

TKM College of Engineering, Kollam
Department of Computer Science and Engineering
 B. Tech S4 CSE (KTU)
 Operating System Lab- Cycle Questions

LIST OF EXPERIMENTS
1. Familiarization of Linux basic commands and directory structure
2. Familiarization of Linux Advanced Commands
3. Shell Scripting
4. System Calls in Linux
5. CPU scheduling algorithms

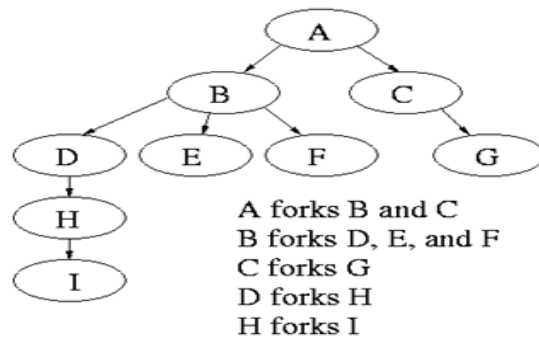
Note: Only implementation and Output should be in printed form

1	<p>To Familiarize Linux basic commands and directory structure, execute file, directory operations</p> <ol style="list-style-type: none"> 1) Create five empty files <i>empty1</i>, <i>empty2</i>, <i>empty3</i>, <i>empty4</i> and <i>empty5</i>. 2) Create a file called <i>text</i> and store your name, age and address on it. 3) Display the contents of file <i>text</i> on screen. 4) Make a copy of file <i>text</i> as <i>newtext</i>. 5) Create a file <i>maths</i> and write any two sentences. 6) Combine contents of file <i>text</i> and <i>maths</i> into another file <i>textmat</i>. 7) Delete the file <i>text</i> 8) Change the permission of file <i>newtext</i> to 666. 9) Rename the file <i>newtext</i> to <i>oldtext</i>. 10) Create a directory <i>mydir</i> in current directory. 11) Move the file <i>oldtext</i> and <i>maths</i> to <i>mydir</i> 12) Create a directory <i>newdir</i> within <i>mydir</i>. 13) Copy the contents of <i>mydir</i> into <i>newdir</i>. 14) Delete interactively all empty files created earlier
2	<p>To familiarize Linux commands for redirection, pipes, filters, job control, file ownership, file permissions, links and file system hierarchy.</p> <ol style="list-style-type: none"> 1) Write the names of five fruits in a file named <i>fruits.txt</i> and read its contents and write to another file <i>newfruits.txt</i>. 2) Sort the names of fruits in reverse order and put it in <i>reverse.txt</i>. 3) List all the files in current directory, count the no. of words and lines of a file and then write it to new file <i>count.txt</i>.

	<p>4) To create a file with a set of data, the line containing the word 'poem' should be counted and store the count in another file.</p> <p>5) List all files begins with character 'p' and store them in file <i>two</i>.</p> <p>6) Create two files, one containing your name, age and address and another containing your class, roll no. and college. Combine these two files and store in <i>detail.txt</i></p> <p>7) Merge contents of <i>a.txt</i>, <i>b.txt</i> and <i>c.txt</i>. Sort them and search a particular word 'th'.</p> <p>8) List all the files in the current directory and print the files that were created in August.</p> <p>9) Execute four sleep commands in background.</p> <p>10) List the running jobs. Bring the job 3 to foreground, suspend it and send it to the background</p>
3	<p>Basics of Shell Programming:</p> <ol style="list-style-type: none"> Write a shell script program to perform arithmetic operations on two numbers. Write a shell script program demonstrate use of command line parameters in shell script(script name, total parameters, each parameter) Write a shell script program to check whether two strings sent as command line arguments are same or not using test command. Write a shell script program to read a particular name and check whether it is a file or directory. Write a shell script menu driven program to implement a simple calculator. Write a shell script program to count the number of files in the current directory beginning with the specified character. Write a shell script program to read the lines from one file and store them into another file after converting all the vowels from first file into uppercase. Write a shell script program that accepts the name of the user and prints the entered name in reverse and also print the length of the entered name. Write a shell script program consider a file school.dat with the following fields. Rollno, name and marks. Write a shell script program to sort the file in descending order of marks. Write a shell script program to copy content of file1 to file2. If file2 exists then append the content of file1 to its original file. To write a shell script using for loop to print the following patterns on screen.

	<p>1 22 333 4444 55555</p> <p>l. Write shell script to show various system configuration like</p> <ol style="list-style-type: none"> Currently logged user and his logname Your current shell Your home directory Your operating system types Your current path setting Your current working directory Show Currently logged number of users <p>m. Write shell script to show various system configuration like</p> <ol style="list-style-type: none"> About your OS and version, release number, kernel version Show all available shells Show mouse settings Show computer CPU information like processor type, speed etc Show memory information Show hard disk information like size of hard-disk, cache memory, model etc File system (Mounted) <p>n. Write a script called addnames that is to be called as follows, where <i>classlist</i> is the name of the classlist file, and <i>username</i> is a particular student's username.</p> <p>The script should</p> <ul style="list-style-type: none"> check that the correct number of arguments was received and print an usage message if not, check whether the classlist file exists and print an error message if not, check whether the username is already in the file, and then either print a message stating that the name already existed, or add the name to the end of the list.
4	<p>Familiarization of various system calls in LINUX operating system fork, exec, getpid, exit, wait, close, stat, opendir, readdir</p> <p>A. Program to accept the limiting value 'n' as input and generate the Fibonacci sequence of n numbers using the child process while the parent process generate the first n prime numbers</p>

- B. Generate an N level hierarchy of processes and also display the parent id of process.



- C. Write a program to create four processes (1 parent and 3 children) where they terminate in a sequence as follows:
- (a) Parent process terminates at last
 - (b) First child terminates before parent and after second child.
 - (c) Second child terminates after last and before first child.
 - (d) Third child terminates first.

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- 5.1 Write a Menu driven program to implement FCFS and SJF CPU scheduling algorithm (Non Preemptive). Read burst time and display the following. a) Waiting time of each process. b) Average waiting Time. c) Turn Around Time of each process. d) Average Turn Around Time. e) Throughput.
- 5.2 Write a Program to implement Pre-emptive SJF CPU Scheduling algorithm and calculate Average Waiting Time, Average Turn Around Time and Throughput of the system.
- 5.3 Write a program to implement Priority Scheduling algorithm (Preemptive and Non-Pre-emptive). Read burst time, priority, arrival time and display the following. a) Waiting time of each process. b) Average waiting Time. c) Turn Around Time of each process. d) Average Turn Around Time. e) Throughput and Gannt chart
- 5.4 Write a Program to implement Round Robin Scheduling algorithm. Implement the program as a menu driven on the basis of time quantum (possible values of time quantum are: 2ms, 4ms, 8ms and 10 ms) and calculate Average Waiting Time, Average Turn Around Time and Throughput of the the system in each case.