1. Overview:

This report documents the actions taken to add `researcher9` to the system, assign file ownership, add them to a supplementary group, and ultimately delete the user when they left the organization. These tasks are part of the employee management process.

2. Task 1: Add `researcher9` to the System

Objective: Add the new employee `researcher9` to the system and assign them the `research_team` as their primary group.

```
analyst@cc20fb91c209:~$ sudo useradd researcher9
analyst@cc20fb91c209:~$
analyst@cc20fb91c209:~$ sudo usermod -g research_team researcher9
analyst@cc20fb91c209:~$
analyst@cc20fb91c209:~$ id researcher9
uid=1003(researcher9) gid=1003(research_team) groups=1003(research_team)
analyst@cc20fb91c209:~$
analyst@cc20fb91c209:~$ 
```

Command to Add User:

```
sudo useradd researcher9
```

Command to Add `researcher9` to `research_team` Group (Primary Group):

```
sudo usermod -g research_team researcher9
```

Verification Command: To verify that `researcher9` has been successfully added and is in the correct primary group:

```
id researcher9
```

Task 2. Assign file ownership

The new employee, researcher9, will take responsibility for project_r. In this task, you must make them the owner of the project_r.txt file.

The project_r.txt file is located in the /home/researcher2/projects directory, and owned by the researcher2 user.

- Use the chown command to make researcher9 the owner of /home/researcher2/projects/project_r.txt.

Objective: Transfer ownership of the project_r.txt file from the researcher2 user to researcher9.

```
analyst@cc20fb91c209:~$ sudo chown researcher9:research_team /home/researc
her2/projects/project_r.txt
analyst@cc20fb91c209:~$
analyst@cc20fb91c209:~$ ls -l /home/researcher2/projects/project_r.txt
-rw-rw-r-- 1 researcher9 research_team 46 Jan 19 11:47 /home/researcher2/p
rojects/project_r.txt
analyst@cc20fb91c209:~$
```

Command to Change Ownership of project_r.txt to researcher9:

sudo chown researcher9:research_team /home/researcher2/projects/project_r.txt

Verification Command: To verify the ownership of the file:

ls -l /home/researcher2/projects/project_r.txt

Task 3. Add the user to a secondary group

A couple of months later, this employee's role at the organization has changed, and they are working in both the Research and the Sales departments.

In this task, you must add researcher9 to a secondary group (sales_team). Their primary group is still research_team.

- Use the usermod command with the -a and -G options to add researcher9 to the sales_team group as a secondary group.

Objective: Add researcher9 to the sales_team group as a secondary group while keeping research_team as their primary group.

```
analyst@cc20fb91c209:~$ sudo usermod -a -G sales_team researcher9
analyst@cc20fb91c209:~$
analyst@cc20fb91c209:~$ groups researcher9
researcher9 : research_team sales_team
analyst@cc20fb91c209:~$
```

Command to Add researcher9 to sales_team:

sudo usermod -a -G sales_team researcher9

Verification Command: To verify the groups that researcher9 belongs to:

groups researcher9

Task 4. Delete a user

A year later, researcher9, decided to leave the company. In this task, you must remove them from the system.

1. Run a command to delete researcher9 from the system:

sudo userdel researcher9

Verification Command: To verify that the user has been deleted, use:

id researcher9

This command will output the following message:

Userdel: Group researcher9 not removed because it is not the primary group of user researcher9.

This is expected.

Note: When you create a new user in Linux, a group with the same name as the user is automatically created and the user is the only member of that group. After removing users, it is good practice to clean up any such empty groups that may remain behind.

2. Run the following command to delete the researcher9 group that is no longer required:

sudo groupdel researcher9

Verification Command: To verify that the group was deleted, use:

getent group researcher9

If the group was successfully removed, this command should return no output.

Objective: Remove the user researcher9 and their associated group after they left the organization.

```
analyst@223effc5a715:~$ sudo userdel researcher9
userdel: group researcher9 not removed because it is not the primary group
 of user researcher9.
analyst@223effc5a715:~$
analyst@223effc5a715:~$ sudo groupdel researcher9
analyst@223effc5a715:~$
analyst@223effc5a715:~$ id researcher9
id: 'researcher9': no such user
analyst@223effc5a715:~$
analyst@223effc5a715:~$ getent group researcher9
analyst@223effc5a715:~$
analyst@223effc5a715:~$
```