

LINUX PROGRAMING
III B.Tech -I Sem



CHINAGURAVIAH M
Asst. Professor

J.B.Institute of Engg & Technology

Yenkapally, Moinabad(Mandal)
Himathnagar(post),Hydreabad

Results Target

Total Strength of the Class:

S. No	Class / Division	No. of Students
a.	First Class with Distinction	
b.	First Class	
c.	Pass Class	

Method of Evaluation

a.	Internal Examination	2
b.	Unit Wise Assignments	4
c.	Descriptive Exam	2
d.	Objective	2
e.	Final Examination	1

Course Objective

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J.B.Institute of Engg & Technology

Department of Information Technology

Syllabus

Subject Name : LINUX PROGRAMING

Subject Code : 55050

Class : III B.Tech

<u>Sl.No</u>	<u>Unit No:</u>	<u>Details of the unit</u>
01	Unit – I	Linux utilities-file handling utilities, Security by file permissions, Process utilities, Filters, Text processing utilities, Backup utilities sed-scripts, Operations addresses, commands applications, awk-execution, field and records
02	Unit – II	Working with the bourne again shell(bash):Introduction , Shell responsibilities, pipes, and input redirection , Output redirection, here documents, running a shell script, the shell as a pL, Shell meta data characters, file name substitution, shell variable, Command substitution shell commands , the environment, quoting ,testing command command control structures, arithmetic in shell, Arithmetic in shell, shell script examples, interrupt processing, functions, debugging shell scripts,
03	Unit – III	Files: file concept, file system structures, nodes, file attributes,file attributes, file types Library functions,the standard I/O and formatted/o in c,stream errors,kernel support for files system call file descriptors low level file access-file structure related ,system calls,file and record locking,file and directory,management,directory file ,APi symbolic links and hard links
04	Unit – IV	Process, process concept, kernel support ffor process, process attributes, process control, process creation, waiting for a process, process termination,zombie process,orphan process API,signal –introduction to signal,signal gernaration and handling , kernel support for signal, signal function, unreliable signal,kill,raise,alarm,pause,about,sleep functions
05	Unit – V	Interprocess communication: introduction to ipc, pipes, FIFOs introduction 3 types of ipc –message queues,semaphores and shared memory. Memory queues –kernel support for message queues semaphores and shared memory
06	Unit - VI	Semaphores-kernel support for semaphores,unix system V ApI for semaphores ,shared memory-kernel support for shared memory,unix system V API for shared memory semaphore and shared memory example
07	Unit - VII	Multithreading programming : difference between threads and processes, thread structures and uses, threads and light weight process, POFIX thread API creation threads,with semaphores, and with muteness example programs
08	Unit - VIII	Sockets: introduction to sockets, socket Address, socket system calls for connection orieneded protocol and connection protocol example client/server programs

Guidelines to Students

Where will this subject help?

Books / Material

Text Books: (TB)
TB 1 . unix system programming using c++,t.chan,PHI(unit III to unit VIII)
TB 2 : unix concepts and application, 4th edition sumitabha das,TMH.
TB 3 : Begginning Linux porgraming \$th edition n.matthew, r.stones, wrox, wiley india editions

Suggested / Reference Books (RB)
RB 1.linux system programming,Robert love,O reilly
RB 2. Unix network programming w.r stevens PHI

J.B.Institute of Engg & Technology

Department of Information Technology

SUBJECT PLAN :

Subject Name : LINUX PROGRAMING

Subject Code : 55050

Class : III B.Tech

Faculty Name : N.Ramya Jyoshna

Number of Hours / lectures available in this Semester / Year

65

Distribution of Hours Unit – Wise

Unit	Topic	Total No. of Hours
I	Linux utilities-file handling utilities, Security by file permissions, Process utilities, Filters, Text processing utilities, Backup utilities sed-scripts, Operations addresses, commands applications, awk-execution, field and records	11
II	Working with the bourne again shell(bash):Introduction , Shell responsibilities, pipes, and input redirection , Output redirection, here documents, running a shell script, the shell as a pL, Shell meta data characters, file name substitution, shell variable, Command substitution shell commands , the environment, quoting ,testing command command control structures, arithmetic in shell, Arithmetic in shell, shell script examples, interrupt processing, functions, debugging shell scripts,	08
III	Files: file concept, file system structures,Inodes, file attributes,file attributes, file types Library functions,the standard I/O and formatted/o in c,stream errors,kernel support for files system call file descriptors low level file access-file struncture related ,system calls,file and record locking,file and directory,management,directory file ,APi symbolic links and hard links	8
IV	Process, process concept, kernel support ffor process, process attributes, process control, process creation, waiting for a process, process termination,zombie process,orphan process API,signal –introduction to signal,signal gernaration and handling , kernel support for signal, signal function, unreliable signal,kill,raise,alarm,pause,about,sleep functions	5
V	Interprocess communication: introduction to ipc, pipes, FIFOs introduction 3 types of ipc –message queues,semaphores and shared memory. Memory queues –kernel support for message queues semaphores and shared memory	09
VI	Semaphores-kernel support for semaphores,unix system V ApI for semaphores ,shared memory-kernel support for shared memory,unix system V API for shared memory semaphore and shared memory example	06

VII	Multithreading programming : difference between threads and processes, thread structures and uses, threads and light weight process, POFIX thread API creation threads,with semaphores, and with muteness example programs	08
VIII	Sockets: introduction to sockets, socket Address, socket system calls for connection orieneded protocol and connection protocol example client/server programs	09
	Total	65

JBLET
Dept of IT

J.B.Institute of Engg & Technology

Department of Information Technology

LESSON PLAN :

Subject Name : LINUX PROGRAMING

Subject Code : 55050

Class : III B.Tech

Faculty Name : N.Ramya Jyoshna

Unit I: xxxxxxxxxxxxxxxx

LEARNING OBJECTIVES:



LECTURE PLAN:

Total no_ of classes: 08

Unit #	Topic as per JNTU syllabus	Lesson #	Suggested Books ** (Refer the list	Question Bank			Hand outs
				OQ	DQ	AQ	
1	Linux utilities-file handling utilities	1	B1	Below			
2	Security by file permissions	1	B1	Below			
3	Process utilities	1	B1	Below			
4	Disk utilities networking commands	1	B1	Below			
5	Filters	1	B1	Below			
6	Text processing utilities	1	B1	Below			
7	Operations addresses, commands applications	1	B1	Below			
	.awk-execution, field and records	1	B1	Below			
		1	B1	Below			

OBJECTIVE QUESTIONS :

1. What command is used to count the total number of lines, words, and characters contained in a file?

- A. countw
- B. wcount
- C. wc
- D. count p
- E. None of the above

2. What command is used to remove files?

- A. dm
- B. rm
- C. delete
- D. erase
- E. None of the above

3. What command is used to remove the directory?

- A. rdir
- B. remove
- C. rd
- D. rmdir
- E. None of the above

4. What command is used with vi editor to delete a single character?

- A. x
- B. y
- C. a
- D. z
- E. None of the above

5. What hardware architectures are not supported by Ret Hat?

- A. SPARC
- B. IBM-compatible
- C. Alpha
- D. Macintosh
- E. None of the above

6. What command is used to save the standard output in a file, as well as display it on the terminal?

- A. tee @
- B. grep
- C. cat
- D. more
- E. None of the above

7. What command is used to count just the number of lines contained in a file?

- A. wc - r
- B. wc - w
- C. wc - c
- D. wc - l @
- E. None of the above

8. In OSI network architecture, the routing is performed by

- A. session layer
- B. transport layer
- C. data link layer
- D. network layer @
- E. None of the above

9. The 32-bit internet address 10000000 00001010 00000010 00011110 will be written in dotted decimal notation as

- A. 128.10.2.30 @
- B. 210.20.2.64
- C. 164.100.9.61
- D. 148.20.2.30
- E. None of the above

10. Which class network is used for a collection of a small number of networks with a large number of nodes?

- A. Class A @
- B. Class B
- C. Class C
- D. All of the above
- E. None of the above

DESCRIPTIVE QUESTIONS :

1. what are file handling utilities and processing utilities?
2. What are the file permissions for providing security to the files?
3. Explain the AWK commands?

ASSIGNMENT QUESTIONS:

1. explain text processing utilities and Network commands?
2. Explain the following commands with examples ?

a. Sed b. grep c. cat

UNIT-II :

LEARNING OBJECTIVES:

LECTURE PLAN:

Total No_ of Classes:

S.No	Name of the Topic	Reference book code	No. of classes required
8	Working with the bourne again shell(bash):Introduction	4	2
9	Shell responsibilities, pipes, and input redirection	4	2
10	Output redirection, here documents, running a shell script, the shell as a pL	4	2
11	Shell meta data characters, file name substitution, shell variable	4	2
	Command substitution shell commands , the environment, quoting ,testing command command control structures, arithmetic in shell		
12	Arithmetic in shell, shell script examples, interrupt processing, functions, debugging shell scripts		
	Shell script examples interrupt processing, function, debugging shell script		

OBJECTIVE QUESTIONS :

- 1.
- 2.

DESCRIPTIVE QUESTIONS :

1. Explain the control structures of shell programming with suitable examples?
2. Describe pipe, input redirection and output redirection?
3. write shell scripts on prime number and Fibonacci series by using control structures?

ASSIGNMENT QUESTIONS:

1. Describe control structures of shell scripts with examples?
2. Describe pipe and input redirection and output redirection ?

UNIT-III

❖ LEARNING OBJECTIVES:

LECTURE PLAN:

Total No_ of Classes:

S.No	Name of the Topic	Reference book code	No. of classes required
14	Files: file concept, file system structures, I nodes, file attributes,file attributes, file types	1,3	2
15	Library functions,the standard I/O and formatted/o in c,stream errors,kernel support for files system call file descriptors	1,3	1
16	low level file access-file structure related	1,3	1
17	directory,management,directory file ,	1,3	2
18	APi symbolic links and hard links	1,3	1
		1,3	1

OBJECTIVE QUESTIONS :

- 1.
- 2.

DESCRIPTIVE QUESTIONS :

1. Define file descriptor and explain different system calls used in file?
2. explain the file structure related system calls?

ASSIGNMENT QUESTIONS:

1. explain the following system calls?

- a) read()
- b) write()
- c) open()
- d) close()

UNIT-IV :

❖ LEARNING OBJECTIVES:

LECTURE PLAN:

Total No_ of Classes:

S.No	Name of the Topic	Reference book code	No. of classes required
19	Process, process concept,	1,4	2
20	kernel support ffor process, process attributes, process control, process creation,	1,4	1
21	waiting for a process, process termination,zombie process,orphan process API,signal –introduction to signal,signal gernaration and handling ,	1,4	1
22	kernel support for signal, signal function, unreliable signal,kill,raise,alarm,pause,about,sleep functions	1,4	1

OBJECTIVE QUESTIONS :

- 1.
- 2.

DESCRIPTIVE QUESTIONS :

1. Define process ? Explain the process concepts?
2. Explain the different process controls?
3. Define signal? And Explain different signal system system calls?

ASSIGNMENT QUESTIONS:

1. Explain the process concepts? Explain the different process controls?
2. Define signal? And Explain different signal system system calls?

UNIT-V:

❖ LEARNING OBJECTIVES:

LECTURE PLAN:

Total No_ of Classes:

S.No	Name of the Topic	Reference book code	No. of classes required
22	Interprocess communication: introduction to ipc, pipes	4	2
23	, FIFOs introduction 3 types of ipc – message queues,semaphores and shared memory.	4	2
24	Memory queues –kernel support for message	4	2
25	queues semaphores and	1,3	2
26	shared memory	1,3	1

OBJECTIVE QUESTIONS :

- 1.
- 2.

DESCRIPTIVE QUESTIONS :

1. What is interprocess communication? Give small description on IPC mechanisms?
2. Explain the unnamed pipes and named pipes(FIFO's)?
3. Define Message queues? Explain Message Queues with client/server example?

ASSIGNMENT QUESTIONS:

1. Explain the IPC? Explain the different IPC mechanisms?
2. Explain the unnamed pipes and named pipes(FIFO's)?
3. Define Message queues? Explain Message Queues with client/server example?

UNIT-VI:**❖ LEARNING OBJECTIVES:****LECTURE PLAN:****Total No_ of Classes:**

S.No	Name of the Topic	Reference book code	No. of Lecture classes required
27	<u>Semaphores</u> - kernel support for semaphores,unix system V ApI for semaphores . <u>shared memory</u> - kernel support for shared memory,unix system V API for shared memory semaphore and shared memory example	1	2
28		1	2
29		1	2

OBJECTIVE QUESTIONS :**DESCRIPTIVE QUESTIONS :**

1. Define semaphores ? explain API for semaphores?
2. Define shared memory? Explain how the kernel supports for shared memory?

ASSIGNMENT QUESTIONS:

1. Define and explain semaphores with example?
2. Define and explain shared memory with example?

UNIT-VII:**❖ LEARNING OBJECTIVES:****LECTURE PLAN:****Total No_ of Classes:**

S.No	Name of the Topic	Reference book code	No. of classes required
30	Multithreading programming :	1,3	1
31	difference between threads and processes,	1,3	2
32	thread structures and uses, threads and light weight process,	1,3	2
33	POFIX thread API creation threads,	1,3	2
34	with semaphores, and with muteness	1	1
35	example programs	1	1

OBJECTIVE QUESTIONS :

- 1.
- 2.

DESCRIPTIVE QUESTIONS :

1. Define and explain threads examples and write a short note on difference on threads and processes?
2. describe thread structures and creation of threads?

ASSIGNMENT QUESTIONS:

1. Define and explain threads examples and write a short note on difference on threads and processes?
2. Describe thread structures and creation of threads?

UNIT-VIII:**❖ LEARNING OBJECTIVES:****LECTURE PLAN:****Total No_ of Classes:**

S.No	Name of the Topic	Reference book code	No. of classes required
36	Sockets: introduction to sockets,	1,4,5	2
37	socket Address,	1	2
38	socket system calls for connection oriented protocol and connection protocol example client/server programs	1	1
39	protocol and connection protocol	1,3	2
40	example client/server programs	1,3	2

OBJECTIVE QUESTIONS :

- 1.
- 2.

DESCRIPTIVE QUESTIONS :

1. Write a brief description on sockets and socket system calls (connection oriented and connectionless protocols)?

ASSIGNMENT QUESTIONS:

1. Write a brief description on sockets and socket system calls (connection oriented and connectionless protocols)?

DEPARTMENT OF INFORMATION TECHNOLOGY

INDIVIDUAL TIME TABLE

NAME OF THE FACULTY: chinaGuravaiah

Period	1	2	3	4		5	6	7
Day/Time	9.00-9.50	9.50-10.40	10.40-11.30	11.30-12.20	L U N C H	12.50-1.40	1.40-2.30	2.30-3.20
Mon	lp		lp					
Tue		lp						
Wed	lp					lp		
Thu							lp	
Fri							lp	
Sat		lp	lp					

Software Engineering(SE):

Total no of theory classes : 06

Total no of practical classes : 00

Total no of classes : 06

Unit 1

1. What is a process. List and Explain various process utilities with suitable examples.
2. Explain basic file attributes. Discuss the appropriate commands associated with these attributes.
3. "Operating systems like UNIX provide services both for programs and users". Justify this statement with suitable examples.
4. Explain the significance of the following commands. i. ls -ld ii. ls -l.
5. Give a note on vi editor.
6. What is an operating system? Explain How UNIX fulfills more than that role. Discuss suitable examples.
7. Explain various commands available in UNIX for networking. Discuss suitable examples.
8. Write short notes on:
 - (a) Unix system services
 - (b) Shell responsibilities
 - (c) Inode block.
9. Define Shell and kernel. Differentiate them.
10. Illustrate the cycle of command execution by Unix. 1. (a) What is the difference between the text editing provided by 'ed' & 'vi' text editors.
11. What are the two operational modes of vi editor? What is the use of each?

Unit 2

1. Explain the different approach taken by diff command to display file differences.
2. Describe 'comm' command. Explain the output with -1,-2, or -3 options in 'comm'

command.

3. Which is the command used for ordering a file? Discuss all the options available for this command. For every option Explain with an example.
4. What is a filter in UNIX? Explain any four filters in detail with examples.
5. How to remove duplicate lines from a file using sort?
6. How to count the number of ordinary files in home directory tree?
7. Select lines 5 to 10 of a file in two ways.
8. Discuss the various backup utilities available in UNIX. Illustrate with suitable examples.
9. Which is the command used for ordering a file? Discuss all the options available for this command. For every option Explain with an example.
10. . Explain awk, tar, cpio with necessary examples.
11. What is the usage of filters?
12. Explain the following filters. more, cmp, tr, uniq.
13. Explain the following Unix shell commands with examples. cut, paste, egrep, fgrep.
14. What is the purpose of cat?
15. When using cat>abc, What happens if abc already contains something?
16. What happens when you use cat abc>abc?
17. Is the output of the following command be directed to the standard output. Cat abc xyz >/dev/tty

Unit 3

1. Explain about the usage of multiple commands on the shell command line with example.
2. Write a menu driven shell script Which has following options.
 - i. Contents of /etc/passwd.
 - ii. List of users who have currently logged in.
 - iii. Present working directory.
 - iv. Exit. .

Make use of case statement. The menu should be placed appropriately in the centre of the screen and should be displayed in bold using the tput command. .

3. While executing a shell script either the LOGNAME or the UID is supplied at the command prompt. Write a shell script to find out at How many terminals has this user logged in?
4. Write a shell script to display first n numbers of Fibonacci series.
5. If x has the value 5, and you reassign it with x="expr \$x+10", What is the new value of x? What would have been the value if single quotes were used? What's wrong with all this anyway?
6. Devise a script that accept 2 directory names bar1 and bar2, and deletes those files in bar2 whose contents are identical to their namespaces in bar1.
7. Write a shell script Which reports names and sizes of all files in a directory (directory would be supplied as an argument to the shell script) whose size is exceeding 1000 bytes. The filename should be printed in descending order of their sizes. The total number of such files should also be reported.
8. Write a C program to search for the word 'exam' in a Given file, using Command line arguments.
9. Write a shell script to accept a string from the terminal and use 'case' to echo a suitable message if the string does not have at least 10 characters using: i. case ii. expr
10. Write a shell script to display the processes in the system five times every 30 seconds using: i. while loop ii. for loop.
11. Write a shell script for the following task. The word 'unix' is present in only some of the files supplied as arguments to the shell script. Your shell script should searched each of these files in turn and stop at the first file that it encounters containing the word 'unix'. This filename

should be displayed on the screen.

12. Write a C program Which receives file names as command line arguments and display those filenames in ascending order according to their sizes.
13. Write a shell script Which will receive any number of filenames as arguments. The shell script should check whether every argument supplied is a file or a directory. If it is a directory it should be appropriately reported. If it is a Filename then name of the file as well as the number of lines present in it should be reported.
14. Write a C program to simulate 'tail' command.
15. Write short notes on:
 - (a) program development & debugging commands
 - (b) necessary commands to carry on day to day activities.
16. Write a shell script to simulate cp command.
17. Write short notes on shell script arguments.
18. Write a shell script to check whether a Given file is a directory. If so, empty the contents of the directory and remove the directory.
19. How do you clean the screen and place the cursor at row 15 and column 20?
20. Write a shell script to find the decimal equivalent of 1101001.

Unit 4

1. Explain about different conditional expressions available in Bourne shell.
2. Write a shell script Which receives two filenames as arguments. It should check whether the two file's contents are same or not. If they are same then second file should be deleted. Use 'cmp' command to compare files.
3. What is metacharacter? List and Explain about any 7 metacharacters available in unix.
4. Write a shell script Which will receive either the filename or the filename with it's full path during execution.this script should obtain information about this file as Given by ls - l and display in proper format.
5. What is a shell? What are the responsibilities of a shell?
6. What are the different types of shells available in unix.
7. Write a shell script Which gets executed the moment the user logs in. It should display the message "good morning/good afternoon/good evening" depending upon the time at Which the user logs in.
8. Explain about here documents with an example.
9. Explain following
 - (a) Shell meta characters
 - (b) Shell types in Unix
10. What is a loop? Compare and contrast while and until loops.
11. How for loop is used with command line arguments? Explain with a suitable example
12. Write short notes on following commands Trap, export, exit, expr, break, continue
13. Define Unix shell. Explain shell environment.
14. Briefly Explain Different shells available in Unix.

Unit 5

1. Write a C program to print the type of specified file (Regular, device, directory)
2. Write and Explain about hard and symbolic links.. give an example for each.
3. Explain about file descriptors & i-node?
4. Write the difference between fgetc and getc system calls.
5. Write the syntax of fflush system call give an example.
6. Write about unlink system call and give an example.
7. Write about Write system call and illustrate with an example.
8. Explain the differences between fgets, gets system call.
9. Explain link, unlink, remove and rename functions with syntaxes.
10. What are fflush and fseek functions? Explain.
11. Explain in detail about lseek function.
12. What is fcntl function? What is the purpose of using it?
13. Write the syntax of creat function. Explain, how this function is equivalent to open function.
14. Explain in detail, how an opened file can be positioned.
15. What are stat, fstat and lstat functions? Explain.
16. Give the syntaxes for chmod and fchmod functions and state their importance.
17. Write the syntax of following system calls.
 - * open
 - * creat
 - * read
 - * Write
 - * chmod
 - * chown
 - * unlink
 - * link.

Unit 6

1. Write a program to illustrate the vfork function call.
2. Write a program for signal implementation.
3. Write a program which used both kill and raise functions.
4. Write a program which uses abort function.
5. Write a program which used both kill and raise functions.
6. Write the differences between wait and waitpid system calls.
7. Explain threads.
8. Write the system calls for process termination in detail.
9. Explain process creation and process termination in detail.
10. What is a process? Explain waiting for a process in detail.
11. What are the uses of fork function?
12. Write a short note on zombie process.
13. What are the different properties that are inherited by the child from its parent. Explain.
14. What are the differences between parent and child processes.
15. What are the differences between sleep and abort functions? Explain.
16. What is a zombie process? Explain.
17. What are the various properties that are inherited by the child from their parent?
18. Differentiate between parent and child processes.
19. Write the syntax of following functions. Explain each argument.

- * kill
- * raise
- * alarm
- * exit

Unit 7

1. Write a comparative study of adversary and mandatory locking.
2. Write in detail about locking regions.
3. Explain the concept of requesting and releasing a lock.
4. Write in detail about locking regions.
5. Write about different Unix locking techniques.
6. Write a C program to use a function lock test to test for a lock.
7. Write about lockf function.
8. Write the differences between fcntl function and flock function.
9. Write and Explain locking routines using a create() system call.
Explain with examples, competing locks and locking regions in detail.
Write a short note on competing locks.
Explain the usage of read and Write functions with locking.
State the importance of file locking and Explain locking regions in detail.
What is a null pointer? Explain with example, What happens when we try to access a null pointer.

Unit 8

1. Write about system call pipe . Give an example which uses pipe system call.
2. Explain the logic for opening or creating an IPC channel
3. Explain the following concepts about pipes
 - * Pipes between two process
 - * Pipes among three process in a shell
4. Explain the concept of IPC between two processes on a single system. Give Example.
5. What is the data stored by the kernel when a semaphore is created.
6. What is the system call that is used to create a shared memory segment and Explain each field in detail. [8+8]
7. The syntax of msgget system call is int msgget(key t key, int flag)
 - * Explain type of key
 - * Explain What value it returns
 - * What is the use of flag
8. Explain the following concepts
 - * Pipes in single process
 - * Pipes in single process, immediately after fork
9. Explain the concept of IPC between two processes on a single system. Give Example
10. What are the advantages and disadvantages of system v IPC?
11. What is a FIFO? Why FIFOs are called as named pipes? Explain

12. Write a program to create a pipe and to execute it on the client.
13. Mention the rules for writing information into the pipe.
14. Compare the IPC functionality provided by pipes and message queues. What are the advantages and drawbacks of each? When is one more suitable than the other.
15. Define Inter Process Communication? Explain IPC between two processes on different systems.
16. What is a pipe? Using pipe, how IPC can be implemented.

1. What command is used to count the total number of lines, words, and characters contained in a file?

- A. countw
- B. wcount
- C. wc
- D. count p
- E. None of the above

2. What command is used to remove files?

- A. dm
- B. rm
- C. delete
- D. erase
- E. None of the above

3. What command is used to remove the directory?

- A. rdir
- B. remove
- C. rd
- D. rmdir
- E. None of the above

4. What command is used with vi editor to delete a single character?

- A. x
- B. y
- C. a
- D. z
- E. None of the above

5. What hardware architectures are not supported by Ret Hat?

- A. SPARC
- B. IBM-compatible
- C. Alpha
- D. Macintosh
- E. None of the above

6. What command is used to save the standard output in a file, as well as display it on the terminal?

- A. tee @
- B. grep
- C. cat
- D. more
- E. None of the above

7. What command is used to count just the number of lines contained in a file?

- A. wc - r
- B. wc - w
- C. wc - c
- D. wc - l @
- E. None of the above

8. In OSI network architecture, the routing is performed by

- A. session layer
- B. transport layer
- C. data link layer
- D. network layer @
- E. None of the above

11. The 32-bit internet address 10000000 00001010 00000010 00011110 will be written in dotted decimal notation as

- A. 128.10.2.30 @
- B. 210.20.2.64
- C. 164.100.9.61
- D. 148.20.2.30
- E. None of the above

12. Which class network is used for a collection of a small number of networks with a large number of nodes?

- A. Class A @
- B. Class B
- C. Class C
- D. All of the above
- E. None of the above

What is Linux and why is it so popular?

Answer - Linux is an operating system that uses UNIX like Operating system.....

What is LILO?

Answer - LILO is Linux Loader is a boot loader for Linux. It is used to load Linux into the memory and start the Operating system.....

What is the difference between home directory and working directory?

Answer - Home directory is the default working directory when a user logs in. On the other hand, working directory is the user's current directory.....

What is the difference between internal and external commands?

Answer - Internal commands are commands that are already loaded in the system. They can be executed any time and are independent.....

What is the file server in Linux server?

Answer - File server is used for file sharing. It enables the processes required for sharing.....

What is NFS? What is its purpose?

Answer - NFS is Network File system. It is a file system used for sharing of files over a network.....

What is Kernel? Explain the task it performs.

Answer - Kernel is used in UNIX like systems and is considered to be the heart of the operating system.....

What is Linux Shell? What is Shell Script?

Answer - Linux shell is a user interface used for executing the commands. Shell is a program the user.....

What are Pipes? Explain use of pipes.

Answer - A pipe is a chain of processes so that output of one process (stdout) is fed an input (stdin) to another.....

Explain trap command; shift Command, getopts command of linux.

Answer - Trap command: controls the action to be taken by the shell when a signal is received.

What Stateless Linux server? What feature it offers?

Answer - A stateless Linux server is a centralized server in which no state exists on the single workstations.

What does nslookup do? Explain its two modes.

Answer - Nslookup is used to find details related to a Domain name server. Details like IP addresses of a machine, MX records,.....

What is Bash Shell?

Answer - Bash is a free shell for UNIX. It is the default shell for most UNIX systems. It has a combination of the C and Korn shell features.

Explain some Network-Monitoring Tools in Linux: ping, traceroute, tcpdump, ntop

Answer - Network monitoring tools are used to monitor the network, systems present on the network, traffic etc.....

How does the linux file system work?

Answer - Linux file structure is a tree like structure. It starts from the root directory, represented by '/', and then expands into sub-directories.....

What are the process states in Linux?

Answer - Process states in Linux.....

What is a zombie?

Answer - Zombie is a process state when the child dies before the parent process. In this case the structural information of the process is still in the process table.....

Explain each system calls used for process management in linux.

Answer - System calls used for Process management.....

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