Operating Systems Lab
(UCS – 303)

LAB Assignment No.-1

1. Introduction to linux
2. Clear command
3. > option for directing the output of a command.
4. who, ps, adduser, man, help, pwd commands
5. Introduction to kernel, shell, types of shell
6. ls, ls D*, ls –l and explanation of the details of file in –l command.
7. Printing variable values
8. mkdir, rmdir, rm, rm –r, toach commands
9. cd, cd .. commands
10. To make, remove and change directory for names including spaces eg. “Thapar Institute” as mkdir Thapar\ Institute.
11. cp, mv, echo, cat, cal, date commands.

LAB Assignment No.-2

In details explanation of the following commands and topics:

1. ls command and its options.
   ls .., ls *, -a, -R, -d */, /, -l, -i, -t, -S, -d $PWD/*
2. combination of above options of ls and storing output of ls in some file by using > operator.
3. Introduction and options for cat
   -n, -e, -T, more, less, sort
4. cat file1.txt file2.txt
   cat file1.txt > file2.txt
   cat file1.txt file2.txt > file3.txt
   cat file1.txt file2.txt | sort > file3.txt
   cat < newest.txt
5. echo and echo –e
6. printf command
7. cal command and its options
   -m, -y, -j
8. cal 2 2006
9. date command and its options
   --date or -d, --set or -s, -u, -f, -r

LAB Assignment No.-3

In details explanation of the following commands and topics:

1. Feeding output of one command to another by pipeline.
2. Locate, grep commands
3. PATH and SHELL variable
4. chmod
5. Using escape sequence.
6. Internal and External commands.
7. Commands - passwd, uname, tty, stty
8. Types of files and file system in Linux.
9. Directory structure in Linux
10. HOME variable
11. Absolute and relative pathname
12. Using **.** and **..**
13. Commands - wc, comm, cmp, diff
14. Adding permissions
15. File permissions and changing the access rights.
16. Relative and absolute permission.
17. Directory permission.
18. Changing file ownership.
19. Changing group of a particular file.
20. r/w/x permissions for directory.

LAB Assignment No.-4

Write and execute the following UNIX commands:

1. To change the password.
2. To search files in the current directory/subdirectory for lines that match a particular string pattern given as input.
3. To print the first 5 lines of a file.
4. To print the number of processes run by a particular user.
5. To kill a process that is running at the background.
6. To display the count of no. of blank spaces in a given file.
7. To sort alphabetically, a list of numbers stored in a data file in an ascending order.
8. To convert the upper case letters to corresponding lower case letters in a text file.
9. To count the number of users currently logged on.

In details explanation of the following commands and topics:

1. Shell script
2. Read operation in shell script
3. Using command line argument
4. exit and EXIT status of commands
5. Logical operators &&, ||

6. Conditional construct – If
7. Using test AND [ ] to evaluate an expression
8. Numeric comparison
9. String comparison
10. Conditional construct - Case
11. Matching multiple patterns
12. expr – Computational and String handling
13. Looping – While, For

LAB Assignment No.-5

Write shell programs for the following:

1. To find second largest number among the 5 numbers given.
2. To find sum of all the alternate digits in a given 7 digit number.
3. To count number of vowels in a given string. (d) To take 2 strings as input, concatenate them and display
4. To take 2 strings as input, concatenate them and display the length of the resultant string.
5. To display the reverse of a given number.
6. Write a shell program to count the number of special symbols, end of line characters and blank-spaces present in a text file. Redirect the output to a file called as output.
7. Write a shell script to display the number of files and their details in the current directory, whose filenames are starting with the character “c” (or any other).
8. Write a shell program to count no. of characters, vowels, special symbols and blank spaces in a given file provided by the user as input and individually display the count.
9. Write a shell script to check whether the year given as input is a leap year or not.
10. Write a shell script to add two matrices A and B of size 3 x 2 matrix.