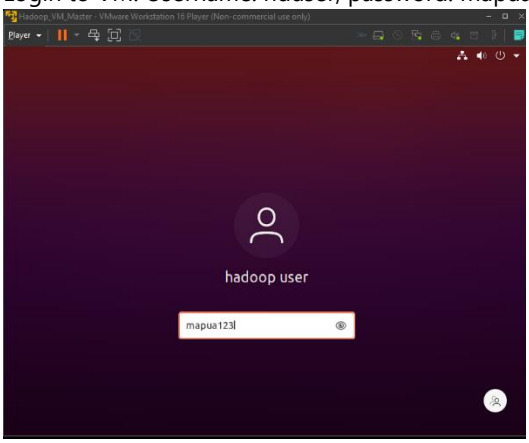
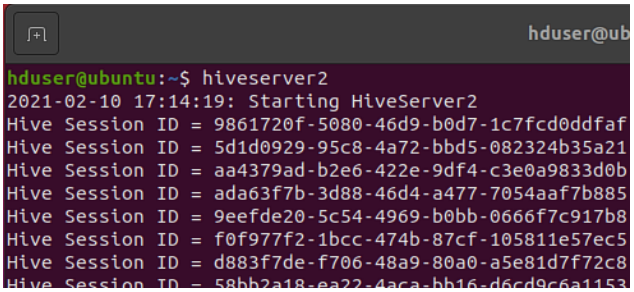
Steps

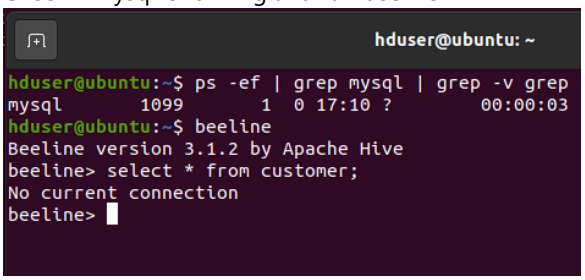
1. Login to VM. Username: hduser, password: mapua123



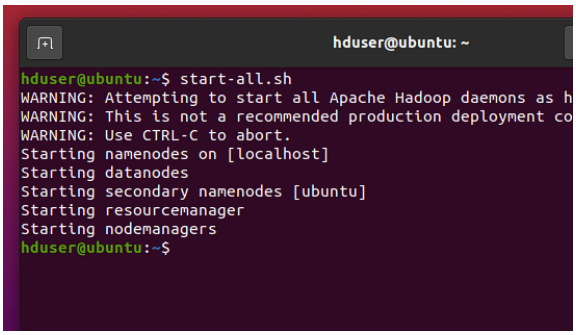
2. Start hiveserver2



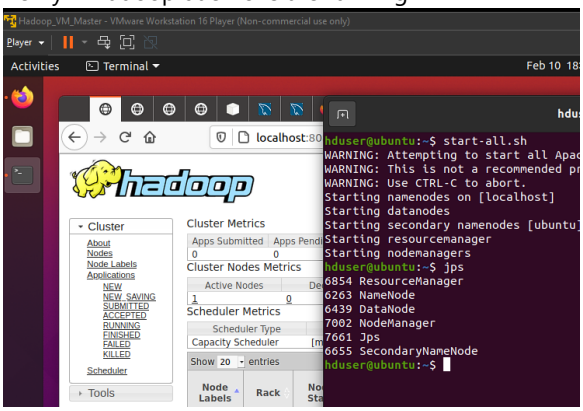
3. Check if mysql is running and run beeline



4. Run Hadoop daemons



5. Verify if Hadoop daemons are running

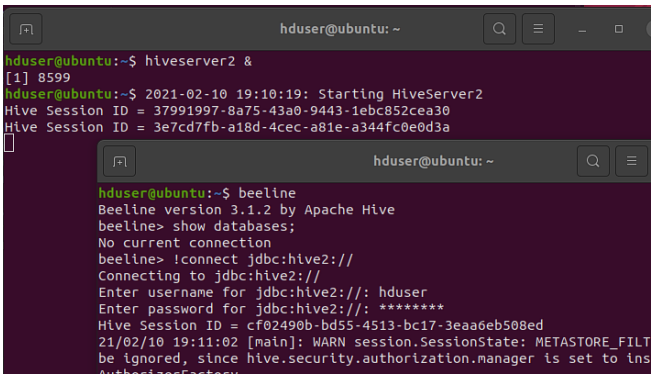


6. Open another terminal and run hiveserver and beeline. Connect to hive and provide the below username and password.

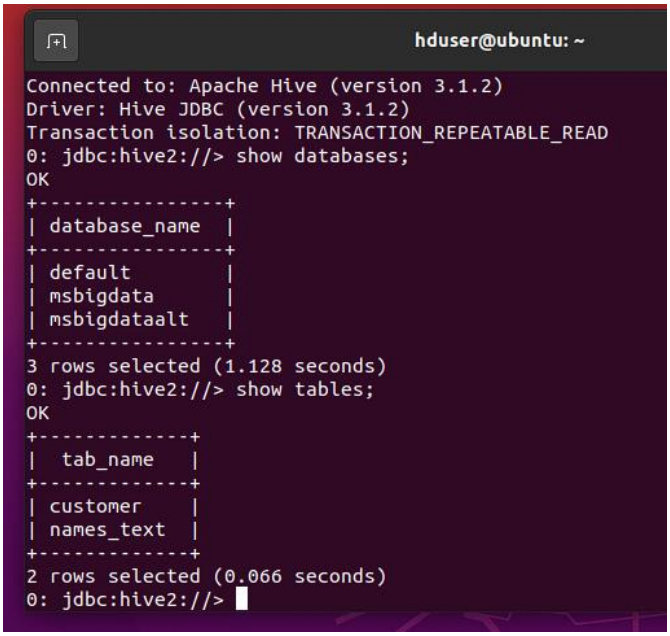
   command: !connect jdbc:hive2//

   username: hduser

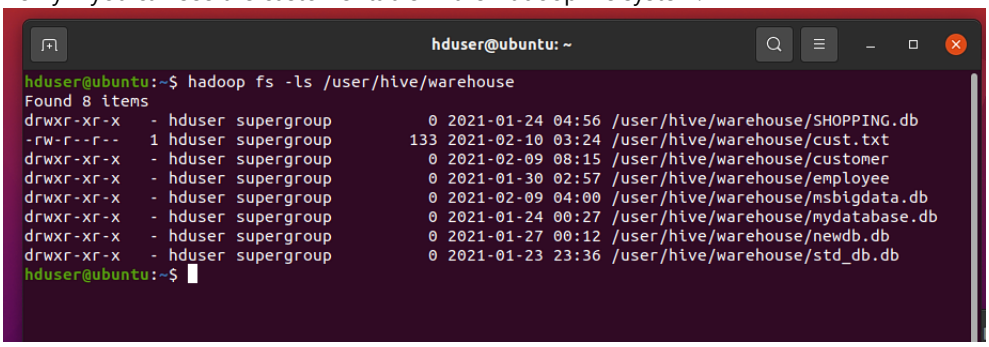
   password: mapua123



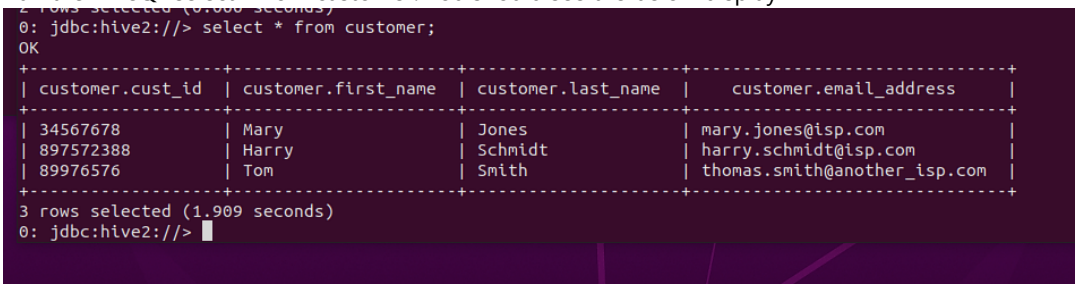
7. Run the commands show databases and show tables as shown.



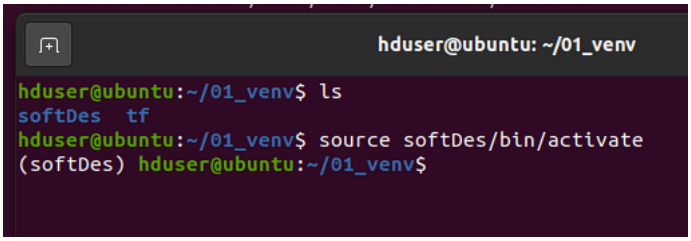
8. Verify if you can see the customer table in the Hadoop file system.



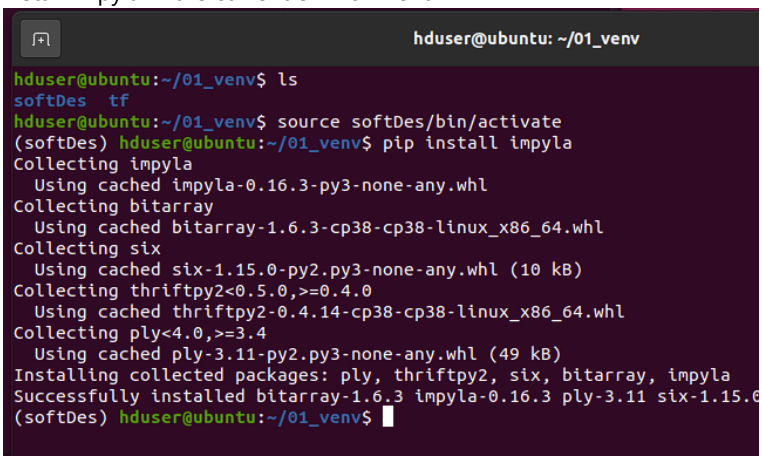
9. Run the HiveQL select * from customer. You should see the below display



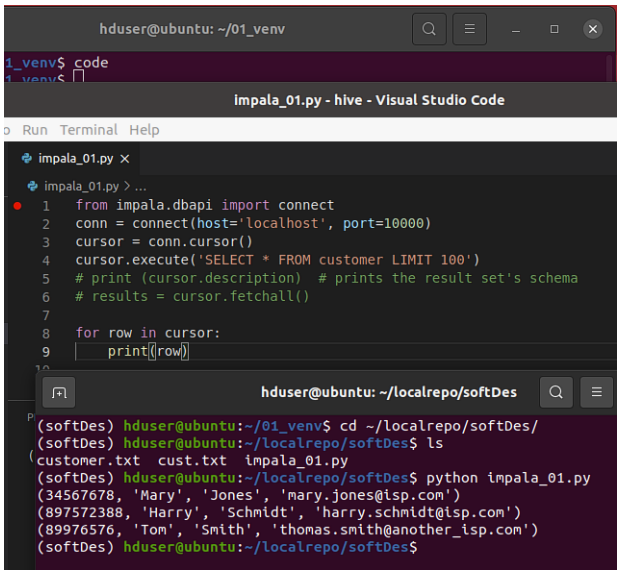
10. Create and activate softDes virtual environment with the below commands.
    - virtualenv softDes
    - source softDes/bin/activate



11. install impyla in the current environment



12. Run Visual Studio Code and type the following Python program. You should see the below update.




```
from impala.dbapi import connect
conn = connect(host='localhost', port=10000)
cursor = conn.cursor()
cursor.execute('SELECT * FROM customer LIMIT 100')
# print (cursor.description)  # prints the result set's schema
# results = cursor.fetchall()

for row in cursor:
    print(row)
```

Try to run stop-all.sh in your terminal and verify if you can still see the p

13. Create LR6 directory/folder in the Hadoop file system using the below command and verify if it was created successfully.

hadoop fs -mkdir /user/hive/warehouse/Lab6

```
hduser@ubuntu:~$ hadoop fs -ls /user/hive/warehouse/
Found 9 items
drwxr-xr-x   - hduser supergroup          0 2021-02-10 23:13 /user/hive/warehouse/Lab6
drwxr-xr-x   - hduser supergroup          0 2021-01-24 04:56 /user/hive/warehouse/SHOPPING.db
-rw-r--r--   1 hduser supergroup        133 2021-02-10 03:24 /user/hive/warehouse/cust.txt
drwxr-xr-x   - hduser supergroup          0 2021-02-09 08:15 /user/hive/warehouse/customer
drwxr-xr-x   - hduser supergroup          0 2021-01-30 02:57 /user/hive/warehouse/employee
drwxr-xr-x   - hduser supergroup          0 2021-02-09 04:00 /user/hive/warehouse/msbigdata.db
drwxr-xr-x   - hduser supergroup          0 2021-01-24 00:27 /user/hive/warehouse/mydatabase.db
drwxr-xr-x   - hduser supergroup          0 2021-01-27 00:12 /user/hive/warehouse/newdb.db
drwxr-xr-x   - hduser supergroup          0 2021-01-23 23:36 /user/hive/warehouse/std_db.db
hduser@ubuntu:~$
```

14. Create a new database temp_database in the /user/hive/warehouse directory
    CREATE DATABASE temp_database;
15. Verify the database creation as shown.

```
0: jdbc:hive2://> show databases;
OK
+----------------+
| database_name  |
+----------------+
| default        |
| msbigdata      |
| msbigdataalt   |
| temp_database  |
+----------------+
```

Verify using the -ls hdfs command.

```
hduser@ubuntu: ~
drwxr-xr-x   - hduser supergroup          0 2021-02-10 23:22 /user/hive/warehouse/temp_database.db
hduser@ubuntu:~$ hdfs dfs -ls /user/hive/warehouse/Lab6
hduser@ubuntu:~$ hdfs dfs -rm -R -f /user/hive/warehouse/Lab6
Deleted /user/hive/warehouse/Lab6
hduser@ubuntu:~$ hdfs dfs -ls /user/hive/warehouse/
Found 9 items
drwxr-xr-x   - hduser supergroup          0 2021-01-24 04:56 /user/hive/warehouse/SHOPPING.db
-rw-r--r--   1 hduser supergroup        133 2021-02-10 03:24 /user/hive/warehouse/cust.txt
drwxr-xr-x   - hduser supergroup          0 2021-02-09 08:15 /user/hive/warehouse/customer
drwxr-xr-x   - hduser supergroup          0 2021-01-30 02:57 /user/hive/warehouse/employee
drwxr-xr-x   - hduser supergroup          0 2021-02-09 04:00 /user/hive/warehouse/msbigdata.db
drwxr-xr-x   - hduser supergroup          0 2021-01-24 00:27 /user/hive/warehouse/mydatabase.db
drwxr-xr-x   - hduser supergroup          0 2021-01-27 00:12 /user/hive/warehouse/newdb.db
drwxr-xr-x   - hduser supergroup          0 2021-01-23 23:36 /user/hive/warehouse/std_db.db
drwxr-xr-x   - hduser supergroup          0 2021-02-10 23:22 /user/hive/warehouse/temp_database.db
hduser@ubuntu:~$
```

Note: You can clear the beeline terminal by using the key combination Ctrl + L.

16. Run the below commands:

    use temp_database;
    create table temp_table (z int);
    show tables;
    You should have the same below display

```
0: jdbc:hive2://> show tables;
OK
+-------------+
|  tab_name   |
+-------------+
| temp_table  |
+-------------+
1 row selected (0.068 seconds)
0: jdbc:hive2://> Hive Session ID = 01934dd1-16c1-4df8-a
Hive Session ID = fa1edbd8-599b-493b-a7eb-e374fe0e2613
Hive Session ID = 65260859-9989-4a01-9cad-d8ea6d6b6d09
Hive Session ID = 0cad1220-09aa-487a-8698-546cace722ac
```

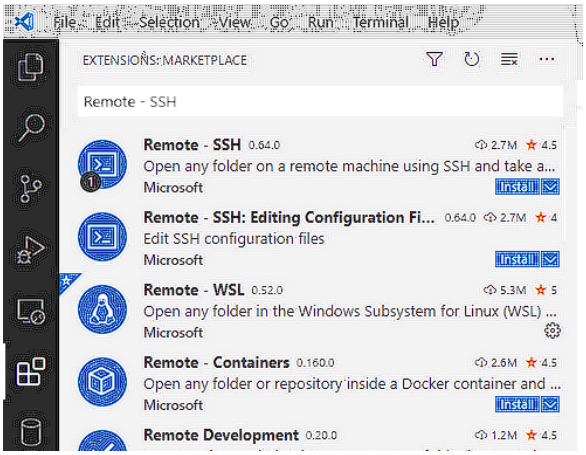
17. Ssh login to Master VM

```
hduser@ubuntu: ~
login as: hduser
hduser@192.168.92.152's password:
Welcome to Ubuntu 20.04.2 LTS (GNU/Linux 5.8.0-43-generi

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

1 update can be installed immediately.
0 of these updates are security updates.
To see these additional updates run: apt list --upgradab

Your Hardware Enablement Stack (HWE) is supported until
Last login: Fri Feb 12 22:19:27 2021 from 192.168.92.1
hduser@ubuntu:~$
```

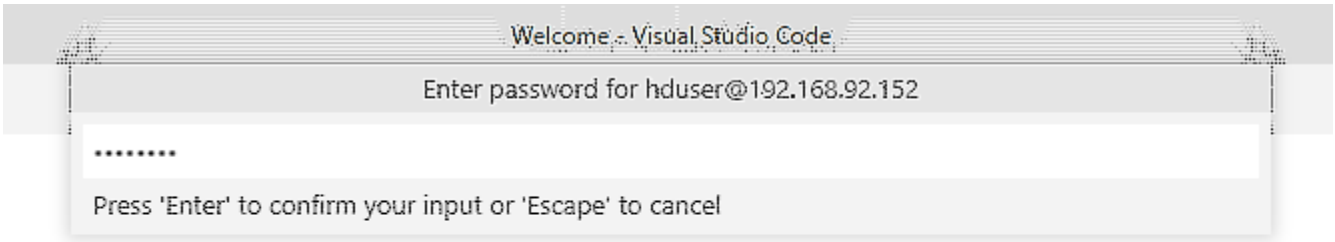
18.

```
hduser@ubuntu:~$ ssh-keygen -t rsa
Generating public/private rsa key pair.
Enter file in which to save the key (/home/hduser/.ssh/id_rsa):
/home/hduser/.ssh/id_rsa already exists.
Overwrite (y/n)? y
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/hduser/.ssh/id_rsa
Your public key has been saved in /home/hduser/.ssh/id_rsa.pub
The key fingerprint is:
SHA256:mNlpmgzjEsJINNIpi+lMIDKeS7eX3qgzcGxAsrx3ASY hduser@ubuntu
The key's randomart image is:
+---[RSA 3072]----+
|.+ .             |
|XE+o             |
|XB+ .            |
|OB . . = .       |
|B.B + * S        |
| B O B +         |
|  * = *          |
|   + o .         |
|   .+            |
+----[SHA256]-----+
hduser@ubuntu:~$
```

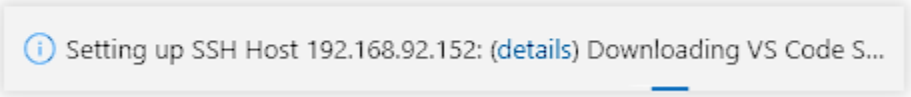
19. Install Remote-SSH on VS Code Host OS

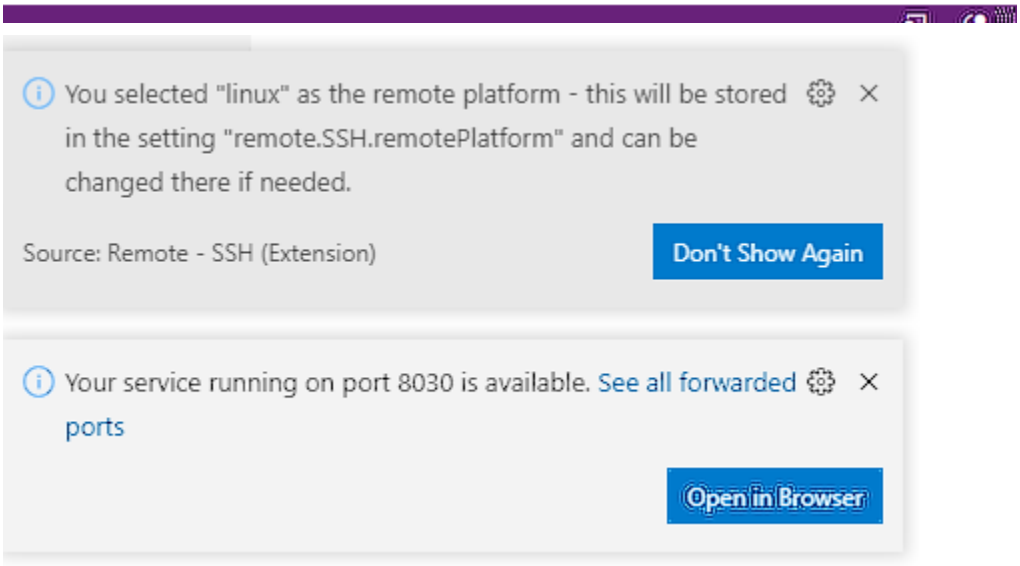


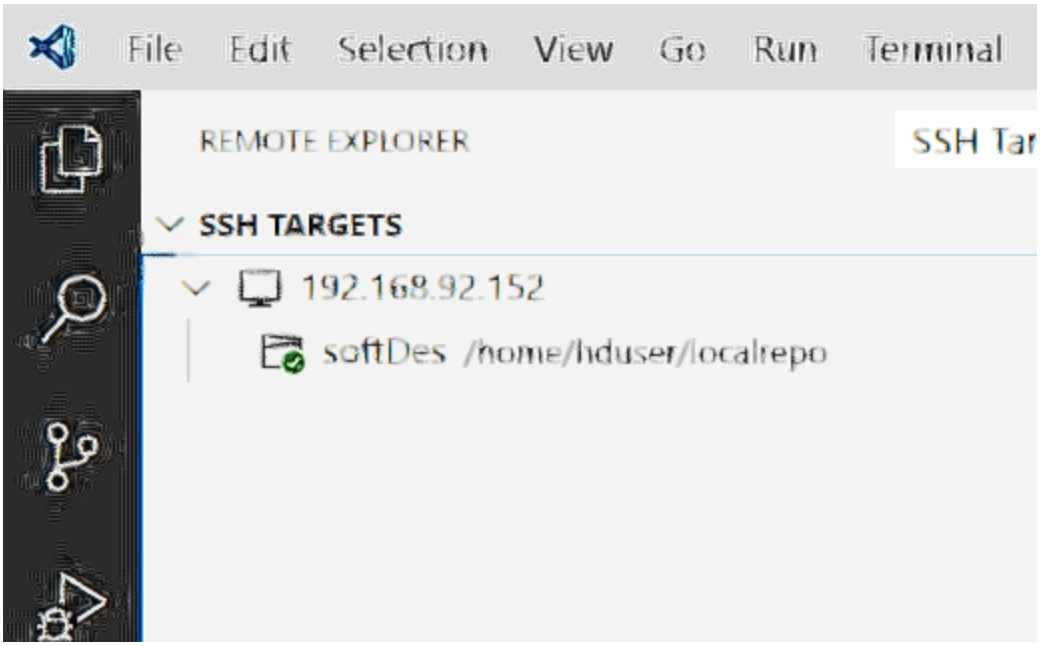
20. Sdfdf



ode







21. Generate PuTTY key