File Permissions & File Operations Challenge

Task 1: Create Files (10 minutes)

1. Create empty file `devops.txt` using `touch`
2. Create `notes.txt` with some content using `cat` or `echo`
3. Create `script.sh` using `vim` with content: `echo "Hello DevOps"`

Task 2: Read Files (10 minutes)

1. Read `notes.txt` using `cat`
2. View `script.sh` in vim read-only mode
3. Display first 5 lines of `/etc/passwd` using `head`
4. Display last 5 lines of `/etc/passwd` using `tail`

```
[ubuntu@ip-172-31-27-150:/$ ls
bin  bin.usr-is-merged  boot  dev  etc  home  lib  lib.usr-is-merged  lib64  lost+found  media  mnt  opt  proc  root  run  sbin  sbin.usr-is-merg
[ubuntu@ip-172-31-27-150:/$ cd home
[ubuntu@ip-172-31-27-150:/home$ ls
berlin  professor  tokyo  ubuntu
[ubuntu@ip-172-31-27-150:/home$ cd ubuntu/
[ubuntu@ip-172-31-27-150:~$ touch devops.txt
[ubuntu@ip-172-31-27-150:~$ echo "hello jeko" > devops.txt
[ubuntu@ip-172-31-27-150:~$ echo "hello jeko2" > devops.txt
[ubuntu@ip-172-31-27-150:~$ echo "hello jeko3" > devops.txt
[ubuntu@ip-172-31-27-150:~$ vim script.sh
[ubuntu@ip-172-31-27-150:~$ ls -l
total 8
-rw-rw-r-- 1 ubuntu ubuntu 12 Feb  4 17:27 devops.txt
-rw-rw-r-- 1 ubuntu ubuntu 21 Feb  4 17:31 script.sh
[ubuntu@ip-172-31-27-150:~$ ls |wc -l
2
[ubuntu@ip-172-31-27-150:~$ cat devops.txt
hello jeko3
[ubuntu@ip-172-31-27-150:~$ echo "hello jeko2" >> devops.txt
[ubuntu@ip-172-31-27-150:~$ echo "hello jeko" >> devops.txt
[ubuntu@ip-172-31-27-150:~$ cat devops.txt
hello jeko3
hello jeko2
hello jeko
[ubuntu@ip-172-31-27-150:~$ cat script.sh
echo "Hello DevOps"

[ubuntu@ip-172-31-27-150:~$ tail -n 5 /etc/passwd
_chrony:x:110:112:Chrony daemon,,,:/var/lib/chrony:/usr/sbin/nologin
ubuntu:x:1000:1000:Ubuntu:/home/ubuntu:/bin/bash
tokyo:x:1001:1001::/home/tokyo:/bin/sh
berlin:x:1002:1002::/home/berlin:/bin/sh
professor:x:1003:1003::/home/professor:/bin/sh
ubuntu@ip-172-31-27-150:~$
```

Task 3: Understand Permissions (10 minutes)

Format: `rwxrwxrwx` (owner-group-others)

- r = read (4), w = write (2), x = execute (1)

Task 4: Modify Permissions (20 minutes)

1. Make `script.sh` executable → run it with `./script.sh`
2. Set `devops.txt` to read-only (remove write for all)
3. Set `notes.txt` to 640 (owner: rw, group: r, others: none)
4. Create directory `project/` with permissions 755

Task 5: Test Permissions (10 minutes)

1. Try writing to a read-only file - what happens?
2. Try executing a file without execute permission
3. Document the error messages

```
[ubuntu@ip-172-31-27-150:~$ chmod +x script.sh
[ubuntu@ip-172-31-27-150:~$ ls -l | grep script
-rwxrwxr-x 1 ubuntu ubuntu 21 Feb  4 17:31 script.sh
[ubuntu@ip-172-31-27-150:~$  ./script.sh
Hello DevOps
[ubuntu@ip-172-31-27-150:~$ chmod +r devops.txt
[ubuntu@ip-172-31-27-150:~$ ls -l devops.txt
-rw-rw-r-- 1 ubuntu ubuntu 35 Feb  4 17:33 devops.txt
[ubuntu@ip-172-31-27-150:~$ chmod 640 devops.txt
[ubuntu@ip-172-31-27-150:~$ ls -l devops.txt
-rw-r----- 1 ubuntu ubuntu 35 Feb  4 17:33 devops.txt
[ubuntu@ip-172-31-27-150:~$ mkdir project
[ubuntu@ip-172-31-27-150:~$ chmod 777 project/
[ubuntu@ip-172-31-27-150:~$ ls -l project/
total 0
[ubuntu@ip-172-31-27-150:~$ ls -ld project/
drwxrwxrwx 2 ubuntu ubuntu 4096 Feb  4 17:40 project/
[ubuntu@ip-172-31-27-150:~$ ls -l | grep script
-rwxrwxr-x 1 ubuntu ubuntu   21 Feb  4 17:31 script.sh
ubuntu@ip-172-31-27-150:~$ []
```