



# W8 A1 solution

🕒 Created	@January 26, 2025 5:14 PM
📁 Class	RoboDive

## TASK 1

**LEVEL-0 :** bandit0

**LEVEL-1 :** ZjLjTmM6FvvyRnrb2rfNWOZOTa6ip5lf

**LEVEL-2 :** 263JGJPfgU6LtdEvgfWU1XP5yac29mFx

{an important factor here is "-" comes under the category of STDIN/STDOUT like | so we have to write the entire file path for ti to work properly again.}

**LEVEL-3 :** MNk8KNH3Usiio41PRUEoDFPqfxLPISmx

All you have to do is use /\*

**LEVEL-4:** 2WmrDFRmJlq3IPxneAaMGhap0pFhF3NJ

Significantly tougher had to use ls -a to find the name of the hidden file and then use cat and the file name to open it.

**LEVEL-5 :** 4oQYVPkxZOOEOO5pTW81FB8j8lxXGUQw

## TASK 2

### PART 1

```

File Edit View Search Terminal Help
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~$ mkdir LinuxLearning
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~$ cd LinuxLearning
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ mkdir projects notes backup
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ echo "This is the first time I am trying out LINUX">todo.txt
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ echo "Now I am realising it is pretty cool">>todo.txt
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ echo "And all though I miss the easiness of Windows, LINUX does have its benefits">>todo.txt
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ mv todo.txt notes
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ echo "Takneek robotics was the first project I worked on after coming to IITK">project_list.txt
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ echo "The obstacle avoiding bot had its own share of issues tbh.">>project_list.txt
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ echo "and pre-Takneek,RobodiveAssgtnments,Robothon and the offline projects keeps goin">>project_list.txt
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ mv project_list.txt projects
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ echo "The First line for backup"> system_log.txt
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ echo "The Second Line for backup">> system_log.txt
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ echo "The Third Line for backup">> system_log.txt
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ mv system_log.txt backup
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ pwd
/home/adithya-vishnu/LinuxLearning

```

## PART 2

```

adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ cd notes/todo.txt backup
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ mv projects/project_list.txt projects/active_projects.txt
mv: cannot move 'projects/project_list.txt' to 'projects/active_projects.txt': No such file or directory
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ mv projects/project_list.txt projects/active_projects.txt
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ mv backup/system_log.txt .
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ echo "">empty.txt
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ rm empty.txt
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ pwd
/home/adithya-vishnu/LinuxLearning

```

## PART 3

```

/home/adithya-vishnu/LinuxLearning
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ cat /home/adithya-vishnu/LinuxLearning/projects/active_projects.txt
Takneek robotics was the first project I worked on after coming to IITK
The obstacle avoiding bot had its own share of issues tbh.
and pre-Takneek,RobodiveAssgtnments,Robothon and the offline projects keeps goin
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ cat /home/adithya-vishnu/LinuxLearning/notes/todo.txt
This is the first time I am trying out LINUX
Now I am realising it is pretty cool
And all though I miss the easiness of Windows, LINUX does have its benefits
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ cat /home/adithya-vishnu/LinuxLearning/backup.txt
cat: /home/adithya-vishnu/LinuxLearning/backup.txt: No such file or directory
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ cat /home/adithya-vishnu/LinuxLearning/system_log.txt
The First line for backup
The Second Line for backup
The Third Line for backup
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ wc /home/adithya-vishnu/LinuxLearning/projects/active_projects.txt
  3 32 212 /home/adithya-vishnu/LinuxLearning/projects/active_projects.txt
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ wc /home/adithya-vishnu/LinuxLearning/notes/todo.txt
  3 32 158 /home/adithya-vishnu/LinuxLearning/notes/todo.txt
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ wc /home/adithya-vishnu/LinuxLearning/system_log.txt
  3 15 80 /home/adithya-vishnu/LinuxLearning/system_log.txt
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ grep Takneek /home/adithya-vishnu/LinuxLearning/projects/active_projects.txt
Takneek robotics was the first project I worked on after coming to IITK
and pre-Takneek,RobodiveAssgtnments,Robothon and the offline projects keeps goin
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ grep LINUX /home/adithya-vishnu/LinuxLearning/notes/todo.txt
This is the first time I am trying out LINUX
And all though I miss the easiness of Windows, LINUX does have its benefits
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ grep backup /home/adithya-vishnu/LinuxLearning/system_log.txt
The First line for backup
The Second Line for backup
The Third Line for backup

```

```

adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ sort Takneek /home/adithya-vishnu/LinuxLearning/projects/active_projects.txt
sort: cannot read 'Takneek: No such file or directory
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ sort /home/adithya-vishnu/LinuxLearning/projects/active_projects.txt
and pre-Takneek,RobodiveAssgtnments,Robothon and the offline projects keeps goin
Takneek robotics was the first project I worked on after coming to IITK
The obstacle avoiding bot had its own share of issues tbh.
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ grep -r /home/adithya-vishnu/LinuxLearning/notes/todo.txt
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ sort -r /home/adithya-vishnu/LinuxLearning/notes/todo.txt
This is the first time I am trying out LINUX
Now I am realising it is pretty cool
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adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ sort /home/adithya-vishnu/LinuxLearning/projects/active_projects.txt
and pre-Takneek,RobodiveAssgtnments,Robothon and the offline projects keeps goin
Takneek robotics was the first project I worked on after coming to IITK
The obstacle avoiding bot had its own share of issues tbh.
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ sort /home/adithya-vishnu/LinuxLearning/system_log.txt
The First line for backup
The Second Line for backup
The Third Line for backup

```

## PART 4

```
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ ls -l
total 16
drwxrwxr-x 2 adithya-vishnu adithya-vishnu 4096 Jan 26 19:23 backup
drwxrwxr-x 2 adithya-vishnu adithya-vishnu 4096 Jan 26 19:12 notes
drwxrwxr-x 2 adithya-vishnu adithya-vishnu 4096 Jan 26 19:23 projects
-rw-rw-r-- 1 adithya-vishnu adithya-vishnu 80 Jan 26 19:14 system_log.txt
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ chmod r=u system_log.txt
chmod: invalid mode: 'r=u'
Try 'chmod --help' for more information.
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ chmod u=r system_log.txt
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ chmod go-rwx system_log.txt
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ ls -l system_log.txt
-r----- 1 adithya-vishnu adithya-vishnu 80 Jan 26 19:14 system_log.txt
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ chown unnamed system_log.txt
chown: invalid user: 'unnamed'
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ chown adithya-vishnu system_log.txt
```

## PART 5

```
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ whoami
adithya-vishnu
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ uname
Linux
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ df
Filesystem      1K-blocks      Used Available Use% Mounted on
tmpfs            3247564       2732    3244832   1% /run
/dev/nvme0n1p10 97228924 12635380  79680764  14% /
tmpfs            16237888    285380    15952428   2% /dev/shm
tmpfs            5120         12        5108      1% /run/lock
efivarfs         192          145        43       78% /sys/firmware/efi/efivars
/dev/nvme0n1p9   965872      119704    779764    14% /boot
/dev/nvme0n1p1   262144      38232    223912    15% /boot/efi
tmpfs            3247560      156    3247404   1% /run/user/1000
adithya-vishnu@adithya-vishnu-ASUS-TUF-Gaming-F15-FX507VI-FX507VI:~/LinuxLearning$ ps
  PID TTY          TIME CMD
 75190 pts/3      00:00:00 bash
 92546 pts/3      00:00:00 ps
```

## Test to go into the readme.md file

### PART-1

In part-1 we use the mkdir function to create a parent directory "LinuxLearning" and after using cd to change the directories to 'LinuxLearning' we use mkdir again to create three new sub directories.

next we use the command of the format echo "text to be entered" > filename. to create three new files. and similarly after using the first line to create the files we use the following variation to append two more lines to each file. echo "text to be entered" >> filename

and since in the question its specified that these files should be inside the respective sub directories we use the mv function to do this .

### PART-2

For this we use the command cp in teh format

```
cp [filename] [directory location]
```

mv is also used to move the file. and an important thing to keep in mind is that '.' can be used to specify the current directory which is open.

The rm command is used to remove any file required and rmdir is used to delete 'empty' directories and rm -r is a powerful tool used to delete any file or directory irrespective of whether it is empty or not.

And pwd is used to find the location of the currently open directory or location

## PART-3

The cat command which stands for concatenate is used here, which displays the contents of the files. The cat command is used in the format cat [filename/location]. This is done for the three files. If the file size is too large we can also use the less pager option to view it page by page.

The wc command is used to output the word or line count of a file. the wc -l can be used to give the number of lines in the file. This is done for the three files.

grep command is used to find a specific word or character in the file. format is grep [object to be found][filename] and the lines with the word are returned with highlighted word.

sort command is used to sort the text file. The sorting can also be done in reverse using the sort -r command. Sorting is mainly used in places where the uniq function is to be used where it is required that the repeated lines be adjacent to each other so this can be used there too.

## PART-4

The ls -l can be used in a directory to give the file permissions of each content in the directory or we could use it as ls -l [filename] which would give the permissions of the specified file name only. in the output if it begins with '-' it means it is just a normal file, -rw means read and write allowed, user-owner, group-whatever the group is.

chmod function is used to change the rights of the file. this can be done in two methods using

```
chmod 400 [filename]
```

or

```
chmod u=r [filename]
```

`chmod go-rwx [filename]`

chown: command is used to change the ownership of the file or directory

format: `chown [new owner] [filename]`

## **PART-5**

whoami - outputs the current users name

uname - outputs the unix system's name here LINUX

df - prints the approximate disk space

ps - lists the current running processes.

## **Commands used**

mkdir

cd

echo

cp

mv

rm

pwd

cat

wc

grep

sort

ls -l

chmod

chown

whoami

uname

df

ps

## TASK-3

```
#!/bin/bash

# Set the Downloads directory (Modify if needed)
DOWNLOADS_DIR="$HOME/Downloads"

# Create necessary folders
mkdir -p "$DOWNLOADS_DIR/Images"
mkdir -p "$DOWNLOADS_DIR/Documents"
mkdir -p "$DOWNLOADS_DIR/Videos"
mkdir -p "$DOWNLOADS_DIR/Zip"
mkdir -p "$DOWNLOADS_DIR/Others"

# Move files into appropriate folders
for file in "$DOWNLOADS_DIR"/*; do
    # Skip directories
    [[ -d "$file" ]] && continue

    # Get file extension
    ext="${file##*.}"
    ext="${ext,,}"

    case "$ext" in
        jpg|jpeg|png|gif|bmp|svg|webp)
            mv "$file" "$DOWNLOADS_DIR/Images/" ;;
        pdf|docx|doc|xls|xlsx|ppt|pptx|txt)
            mv "$file" "$DOWNLOADS_DIR/Documents/" ;;
        mp4|mov|avi|mkv|flv|wmv)
            mv "$file" "$DOWNLOADS_DIR/Videos/" ;;
    esac
done
```

```
        mv "$file" "$DOWNLOADS_DIR/Videos/" ;;
    zip|tar|gz|bz2|rar)
        mv "$file" "$DOWNLOADS_DIR/Zip/" ;;
    *)
        mv "$file" "$DOWNLOADS_DIR/Others/" ;;
esac

done

echo "Downloads folder organized successfully!"
```