar to GitHub, except it allows you to create private repositories.
- Submission details:
 - Create an account on **gitlab.com** if you don't already have one.
 - Create a **private** repository on gitlab, so that other's can't see your code, with the name "**Assignment3-ITWS**".
 - Give the TA user **itws.ta** "**master**" access to this repository.
How to: (<https://stackoverflow.com/questions/31908222/giving-access-to-private-gitlab-repository>)
 - In your repository, there should be at most 15 files:
 - Each question should have a script file with name format: q<n>.sh
"q1.sh" for question 1, for example.
 - There may also be a readme file in your repository, with any additional information.
 - Do not add any other files or directories in the repository.
- To be done in Bash. Attempt to do these in any other language other than Bash/C will get you Bonus marks.
- Make sure to give the **TA user account access to your repository**. Otherwise, we will not be able to access it and evaluate your work, leading to a 0 in this assignment for you.

Plagiarism will earn you a straight ZERO in this assignment. Automatic plagiarism detection scripts will be run on all your submissions.

1. Given a scrambled word, check if it exists as an executable command. If yes, print the allowed arguments of the command
2. List the commands that have been used on your terminal in the descending order of usage. The result should contain command name and the count
3. Have a crontab that checks the history of your profile and cleans it up every 1st Monday of the week.
4. Write a script that checks if Crontab is properly formatted.
Cr min hr dom mon dow CMD
5. Write a script that takes 2 file names as input arguments and merges the data and then sort the data based on the nth column passed as an argument. There can be more than 1 argument for sorting, that would mean sort the file by first argument and then followed by 2nd argument and so on for all arguments that are given after the file names.
6. Write a script that takes a list as an argument and flattens the data in the list.
E.g (1 (2 (3 4 5)))) ==> (1 2 3 4 5)
7. Take a string and check if the value is a palindrome
8. Write a program that provides an interface for read, write, update and delete a record in the file. The record contains Employee Number, Name and Salary. Identify the duplicate records in a file.
9. Identify the nth highest salary in the file. If the input is '10', it should print employee number, name and salary of all employee(s) that have 10th highest salary.
10. Write a program that can take any number of arguments and performs an exponential value of that number. Example abc.sh 2 3 4 5 , the expected value is 1152921504606846976
11. Build a Basic calculator that takes operator and "n" operands for basic arithmetic operations
12. Takes a date in Word Format (it can be Oct, October, etc.. Standard month and date nomenclature) and asks for the date format to be printed - MM/DD/YYYY or DD-MM-YYYY and so on) and then prints in the numeric format
13. Create a cronjob that checks for every alternate month 3rd Wednesday 8:23 PM for finding files that have been modified in the last 3 months and then does a back-up into a different server (mirage account)
14. Create a HTML file that contains a table of all directories and files in the directories of your login
15. Download at least 2 IIIT webpages and sort the words based on their frequency