**Operating System Lab**

**(4ITRC2)**

**IT IV Semester**

*Submitted by*

**Kanishka Joshi**

**23I4141**

**Information Technology - B**

*Submitted to*

# MRS.JASNEET KAUR

Department of Information Technology

Institute of Engineering and Technology

Devi Ahilya Vishwavidyalaya, Indore (M.P.) India

[**(**www.iet.dauniv.ac.in**)**](http://www.iet.dauniv.ac.in/)

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**4ITRC2 Operating System Lab**

**Lab Assignment 2**

**Aim:** To study and understand Ubuntu Commands

**To perform:** Execute different Commands

To Submit:

Part1

Outputs of the following commands

1. **Pwd**

* **Output**: Prints the current working directory (full path).
* Example: /home/user/Documents

1. **cd**

* **Output**: Changes the current directory. If used without arguments, it takes you to the home directory.
* Example: No output, but changes the current directory.

1. **ls**

* **Output**: Lists files and directories in the current directory.
* Example: file1.txt file2.txt dir1/ dir2/

1. **mkdir**

* **Output**: Creates a new directory.
* Example: mkdir new\_folder
* No output if successful.

1. **rm**

* **Output**: Removes files or directories (with -r for directories).
* Example: rm file1.txt
* No output if successful, but it deletes the file.

1. **touch**

* **Output**: Creates an empty file or updates the timestamp of an existing file.
* Example: touch newfile.txt
* No output if successful.

1. **hostname**

* **Output**: Prints the hostname of the machine.
* Example: myhostname

1. **cat**

* **Output**: Concatenates and displays the content of a file.
* Example: cat file.txt
* Output: Displays the content of file.txt.

1. **chmod**

* **Output**: Changes the permissions of a file or directory.
* Example: chmod 755 file.txt
* No output, but it changes the file permissions.

1. **echo**

* **Output**: Prints a message or the value of a variable to the terminal.
* Example: echo "Hello, world!"
* Output: Hello, world!

1. **grep**

* **Output**: Searches for a pattern in a file and prints matching lines.
* Example: grep "search\_term" file.txt
* Output: Lines in file.txt that contain the "search\_term".

1. **fgrep**

* **Output**: Similar to grep, but it searches for fixed strings (does not interpret special characters like regex).
* Example: fgrep "search\_term" file.txt
* Output: Lines in file.txt containing the exact string "search\_term".

1. **mv**

* **Output**: Moves or renames files or directories.
* Example: mv file.txt new\_location/
* No output if successful, but moves the file to the new location.

1. **cp**

* **Output**: Copies files or directories.
* Example: cp file.txt newfile.txt
* No output if successful, but it copies file.txt to newfile.txt.

1. **more**

* **Output**: Displays the content of a file, one screen at a time.
* Example: more file.txt
* Output: Shows the file content, pausing at each screenful. You press q to quit.

1. **less**

* **Output**: Similar to more, but allows both forward and backward navigation.
* Example: less file.txt
* Output: Displays the content of file.txt, allowing scrolling up and down.

1. **wc**

* **Output**: Counts the lines, words, and characters in a file.
* Example: wc file.txt
* Output: 3 42 220 file.txt  
  (This means 3 lines, 42 words, and 220 characters in file.txt.)

1. **awk**

* **Output**: A powerful text processing tool for pattern scanning and processing.
* Example: awk '{print $1}' file.txt
* Output: Prints the first column of each line in file.txt.

1. **sed**

* **Output**: Stream editor used for modifying files (often for replacing text).
* Example: sed 's/old/new/g' file.txt
* Output: Displays the contents of file.txt with "old" replaced by "new".

1. **tail**

* **Output**: Displays the last 10 lines of a file by default.
* Example: tail file.txt
* Output: Last 10 lines of file.txt.

Part 2

Answers to the following Questions: (you need to supply commands)

1. **How to navigate to a Specific Directory?**
   * Command:  
     cd /path/to/directory
2. **How to see detailed information about files and directories using ls?**
   * Command:  
     ls -l
3. **How to create multiple directories in Linux using mkdir command?**
   * Command:  
     mkdir dir1 dir2 dir3
4. **How to remove multiple files at once with rm?**
   * Command:  
     rm file1.txt file2.txt file3.txt
5. **Can rm be used to delete directories?**
   * Yes, with the -r option.
   * Command:  
     rm -r directory\_name
6. **How Do You Copy Files and Directories in Linux?**
   * To copy files:  
     cp file1.txt /path/to/destination/
   * To copy directories:  
     cp -r dir1 /path/to/destination/
7. **How to Rename a file in Linux Using mv Command?**
   * Command:  
     mv oldname.txt newname.txt
8. **How to Move Multiple files in Linux Using mv Command?**
   * Command:  
     mv file1.txt file2.txt /path/to/destination/
9. **How to Create Multiple Empty Files by Using touch Command in Linux?**
   * Command:  
     touch file1.txt file2.txt file3.txt
10. **How to View the Content of Multiple Files in Linux?**
    * Command:  
      cat file1.txt file2.txt file3.txt
11. **How to Create a file and add content in Linux Using cat Command?**
    * Command:  
      cat > newfile.txt
    * Type your content and press Ctrl+D to save.
12. **How to Append the Contents of One File to the End of Another File using cat command?**
    * Command:  
      cat file1.txt >> file2.txt
13. **How to use cat command if the file has a lot of content and can’t fit in the terminal?**
    * Command:  
      cat file.txt | less
14. **How to Merge Contents of Multiple Files Using cat Command?**
    * Command:  
      cat file1.txt file2.txt > mergedfile.txt
15. **How to use cat Command to Append to an Existing File?**
    * Command:  
      cat >> existingfile.txt
    * Type your content and press Ctrl+D to save.
16. **What is chmod 777, chmod 755 and chmod +x or chmod a+x?**
    * chmod 777: Read, write, and execute permissions for everyone.
    * chmod 755: Read, write, and execute for the owner, read and execute for others.
    * chmod +x: Adds execute permission for all users.
    * chmod a+x: Adds execute permission for all users (owner, group, others).
17. **How to find the number of lines that match the given string/pattern?**
    * Command:  
      grep -c "pattern" file.txt
18. **How to display the files that contain the given string/pattern?**
    * Command:  
      grep -l "pattern" \*
19. **How to show the line number of a file with the line matched?**
    * Command:  
      grep -n "pattern" file.txt
20. **How to match the lines that start with a string using grep?**
    * Command:  
      grep "^pattern" file.txt
21. **Can the sort command be used to sort files in descending order by default?**
    * No, it sorts in ascending order by default. To sort in descending order:
    * Command:  
      sort -r file.txt
22. **How can I sort a file based on a specific column using the sort command?**
    * Command:  
      sort -k 2 file.txt
    * (This sorts by the second column. Change 2 to any column number you need.)