CS232--Free and Open Source Software Lab
LAB EXERCISE QUESTIONS

CYCLE-I

1. Getting started with Finding, understanding and documenting the Linux basic commands for directory operations, displaying directory structure in tree format etc.

2. Finding, understanding and documenting Linux commands for operations such as redirection, pipes, filters, job control, changing ownership/permissions of files/links/directory.

3. Understanding and documenting Advanced Linux commands curl, wget, ftp, ssh and grep.

CYCLE-II

4. Shell Programming: Write shell script to show various system configuration like

- Currently logged user and his login name
- Your current shell
- Your home directory
- Your operating system type
- Your current path setting
- Your current working directory
- Number of users currently logged in

5. Write shell script to show various system configurations like

- Your OS and version, release number, kernel version
- All available shells
- Computer CPU information like processor type, speed etc
- Memory information
- Hard disk information like size of hard-disk, cache memory, model etc
- File system (Mounted)

6. Write a shell script to implement a menu driven calculator with following functions

1. Addition
2. Subtraction
3. Multiplication
4. Division
5. Modulus

CYCLE-III

7. Write a script called addnames that is to be called as follows, where classlist is the name of the classlist file, and username is a particular student's username.

./addnames classlist username

The script should

1. check that the correct number of arguments was received and print an usage message if not,
2. check whether the classlist file exists and print an error message if not,
3. check whether the username is already in the file, and then either
4. print a message stating that the name already existed, or
5. Add the name to the end of the list.

8. Shell script to implement a script which kills every process which uses more than a specified value of memory or CPU and is run upon system start.

CYCLE-IV

9. Version Control System setup and usage using GIT.

   1. Creating a repository
   2. Checking out a repository
   3. Adding content to the repository
   4. Committing the data to a repository
   5. Updating the local copy
   6. Comparing different revisions
   7. Revert
   8. Conflicts and Solving a conflict

CYCLE-V

10. GUI programming: Create scientific calculator – using Gambas or try using GTK or QT

11. Compiling from source code: learn about the various build systems used like the auto* family, cmake, ant etc. instead of just running the commands. This could involve the full process like fetching from a cvs and also include autoconf, automake etc.,

CYCLE-VI

12. Virtualisation environment (e.g., xen, kqemu, virtualbox or lguest) to test an applications, new kernels and isolate applications. It could also be used to expose students to other alternate OSs like *BSD
13. Introduction to packet management system: Given a set of RPM or DEB, how to build and maintain, serve packages over http or ftp. And also how do you configure client systems to access the package repository.