For each of the following HDFS shell commands, attach a screenshot showing successful execution of the command on your EC2 instance and also explain what the command does. 1 point each question.

1) ls: lists all files and directories in HDFS

```
ubuntu@ip-172-31-7-42:~$ hdfs dfs -ls /
Found 2 items
drwxr-xr-x   - ubuntu supergroup          0 2025-02-10 04:58 /home
drwxr-xr-x   - ubuntu supergroup          0 2025-02-13 02:04 /user
```

2) mkdir: creates a new directory called lab2 inside the /user directory

```
ubuntu@ip-172-31-7-42:~$ hdfs dfs -mkdir /user/lab2
ubuntu@ip-172-31-7-42:~$ hdfs dfs -ls /user
Found 3 items
drwxr-xr-x   - ubuntu supergroup          0 2025-02-13 02:09 /user/dsci551
drwxr-xr-x   - ubuntu supergroup          0 2025-02-10 05:07 /user/john
drwxr-xr-x   - ubuntu supergroup          0 2025-02-13 02:23 /user/lab2
```

3) put : copy the local file lab2.txt into the HDFS directory /user/dsci551

```
ubuntu@ip-172-31-7-42:~$ echo "lab2" > lab2.txt
ubuntu@ip-172-31-7-42:~$ hdfs dfs -put lab2.txt /user/lab2
ubuntu@ip-172-31-7-42:~$ hdfs dfs -ls /user/lab2
Found 1 items
-rw-r--r--   1 ubuntu supergroup          5 2025-02-13 02:25 /user/lab2/lab2.txt
```

4) get: downloads lab2.txt file from the HDFS directory /user/dsci551 into local directory

```
ubuntu@ip-172-31-7-42:~$ ls
dsci551  hadoop-3.4.1  hadoop-3.4.1.tar.gz  hello1.txt  spark-3.5.4-bin-hadoop3  spark-3.5.4-bin-hadoop3.tgz
ubuntu@ip-172-31-7-42:~$ hdfs dfs -get /user/lab2/lab2.txt .
ubuntu@ip-172-31-7-42:~$ ls
dsci551  hadoop-3.4.1  hadoop-3.4.1.tar.gz  hello1.txt  lab2.txt  spark-3.5.4-bin-hadoop3  spark-3.5.4-bin-hadoop3.tgz
```

5) cat: show the content of lab2.txt

```
ubuntu@ip-172-31-7-42:~$ hdfs dfs -cat /user/lab2/lab2.txt
lab2
```

6) rm: delete the lab2.txt file from HDFS under /user/dsci551

```
ubuntu@ip-172-31-7-42:~$ hdfs dfs -rm /user/lab2/lab2.txt
Deleted /user/lab2/lab2.txt
```

7) rmdir: deletes the directory dsci551 from HDFS

```
ubuntu@ip-172-31-7-42:~$ hdfs dfs -rmdir /user/lab2
ubuntu@ip-172-31-7-42:~$ hdfs dfs -ls /user
Found 2 items
drwxr-xr-x   - ubuntu supergroup          0 2025-02-13 02:09 /user/dsci551
drwxr-xr-x   - ubuntu supergroup          0 2025-02-10 05:07 /user/john
```

8) stat: status information (file name, block size, and replication factor) for stat.txt

```
ubuntu@ip-172-31-7-42:~$ echo "for stat command only" > stat.txt
ubuntu@ip-172-31-7-42:~$ hdfs dfs -put stat.txt /user/dsci551
ubuntu@ip-172-31-7-42:~$ hdfs dfs -stat /user/dsci551/stat.txt
2025-02-13 02:42:19
ubuntu@ip-172-31-7-42:~$ hdfs dfs -stat "%n %b %o" /user/dsci551/stat.txt
stat.txt 22 134217728
```

9) mv: renames stat.txt to dsci551_stat.txt in the same directory

```
ubuntu@ip-172-31-7-42:~$ hdfs dfs -mv /user/dsci551/stat.txt /user/dsci551/dsci551_stat.txt
ubuntu@ip-172-31-7-42:~$ hdfs dfs -ls /user/dsci551
Found 2 items
-rw-r--r--   1 ubuntu supergroup         22 2025-02-13 02:42 /user/dsci551/dsci551_stat.txt
-rw-r--r--   1 ubuntu supergroup         12 2025-02-13 02:09 /user/dsci551/sample.txt
```

10) appendToFile: appends the contents of dsci551_append.txt file to the end of dsci551_log.txt in HDFS

```
ubuntu@ip-172-31-7-42:~$ echo "Initial log entry." > dsci551_log.txt
ubuntu@ip-172-31-7-42:~$ hdfs dfs -put dsci551_log.txt /user/dsci551
ubuntu@ip-172-31-7-42:~$ echo "Additional log entry." > dsci551_append.txt
ubuntu@ip-172-31-7-42:~$ hdfs dfs -appendToFile dsci551_append.txt /user/dsci551/dsci551_log.txt
ubuntu@ip-172-31-7-42:~$ hdfs dfs -cat /user/dsci551/dsci551_log.txt
Initial log entry.
Additional log entry.
```