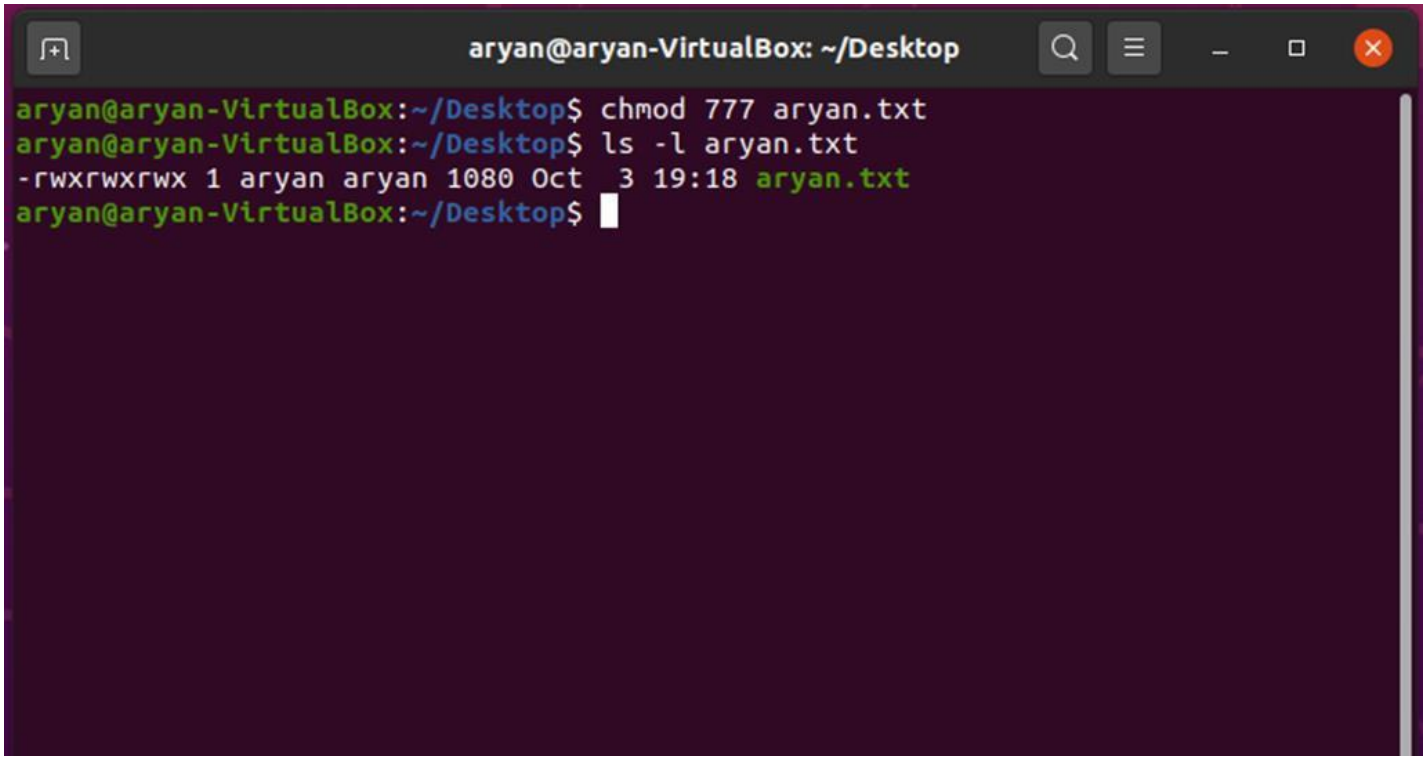
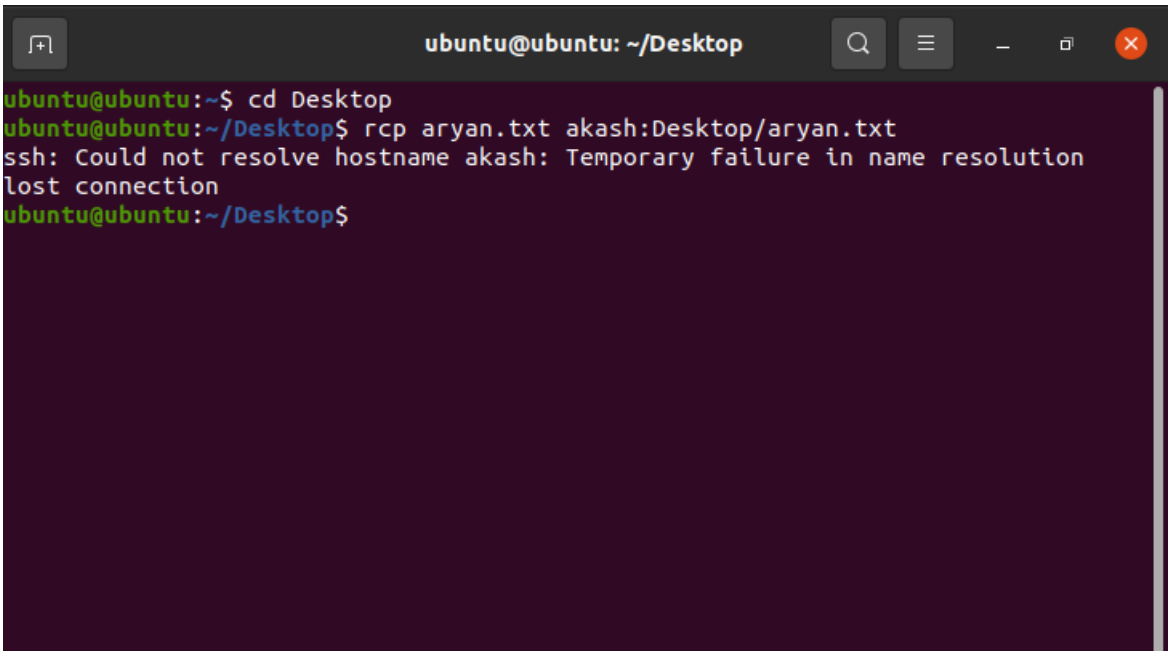
Q1. (a) Run the following commands and write/show output

- **chmod**



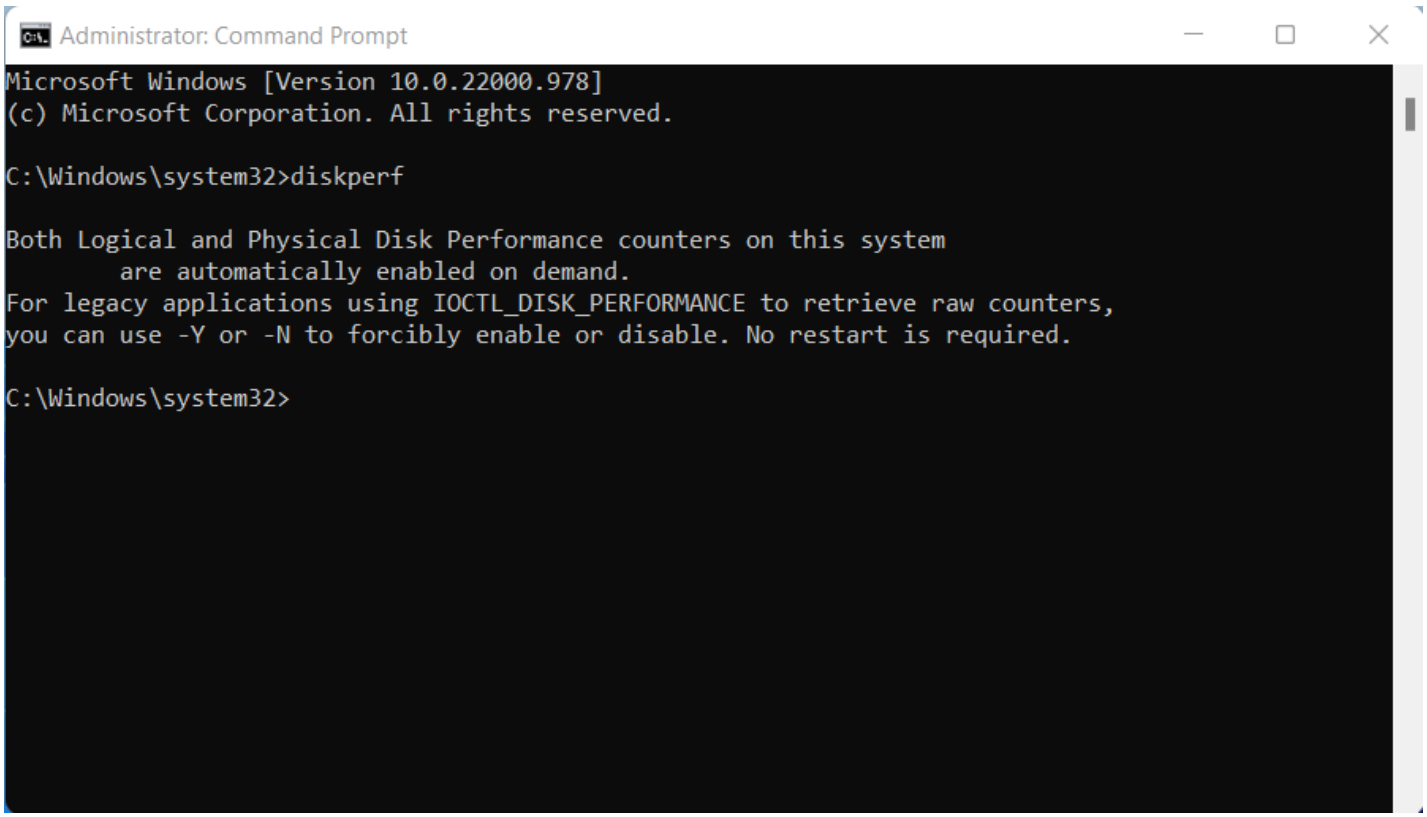
- **rcp**

The rcp command copies files or directories between a local and a remote system or between two remote systems.

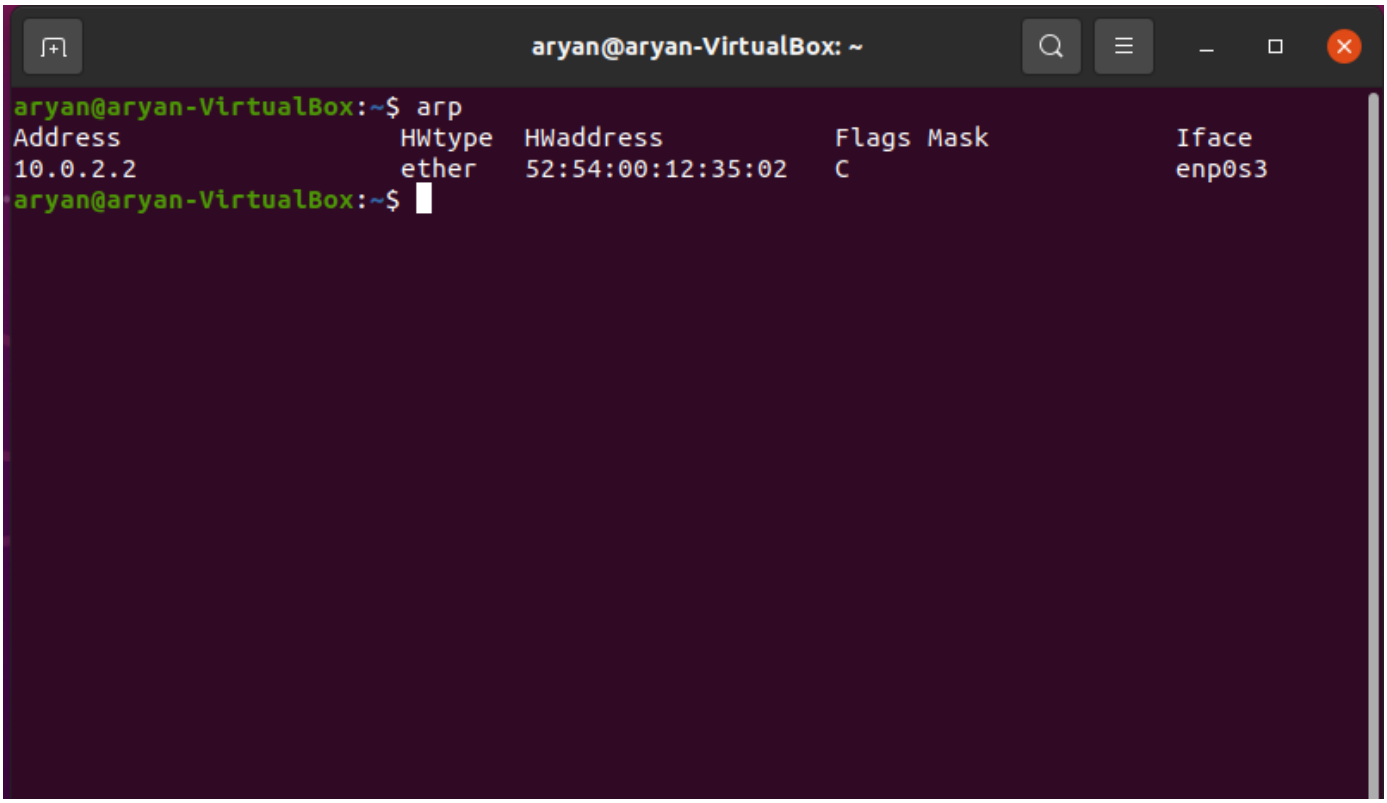


This command copies the file aryan.txt from the local path /Desktop to the remote system named akash, placing it in the directory desktop.

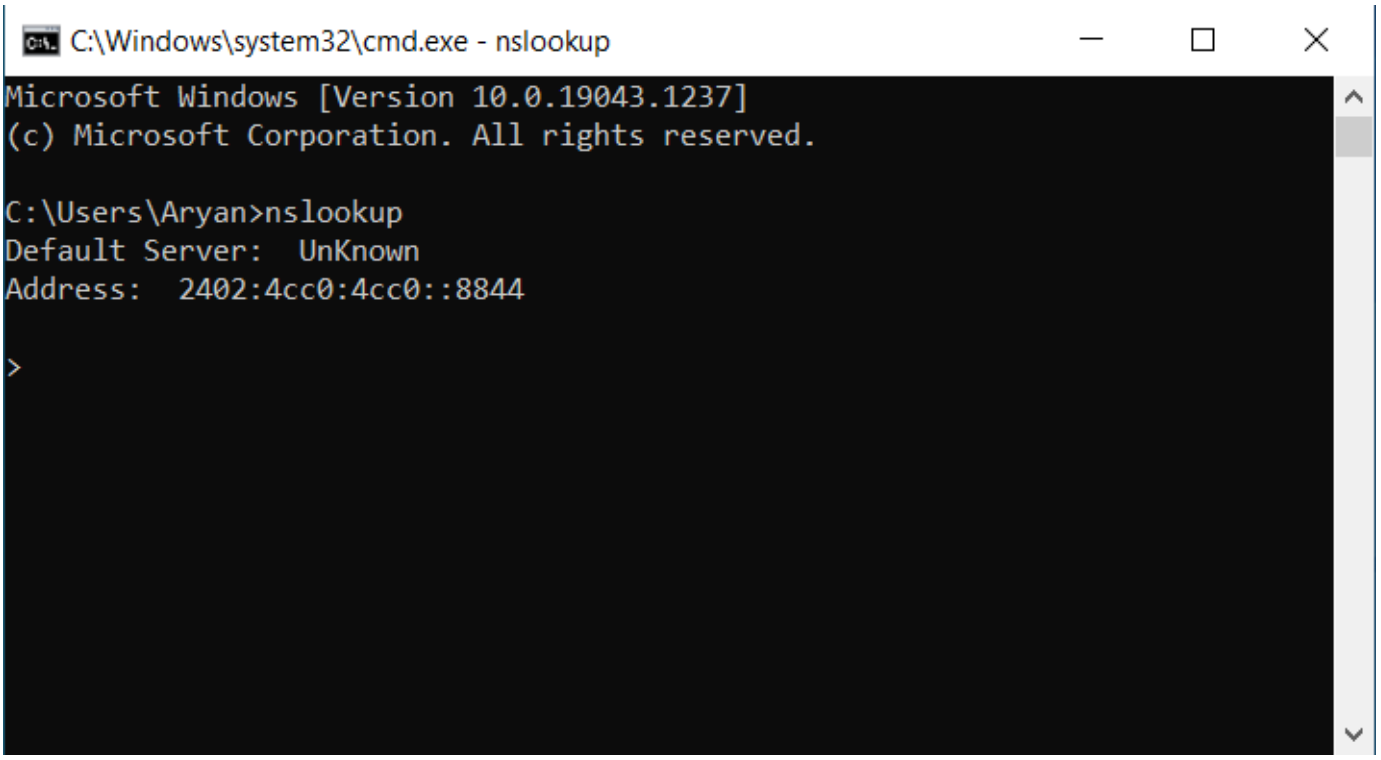
- **diskperf**



- **arp**



- **nslookup**



(b) Explore the following directories and write its contents:

(i) /bin

It contains binary or executable programs

(ii) /usr/bin

User related Files. It contains most of the executable files.

(iii) /sbn

It contains commands for Super User, for System Administration.

(iv) /tmp

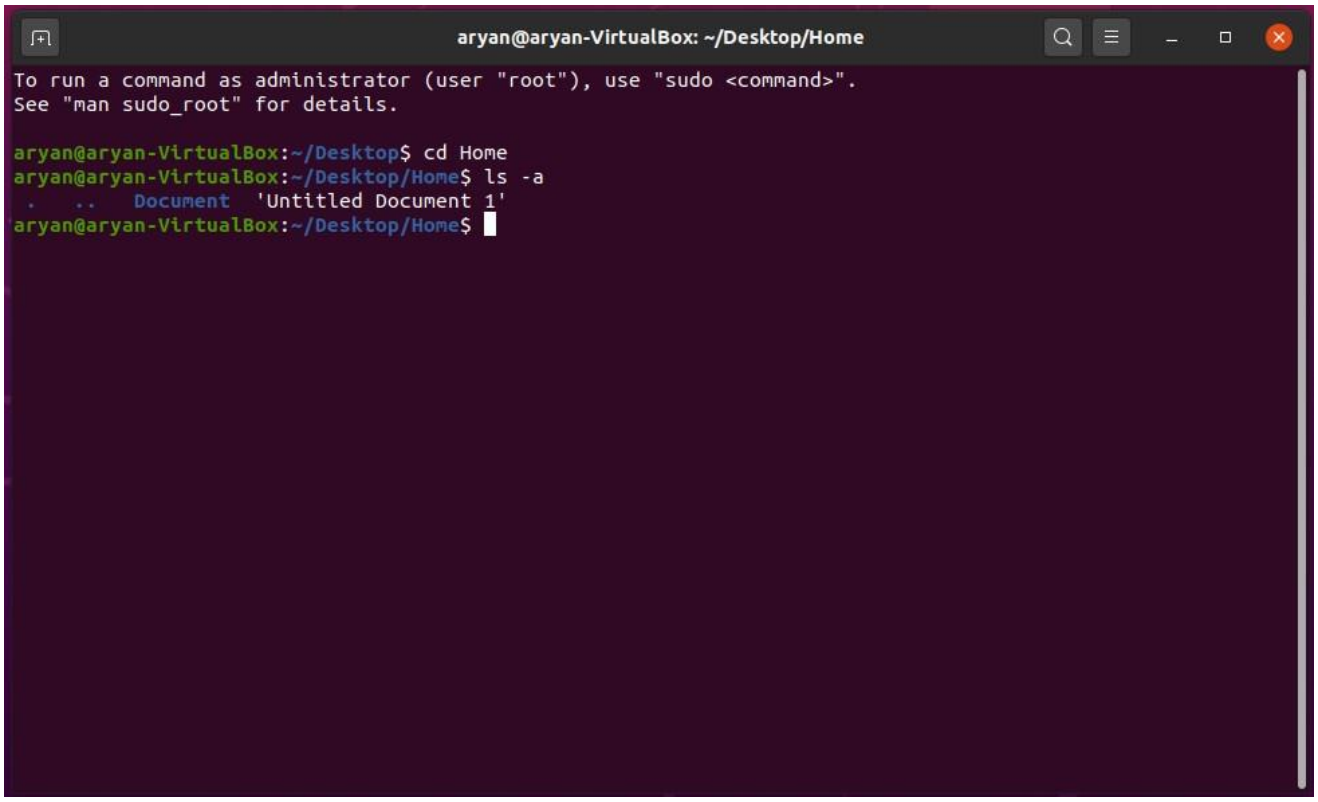
Temporary space, typically cleared on reboot.

(v) /boot

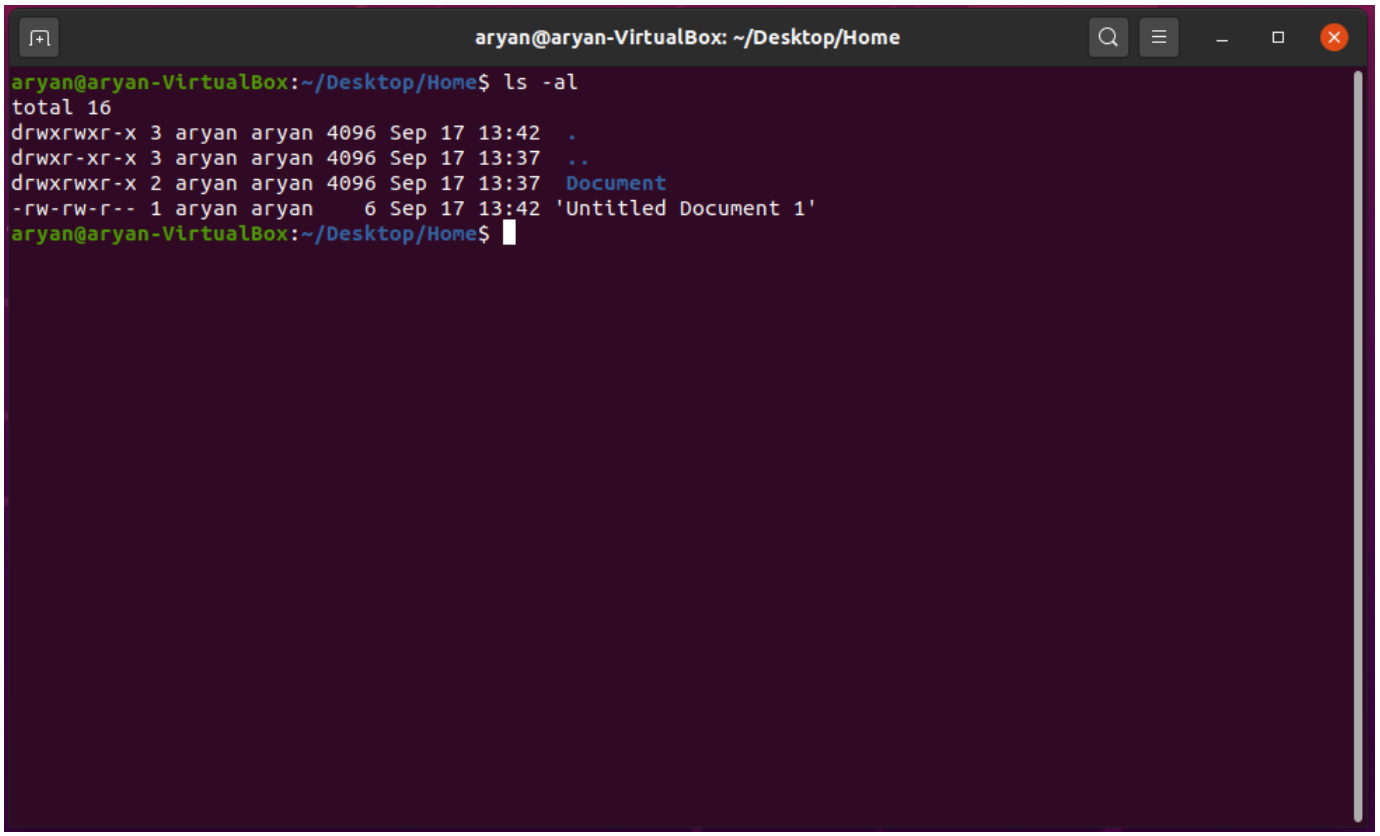
It contains all the boot-related information files and folders such as conf, grub, etc.

(c) Answer the following questions:

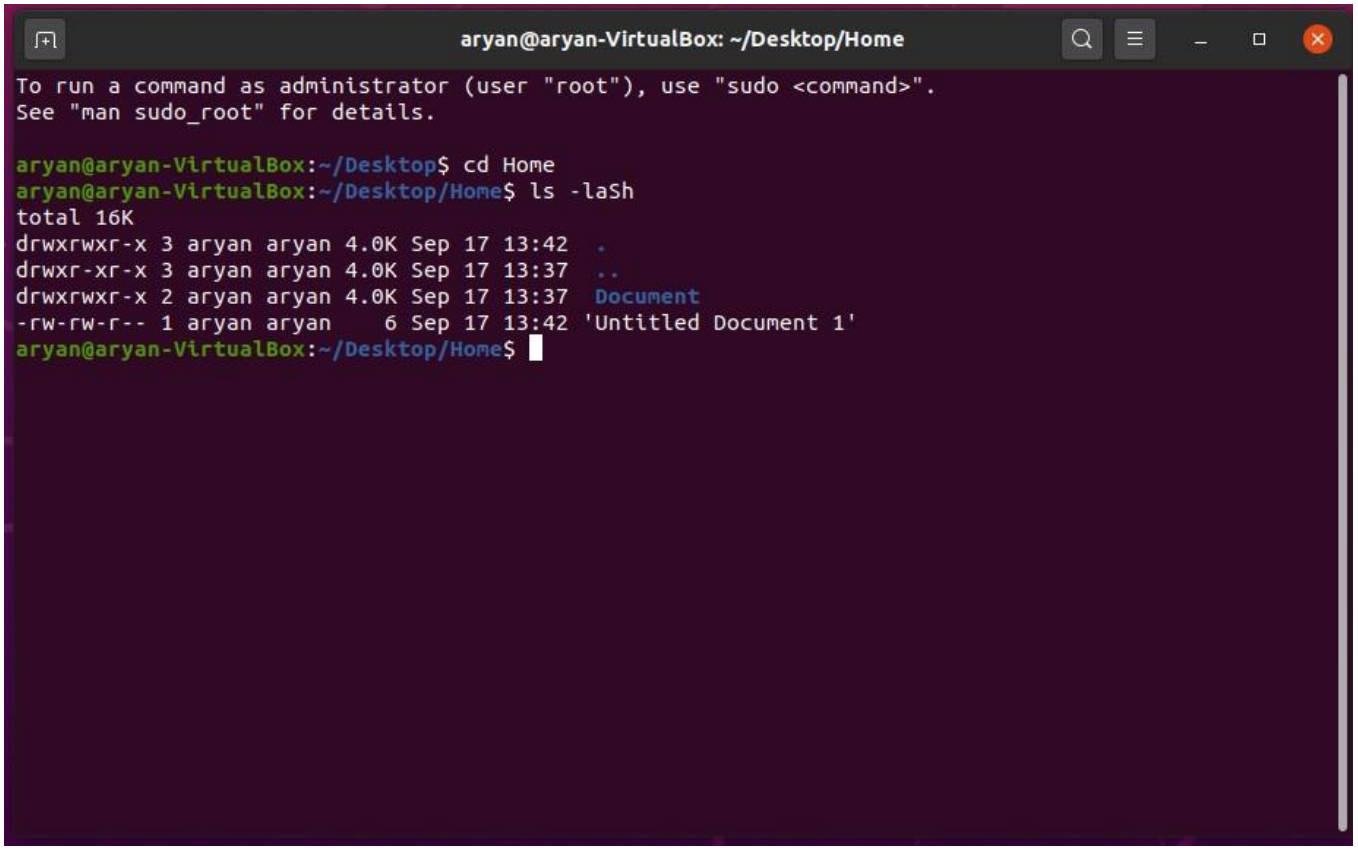
- **List all the files within a directory including hidden files**



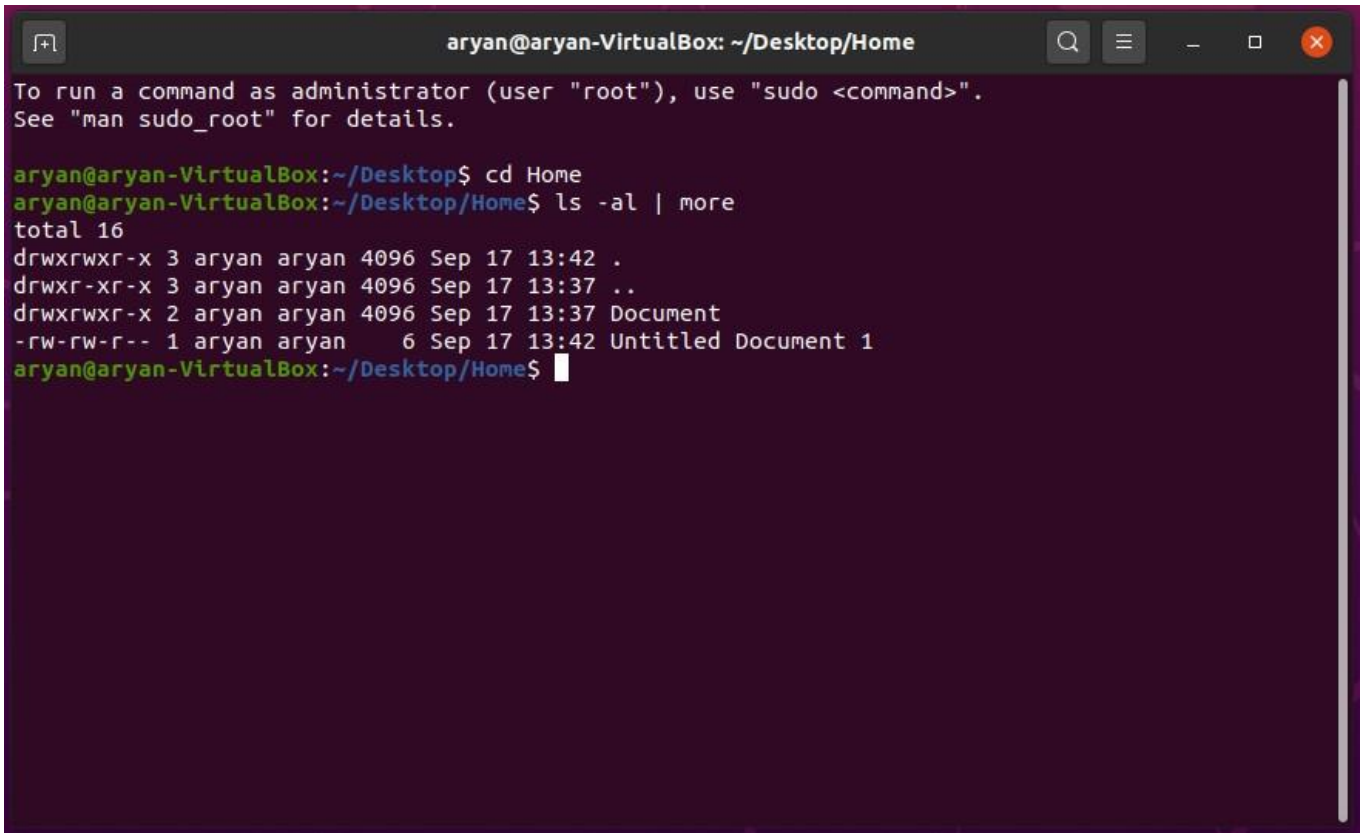
- **Which command is used to show files or directory, size, modified date and time, file permission etc.**



- **Sort file or directory by file size**



- **What is the output of: ls-al | more?**



- **How to kill a process?**

Ans: Step 1: View Running Linux Processes

The top command is the easiest way to get a complete overview of the processes currently being run.

To view a list of all currently running processes, use the command:

Step 2: Locate the Process to Kill

Before you can kill a process, you need to find it. There are multiple ways you can search for a process in Linux. Processes can either be located by a process name (or a partial process name) or a process ID (also known as a “pid”).

Locate a Process with ps Command

The ps command displays similar information to top, though it will not be in the form of an interface. Instead, the ps command provides a complete listing of running processes, formatted based on the tags you add.

Step 3: Use Kill Command Options to Terminate a Process

killall Command

The killall command is used to kill processes by name. By default, it will send a SIGTERM signal. The killall command can kill multiple processes with a single command.

Q2. (a) Write a shell script to check a proper utilization of disk space and send an email to the user currently logged in.

Ans:

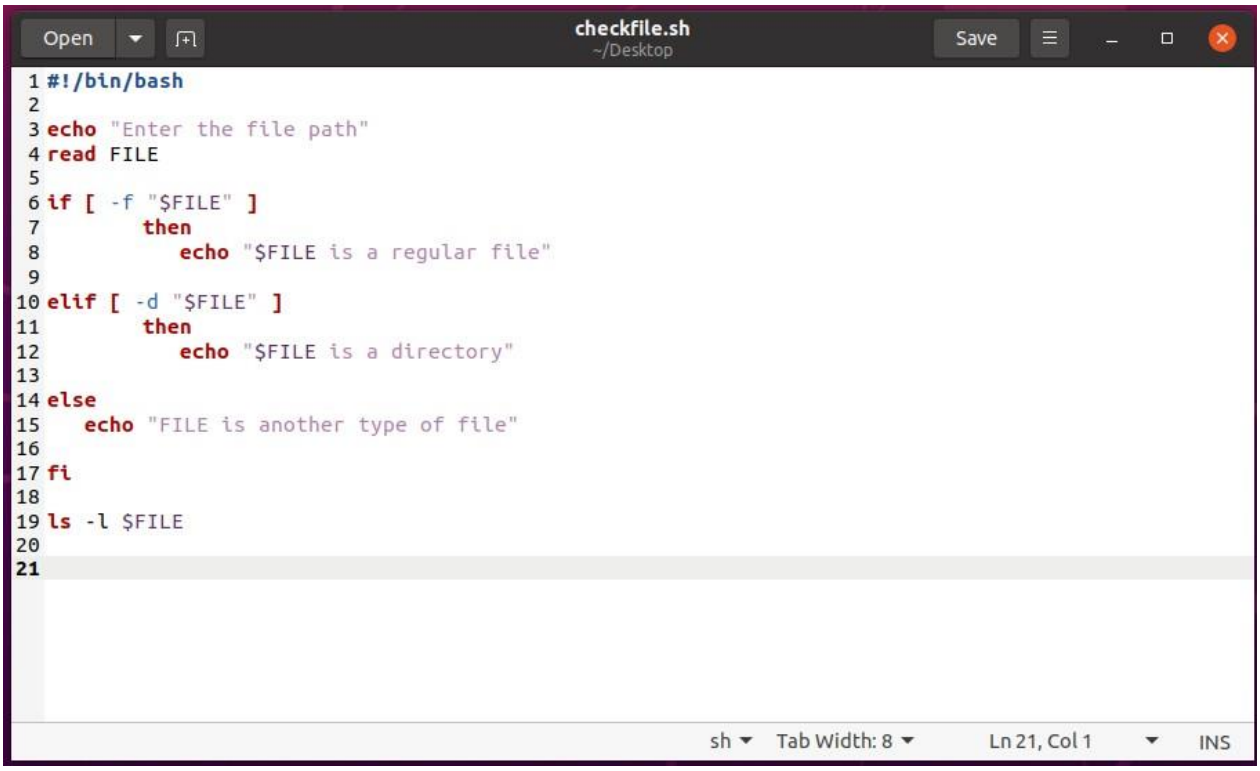
Open diskspace.sh Save

```
#!/bin/sh
# set -x
# Shell script to monitor or watch the disk space
# It will send an email to $ADMIN, if the (free available) percentage of space is >= 90%.
# ---------------------------------------------------------------------------
# Set admin email so that you can get email.
ADMIN="root"
# set alert level 90% is default
ALERT=90
# Exclude list of unwanted monitoring, if several partions then use "|" to separate the
partitions.
# An example: EXCLUDE_LIST="/dev/hdd1|/dev/hdc5"
EXCLUDE_LIST="/auto/ripper|loop"
#
#::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
#
main_prog() {
while read -r output;
do
  #echo "Working on $output ..."
  usep=$(echo "$output" | awk '{ print $1}' | cut -d'%' -f1)
  partition=$(echo "$output" | awk '{print $2}')
  if [ $usep -ge $ALERT ] ; then
     echo "Running out of space \"$partition ($usep%)\" on server $(hostname), $(date)" | \
     echo mail -s "Alert: Almost out of disk space $usep% on $partition" $ADMIN
  fi
done
}
```

sh Tab Width: 8 Ln 1, Col 1 INS

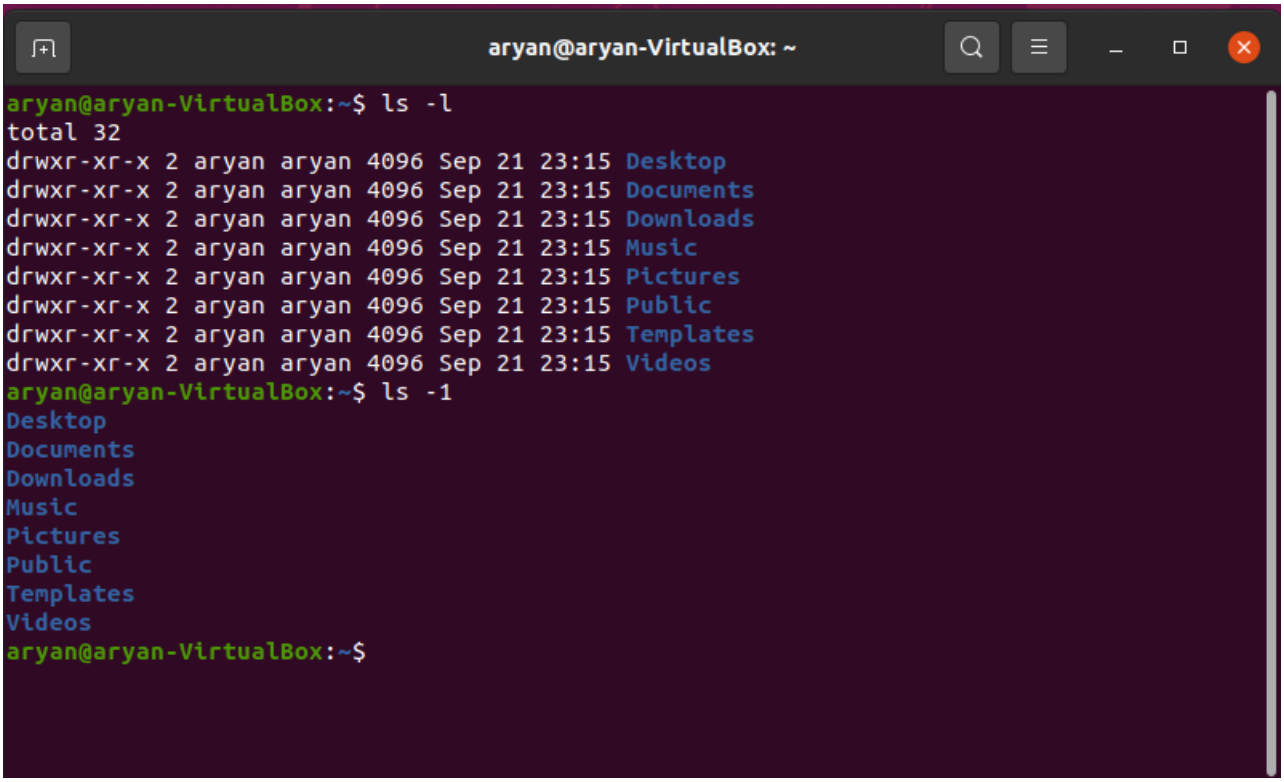
(b) (i) write a shell script that prompts the user for a name of a file or directory and reports what type of this file is : regular file, a directory, or another type of file.

Ans:



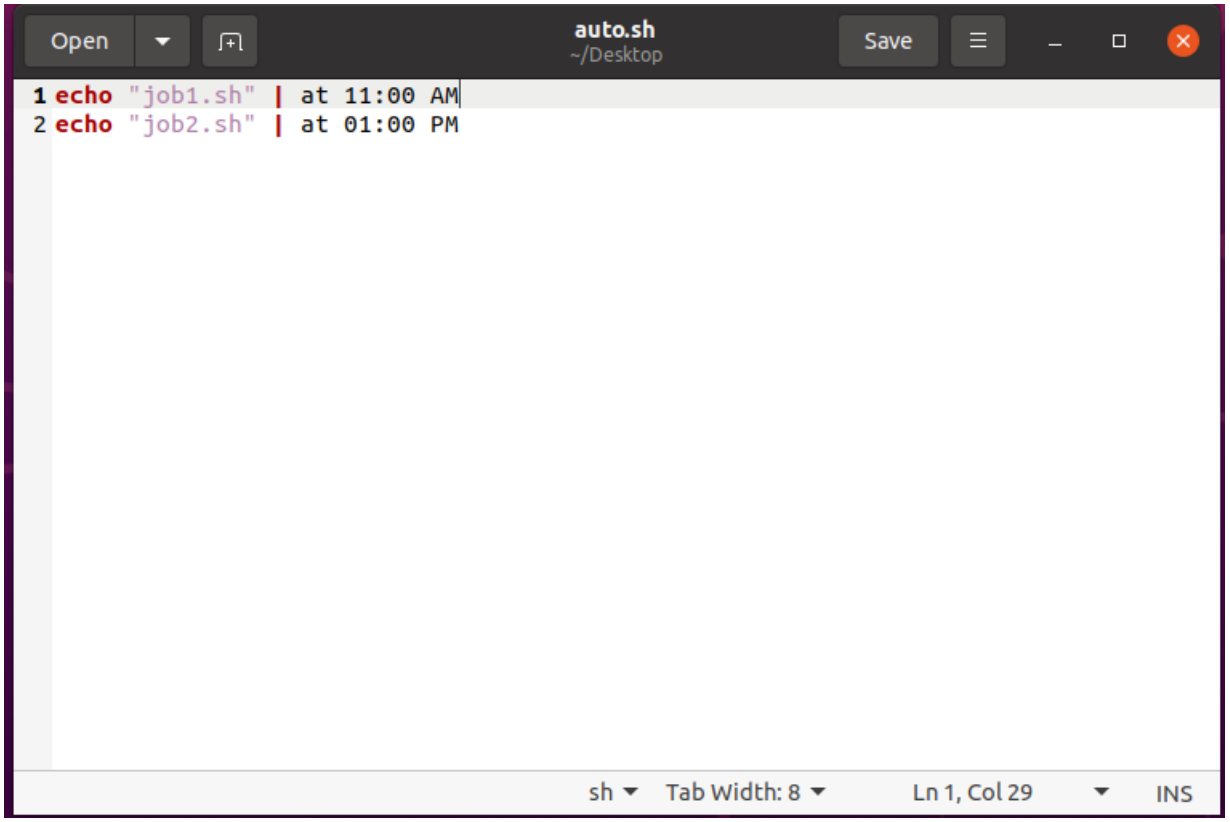
(ii) Execute an ls command against the file or directory with any two options you are aware of.

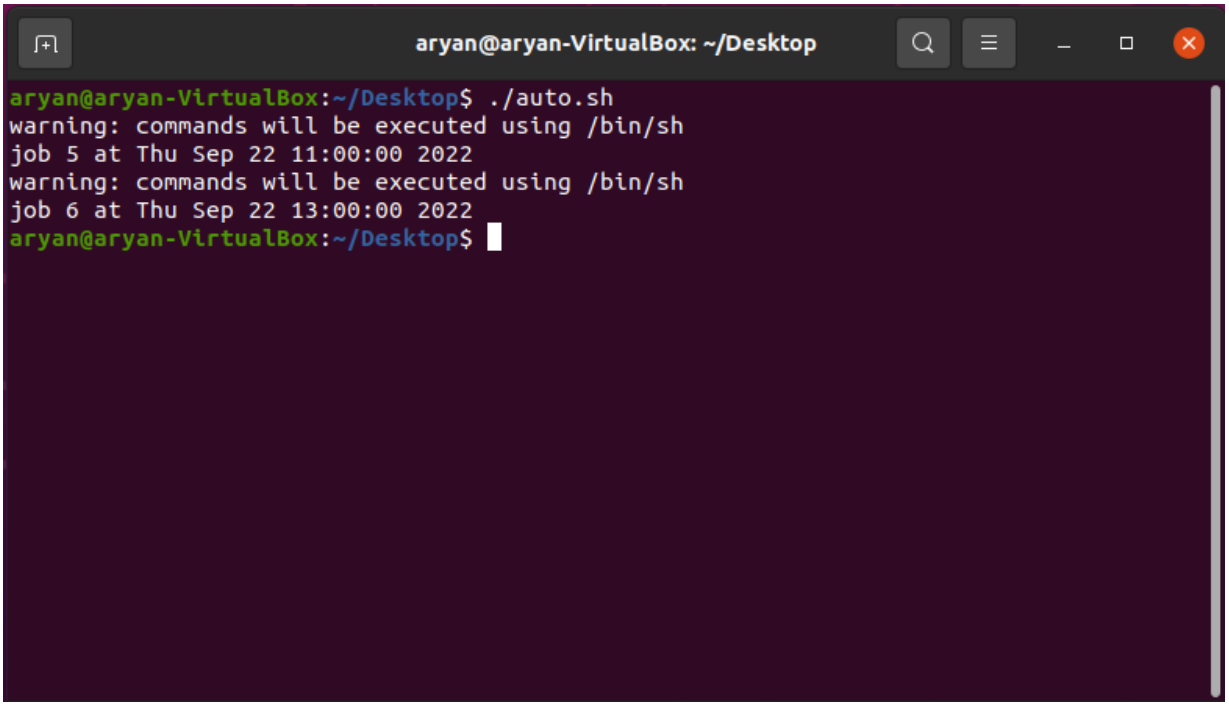
Ans:



Q3. Perform the following tasks:

(a) Set the execution time of two jobs so that it can run automatically tomorrow one at 11:00 a.m. and another at 1:00 p.m. After this setting, how can you change the time of execution of the job?





(b) Add different user's and groups. Also configure their permissions.

Ans: To create a new User, please follow these steps:

1. Log into your server through Terminal Services or Remote Desktop Connection.
2. Open Computer Management using either method below:
    - Right-click on the My Computer Icon and select Manage.
    - Click Start, Programs, Administrative Tools, and Computer Management.
3. Expand Local Users and Groups.
4. Click on Users. In the right window you will see a list of the current users on the server.
5. Right-click Users and select New User.
6. Enter the following information:
    - User Name (required): all usernames must be unique.
    - Full Name (optional): the full name of the user
    - Description (optional): a description of the user
    - Password (required): we strongly recommend you use at least 6 characters and mixture of uppercase letters, lowercase letters and numbers for your passwords. For example, ft5yH7.
    - Confirm Password (required): this entry must be identical to the Password field.
7. Set the options that suit your needs:
    - **User must change password at next login:** if checked, the user must change their password the next time they login. We recommend you uncheck this so that you have full control over the password.
    - **User cannot change password:** if the first option is unchecked you will be able to set this option. We recommend you check this option so that only the administrator of the machine can modify the users password.
    - **Password never expires:** controls if the password will expire 30 days. Once the password expires you will need to reset it manually.
    - **Account is disabled:** when checked, the User will no longer be valid.
8. Click Create to add the new user.

To add a user to the Administrators group, please follow these steps:

1. Right-click the username and select Properties.
2. Select the Members Of Tab. You will see a list of groups the User is assigned to.
3. Click Add.

4. Type in the name of the group, Administrators.
5. Click OK. You will now see the Administrators group in the list.
6. Click OK.

To set permissions on Windows 2000:

1. Select Start > Settings > Control Panel to open the Control Panel.
2. In the Control Panel, open Administrative Tools.
3. In Administrative Tools, open Local Security Policy.
4. Expand the tree for Local Policies, and then select User Rights Assignment.
5. Select and right-click the required user right to display a pop-up menu. From the pop-up menu, select Security. The following is an example of the window that is opened for the Act as part of the operating system user right.

   To add permissions:

   - Click Add. The Select Users or Groups window appears.
     In the Select Users or Groups window, type the user ID (that requires this permission) in the form:
   - domain\userid

6. Click OK.
   When you are finished adding permissions, restart the machine so that the updates will take effect.

(c) Share any folder available in your directory. Also configure its share permissions for different users.

Ans: Shared Folder with Access Control

Once you create the user account on your computer, create a shared folder. Add the created account to the shared folder as a user who is permitted to access that folder. Set access permissions so that the user can that folder as well.

1. Set a shared folder.

- Create a new shared folder in any drive.
- Right-click the created folder.
- Select [Sharing] to open the [<Folder name> Properties] dialog box.
- Select [Share this folder].

2. Set the network-level access permission

- In the [Sharing] sheet, click the [Permissions] button to open the [Permissions for <Folder Name>].
- Click [Add...] to open the [Select Users or Groups] dialog box.
- Type [Computer Name]\[User Name] in [Enter the object names to select].
- Click [Check Names]. Make sure that the correct object name is typed.
- Click [OK] to close the [Select Users or Groups] dialog box.
- In the [Permissions for <Folder name>], under [Group or user names], select the user whom you want to grant permission. Select the [Full Control] box under [Allow].
- Click [OK] to close the [Permissions for <Folder Name>] dialog box.
- If the [Security] tab is displayed in the [<Folder name> Properties], proceed to Step 3 to set the local-level access permission. If not, proceed to Step 4.

3. Set the local-level access permission.

If the drive to which the shared folder is set is formatted in NTFS, you need to set the local-level as well as the network-level access permissions.

- In the [<Folder name> Properties], click the [Security] tab.
- Click [Add...] to open the [Select Users or Groups] dialog box.
- Type [Computer Name]\[User Name] in [Enter the object names to select]
- Click [Check Names]. Make sure that the correct object name is typed.
- Click [OK] to close the [Select Users or Groups] dialog box.
- In the [Security] sheet, under [Name], select the user whom you want to grant permission. Select the [Full Control] box under [Allow].

4. Click [OK] to close the [<Folder name> Properties] dialog box.

(d) Configure the DHCP Server Service.

Ans: Configuring DHCP server:

After you install a DHCP server, go to Start | Programs | Administrative Tools | DHCP to open the Windows 2000 console for managing the DHCP service.

When setting up a DHCP server, the first thing you have to do is define a scope. A scope is a list of valid IP addresses you want the DHCP server to be able to assign to clients. When a machine requests TCP/IP information from the DHCP server, the information is provided from the scope you created.

To define a scope using the Create Scope Wizard:

1. From the Action menu, select New Scope to launch the Create Scope Wizard, and then click Next.
2. Type a name and description of your scope and click Next.
3. Enter the start and end IP addresses of your scope. Remember to also assign the appropriate subnet mask as well. Click Next.
4. This window is where you specify all of your static IP addresses to exclude from your scope. Add any exclusions and click Next.
5. Enter the amount of time the lease is active and click Next.
6. The next screen asks you whether you want to configure your DHCP options now or later. For this article, we will select Yes, I Want To Configure These Options Now and click Next.
7. Enter your domain name and add the IP addresses for your DNS servers as shown in.
8. Enter the addresses of any WINS servers you configured on your network for resolving NetBIOS names into IP addresses.
9. Choose Yes or No to indicate whether to activate your scope. There is still more work to be done, so we will choose No.
10. Click Finish.

Adding reservations

In addition to specifying exclusions, you can add reservations to your DHCP server. By adding a reservation, you ensure that a machine always receives the same IP address from the DHCP server.

To add a reservation:

1. From the DHCP console, click the + sign next to the scope you created.
2. Click Reservations and select Action | New Reservation.
3. Enter a friendly name for the reservation and the IP address you want to assign to the computer or device.

4. Enter the MAC address of the computer or device. (For Windows NT/2000 machines, you can find the MAC address by running ipconfig/all from the command prompt of the machine.)
5. Enter a description and then choose the following reservation type: DHCP, BOOTP (going across a router), or both. Click Add.

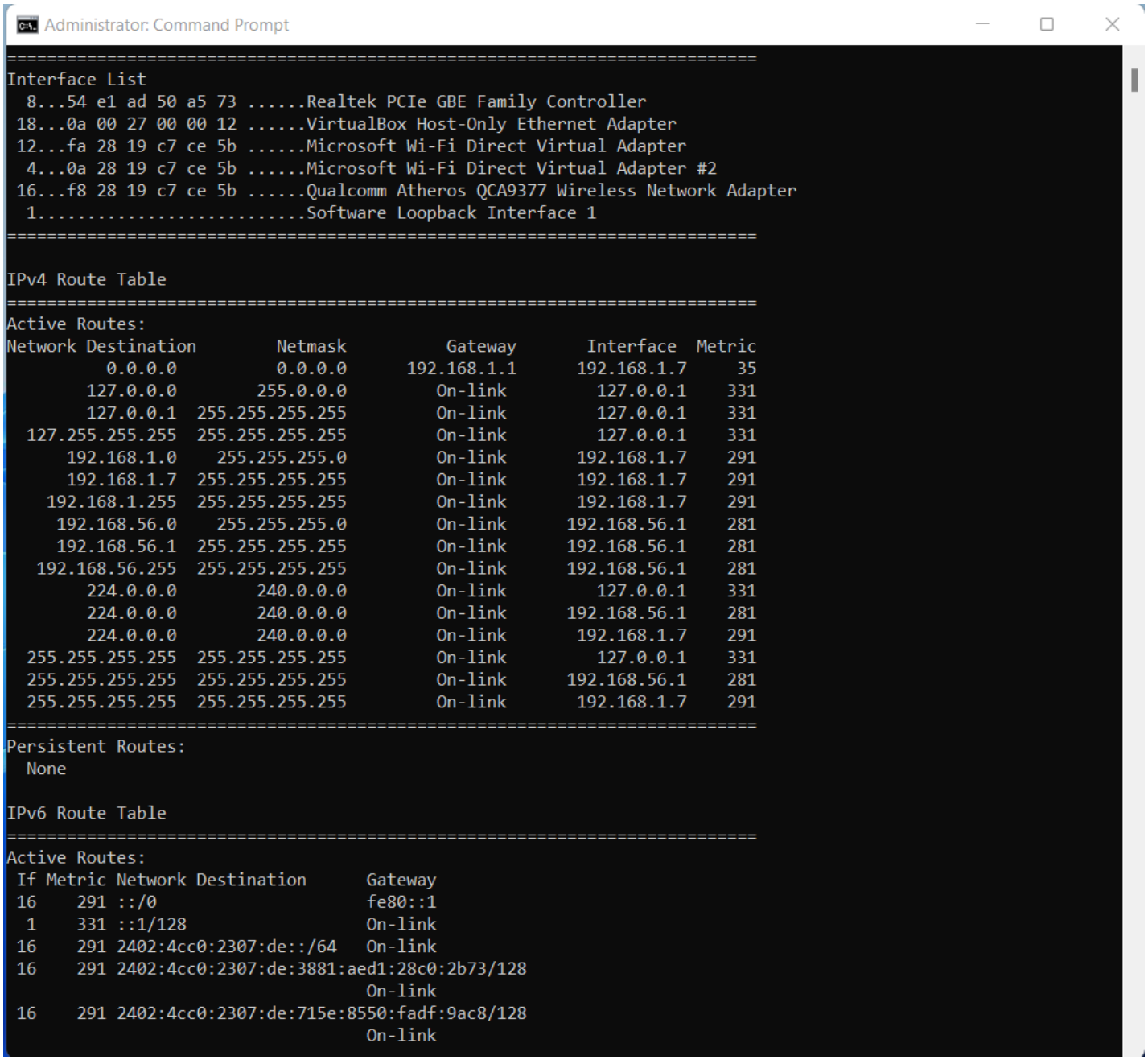
Authorizing the DHCP server and activating scopes

Remember that after you install and configure your DHCP server, you will need to authorize your scope before it can be activated. Authorizing your DHCP server allows you to prevent hackers from configuring rogue DHCP servers.

To authorize your DHCP server:

1. From the DHCP console, click on the DHCP icon.
2. From the Action menu, select Manage Authorized Servers.
3. Click Authorize and enter the name or IP address for your server.
4. Now you're ready to activate your DHCP server and bring it online. Click the scope you created and choose Activate from the Action menu.

(e) Monitor the IP Routing status.



Kshitij Anand

kshitijanand2@gmail.com | +91-98100-61295 | Github: kshitijanand36| Linkedin: kshitijanand36

EDUCATION

NETAJI SUBHAS INSTITUTE OF TECHNOLOGY (DELHI UNIVERSITY)
B.E in Electronics and Communication Engineering
Grad. May 2022
New Delhi
CGPA: 7.85 / 10.0

APEEJAY SCHOOL PITAMPURA
Grad. 2018 | New Delhi , India
CLASS XII CBSE (2018)
89.6% (PCM : 92.3%)
CLASS X (2016): 9.8 CGPA

SKILLS

PROGRAMMING
Languages:
•C++ • JavaScript
•C • Git • HTML • CSS
Frameworks:
•Node.js• Express.js • React.js
•Bootstrap• jQuery
• MongoDB • EJS
Familiar:
• Java •Python •DotNet
• REST-API • Angular •Numpy

LINKS

Github:// **kshitijanand36**
LinkedIn:// **kshitijanand36**
Leetcode:// **kshitijanand2**
Codeforces:// **kshitijanand36**
Codeforces:// **i_am_legend_**
Codechef:// **aim_google234**
Codechef :// **hllo_world12**
Atcoder:// **NSIT_Coder45**
GFG:// **kshitijanand36**
Hackerrank:// **kshitijanand**

COURSES

Web Development
Data Structures
Algorithms
Machine Learning
Competitive Programming

EXPERIENCE

WALMART GLOBAL TECH | Software Engineer -II
July'22 -Present | Bangaluru, Karnataka, India

- Part of **Health and Wellness** pillar under new business and emerging tech org.
- Working in the team that **monitors the supply chain of drugs and pharmacy of Walmart**

WINZO | Software Engineer Intern
Jan'22 – April'22 | New Delhi , India

- Working on the Project to **automate** the customer care service.
- Added **caching** for database which reduced the response time for an API
- Created the GamePartner back office dashboard which **fetched** all the details of Partnered games by **creating api in .Net, Node.Js** and rendering the data in **React.Js**
- Created the **API for feedback flow for generic issues** which **displayed various fields** like category and problems faced etc. Also implemented the **API for storing the data** given by the user in PostgreSQL DB through that.
- **Automated** the **customer care(CC) service** for newly added mindi games.
- Implemented the case for **multi-winner** in mania games on **customer care service**.
- Added **email alerts** for case when complaints **exceeds threshold** in CC bot.

CLAPPIA | Software Engineer Intern
May'21 – June'21 | Bangalore , India

- Added functionalities to the front end to **enhance user experience**.
- Improved pulling other App's data feature by adding **submission date & time option**.
- Fixed bugs in the Analytics services through API testing using **Postman**.
- Implemented the functionality of calculating **next-Schedule Time** in the project

PROJECTS

ELECTIONS EASY |Project | Source Code

- Designed & developed a Web App with back-end on **Node.Js, Express.Js, EJS** & **MongoDB database** & front-end using **HTML, CSS** & **Bootstrap.**
- Added feature for user to **report any unfair means** during elections and **display, update and delete** any report on a separate page.

ACHIEVEMENTS

EXPERT AT CODEFORCES | Participated in 100+ contests

- Global rank **790 / 13K+ (Top 6%)** in Edu Round 116.

5 STAR AT CODECHEF | Current Rating 2007 | Top 1.5% users

- Global rank **212 / 10K+ (Top 2%)** in July Lunchtime'20.

LEETCODE RATING 2026 (KNIGHT) | Top 2.7% users

- Global rank **478 / 11K+ (Top 4.5%)** in Biweekly Contest -66.
- Global rank **511 / 12K+ (Top 4.5%)** in Biweekly Contest -61.

OTHER ACHIEVEMENTS

- Global Rank **1156/14K** in **Google Kickstart** Round G'21. | **Certificate**
- **Hackerrank Certified** in Problem Solving(Intermediate). | **Certificate**
- **AIR-13143** in JEE(A)–18 & **98.5 percentile** in JEE(M) - 18.