Experiment No. 2
Use of Sqoop tool
Date of Performance:24/07/2023
Date of Submission:31/07/2023

AIM: To install SQOOP and execute basic commands of Hadoop eco system componentSqoop.

THEORY:

Installation and configuration of SQOOP

1) Download SQOOP from https://sqoop.apache.org
2) Unzip and Install SQOOP

   After Downloading the SQOOP, we need to Unzip the sqoop-1.4.7.bin_hadoop-2.6.0.tar.gz file.
3) Create a folder and move the final extracted file in it.
4) Set up the environment variables
   a. Set SQOOP_HOME
   b. Set up path variable
5) Configure SQOOP

Basic SQOOP commands:

1. List Table

This command lists the particular table of the database in MYSQL server.

```
sqoop  list - tables --connect jdbc:mysql://localhost/payment --username gatner
```

2. Target directory

This command import table in a specific directory in HDFS. -m denotes mapper argument. They have an integer value.

```
$ sqoop import  --connect jdbc:mysql://localhost/inventory --username jony -table inventory --m 1 --target-dir/inv
```

3. sqoop-eval

This command runs quickly SQL queries of the respective database.

```
$ sqoop eval --connect --query "SQLQuery"
```

4. sqoop – version

This command displays version of the sqoop.

```
$ sqoop version    sqoop {revnumber}
```

5. sqoop-job

This command allows us to create a job, the parameters that are created can be invoked at any time. They take options like (–create,–delete,–show,–exit).

```
$ sqoop job --create --import --connect  --table
```

6. code gen

This Sqoop command creates java class files which encapsulate the imported records. All the java files are recreated, and new versions of a class are generated. They generate code to interact with database records. Retrieves a list of all the columns and their datatypes.

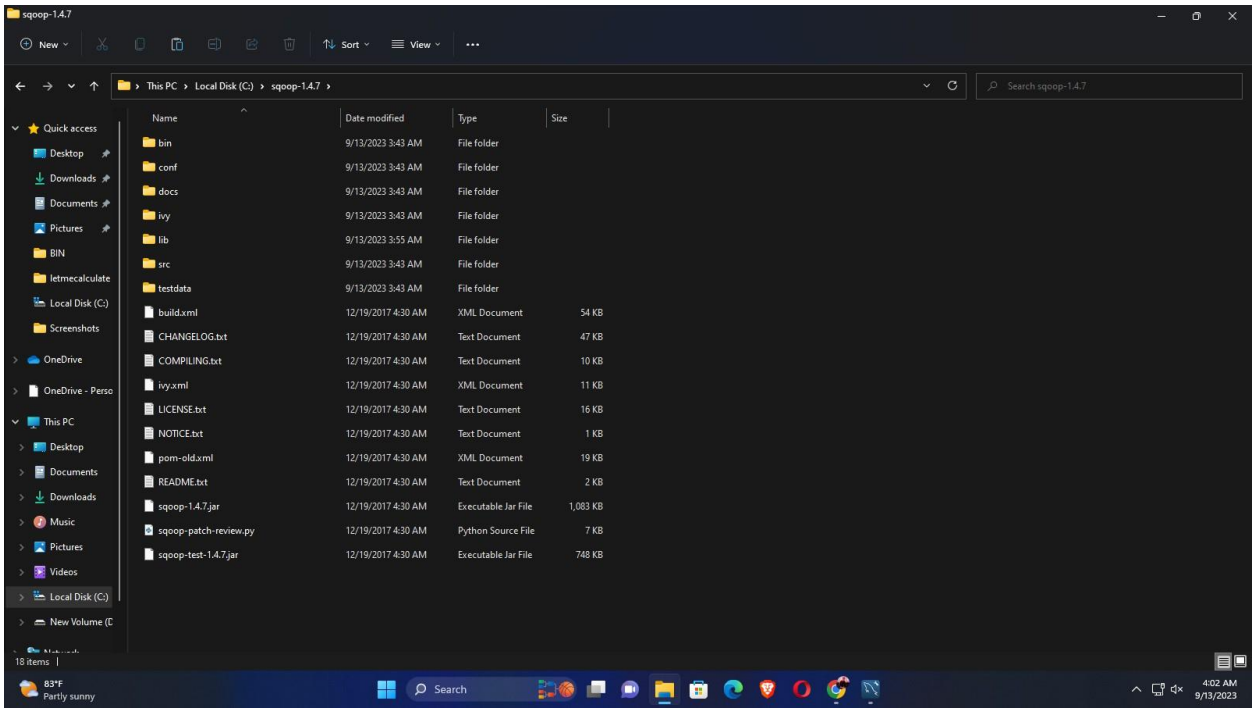
```
$ sqoop codegen --connect -table
```

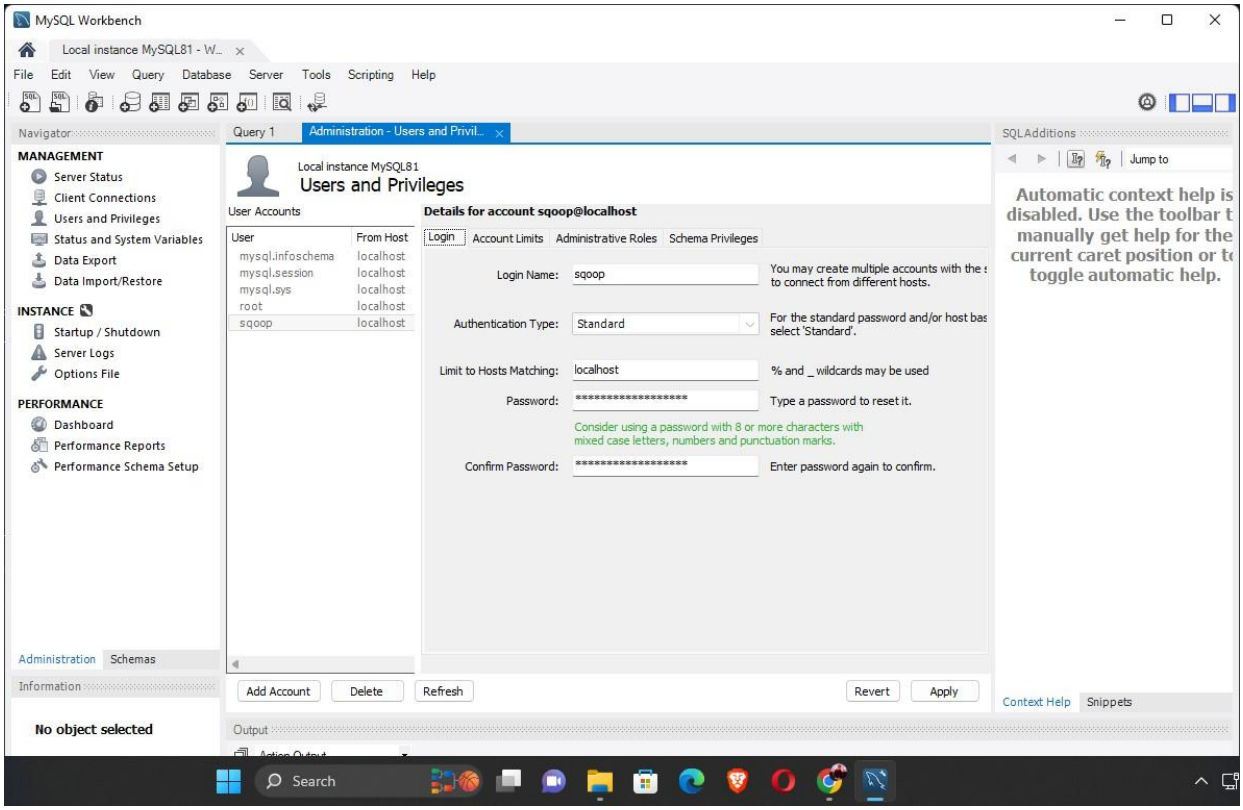
7. List Database

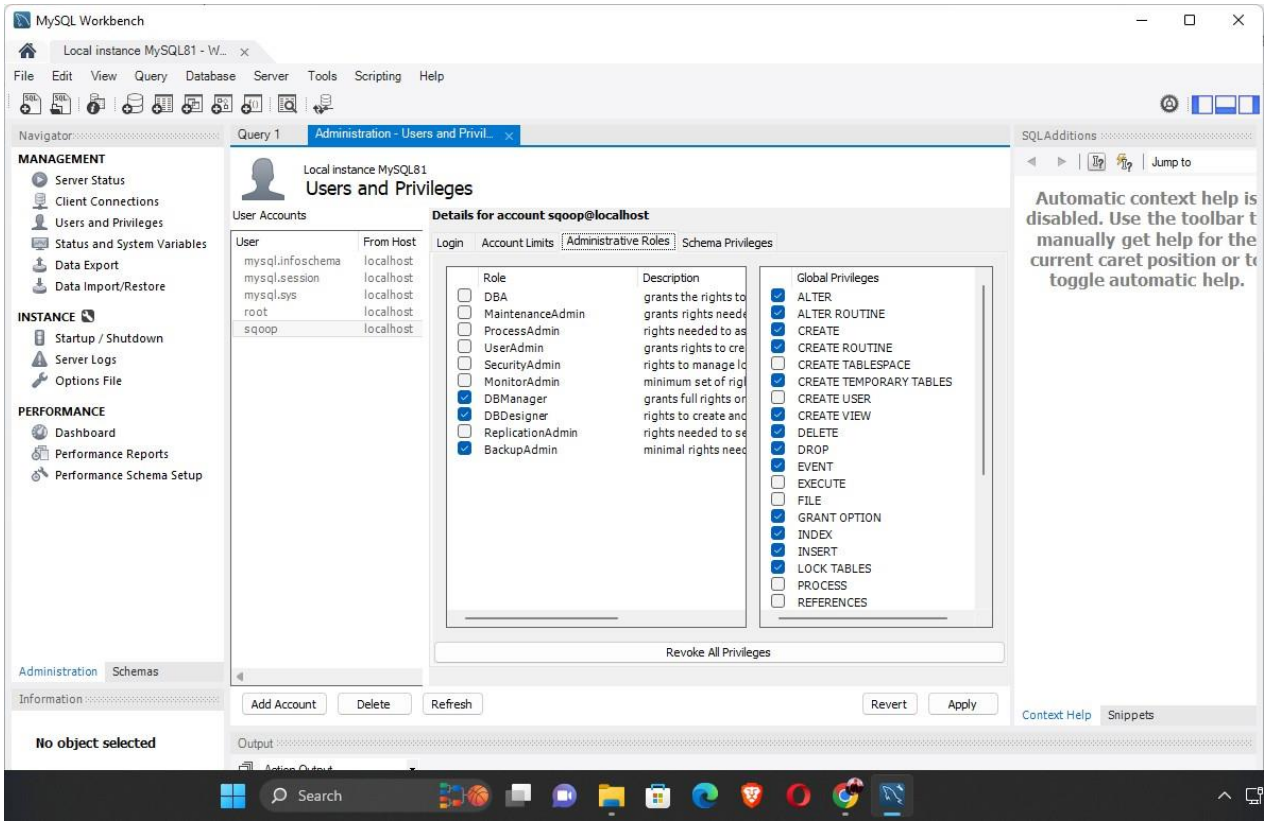
This Sqoop command lists have all the available database in the RDBMS server.

```
>$ sqoop list - database -- connect
```

OUTPUT:


sqoop-1.4.7
This PC › Local Disk (C:) › sqoop-1.4.7 ›
Name
Date modified
Type
Size
bin 9/13/2023 3:43 AM File folder
conf 9/13/2023 3:43 AM File folder
docs 9/13/2023 3:43 AM File folder
ivy 9/13/2023 3:43 AM File folder
lib 9/13/2023 3:55 AM File folder
src 9/13/2023 3:43 AM File folder
testdata 9/13/2023 3:43 AM File folder
build.xml 12/19/2017 4:30 AM XML Document 54 KB
CHANGELOG.txt 12/19/2017 4:30 AM Text Document 47 KB
COMPILING.txt 12/19/2017 4:30 AM Text Document 10 KB
ivy.xml 12/19/2017 4:30 AM XML Document 11 KB
LICENSE.txt 12/19/2017 4:30 AM Text Document 16 KB
NOTICE.txt 12/19/2017 4:30 AM Text Document 1 KB
pom-old.xml 12/19/2017 4:30 AM XML Document 19 KB
README.txt 12/19/2017 4:30 AM Text Document 2 KB
sqoop-1.4.7.jar 12/19/2017 4:30 AM Executable Jar File 1,083 KB
sqoop-patch-review.py 12/19/2017 4:30 AM Python Source File 7 KB
sqoop-test-1.4.7.jar 12/19/2017 4:30 AM Executable Jar File 748 KB
18 items


MySQL Workbench
Local instance MySQL81 - W...
File Edit View Query Database Server Tools Scripting Help
Navigator
MANAGEMENT
Server Status
Client Connections
Users and Privileges
Status and System Variables
Data Export
Data Import/Restore
INSTANCE
Startup / Shutdown
Server Logs
Options File
PERFORMANCE
Dashboard
Performance Reports
Performance Schema Setup
Administration Schemas
Information
No object selected
Query 1
Administration - Users and Privil...
Local instance MySQL81
Users and Privileges
User Accounts
User From Host
mysql.infoschema localhost
mysql.session localhost
mysql.sys localhost
root localhost
sqoop localhost
Details for account sqoop@localhost
Login Account Limits Administrative Roles Schema Privileges
Login Name: sqoop
You may create multiple accounts with the same name to connect from different hosts.
Authentication Type: Standard
For the standard password and/or host based authentication, select 'Standard'.
Limit to Hosts Matching: localhost
% and _ wildcards may be used
Password:
Type a password to reset it.
Consider using a password with 8 or more characters with mixed case letters, numbers and punctuation marks.
Confirm Password:
Enter password again to confirm.
Add Account Delete Refresh Revert Apply
Output
SQLAdditions
Jump to
Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.
Context Help Snippets
Search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mysql.session localhost
mysql.sys localhost
root localhost
sqoop localhost
Details for account sqoop@localhost
Login Account Limits Administrative Roles Schema Privileges
Role Description
DBA grants the rights to
MaintenanceAdmin grants rights neede
ProcessAdmin rights needed to as
UserAdmin grants rights to cre
SecurityAdmin rights to manage lo
MonitorAdmin minimum set of rig
DBManager grants full rights or
DBDesigner rights to create and
ReplicationAdmin rights needed to se
BackupAdmin minimal rights need
Global Privileges
ALTER
ALTER ROUTINE
CREATE
CREATE ROUTINE
CREATE TABLESPACE
CREATE TEMPORARY TABLES
CREATE USER
CREATE VIEW
DELETE
DROP
EVENT
EXECUTE
FILE
GRANT OPTION
INDEX
INSERT
LOCK TABLES
PROCESS
REFERENCES
Revoke All Privileges
Add Account Delete Refresh Revert Apply
Output
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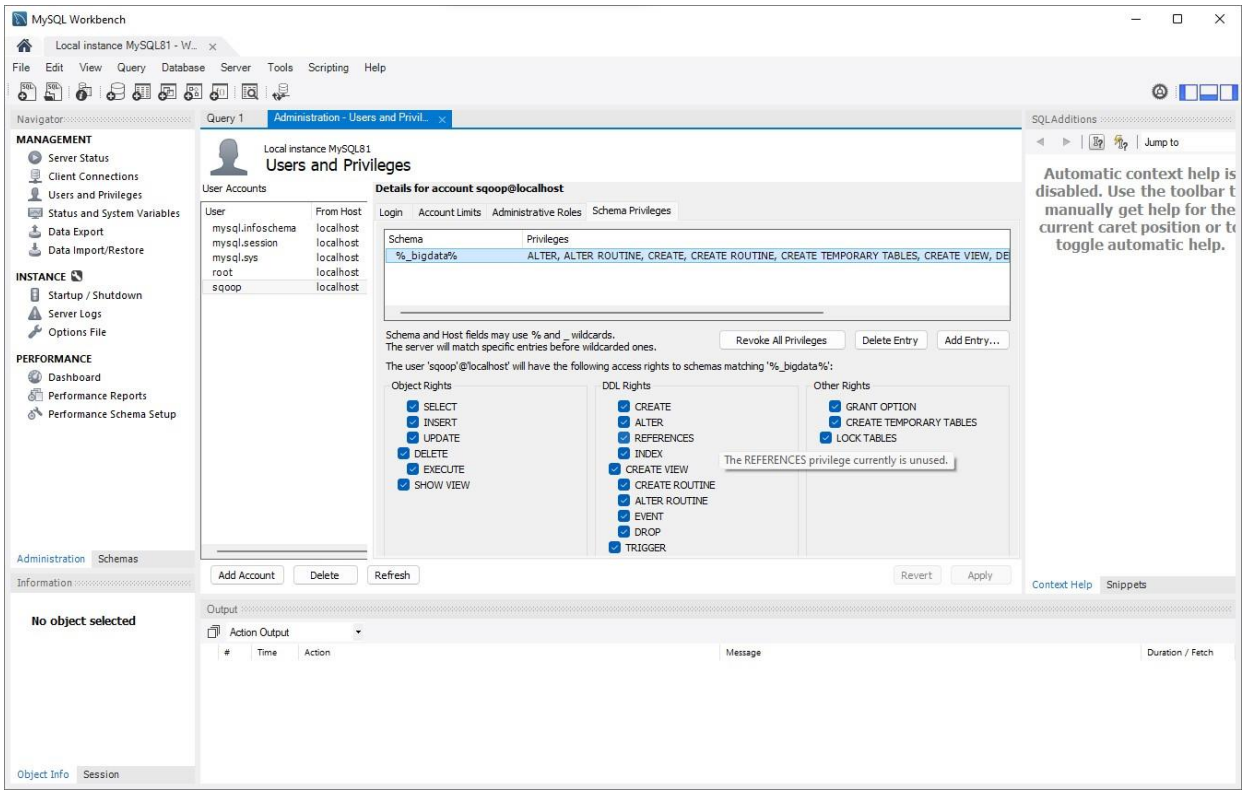
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mysql.session localhost
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root localhost
sqoop localhost
Details for account sqoop@localhost
Login Account Limits Administrative Roles Schema Privileges
Schema Privileges
%_bigdata% ALTER, ALTER ROUTINE, CREATE, CREATE ROUTINE, CREATE TEMPORARY TABLES, CREATE VIEW, DE
Schema and Host fields may use % and _ wildcards.
The server will match specific entries before wildcarded ones.
Revoke All Privileges Delete Entry Add Entry...
The user 'sqoop'@'localhost' will have the following access rights to schemas matching '%_bigdata%':
Object Rights
SELECT
INSERT
UPDATE
DELETE
EXECUTE
SHOW VIEW
DDL Rights
CREATE
ALTER
REFERENCES
INDEX
CREATE VIEW
CREATE ROUTINE
ALTER ROUTINE
EVENT
DROP
TRIGGER
Other Rights
GRANT OPTION
CREATE TEMPORARY TABLES
LOCK TABLES
The REFERENCES privilege currently is unused.
Add Account Delete Refresh Revert Apply
Output
Action Output
Time Action Message Duration / Fetch
SQLAdditions
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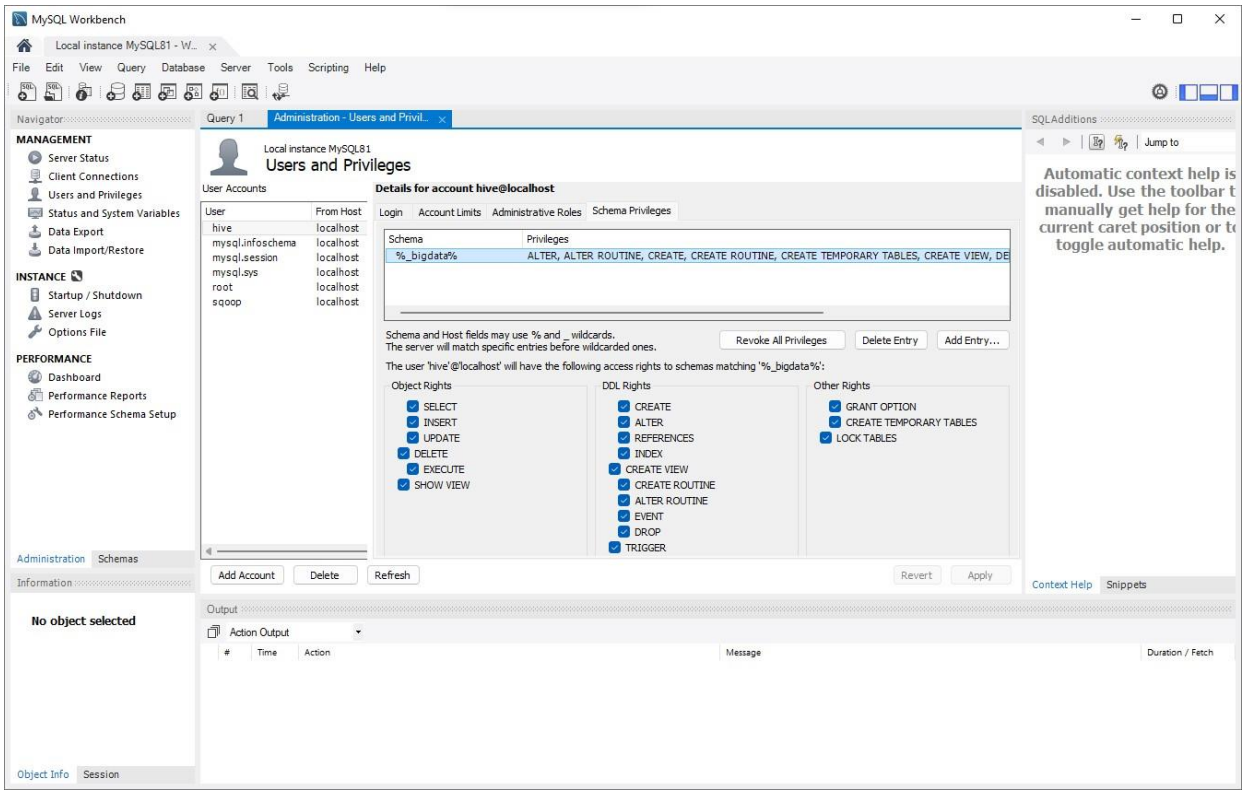
Context Help Snippets
Object Info Session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mysql.session localhost
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root localhost
sqoop localhost
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Schema and Host fields may use % and _ wildcards.
The server will match specific entries before wildcarded ones.
Revoke All Privileges Delete Entry Add Entry...
The user 'hive'@'localhost' will have the following access rights to schemas matching '%_bigdata%':
Object Rights
SELECT
INSERT
UPDATE
DELETE
EXECUTE
SHOW VIEW
DDL Rights
CREATE
ALTER
REFERENCES
INDEX
CREATE VIEW
CREATE ROUTINE
ALTER ROUTINE
EVENT
DROP
TRIGGER
Other Rights
GRANT OPTION
CREATE TEMPORARY TABLES
LOCK TABLES
Revert Apply
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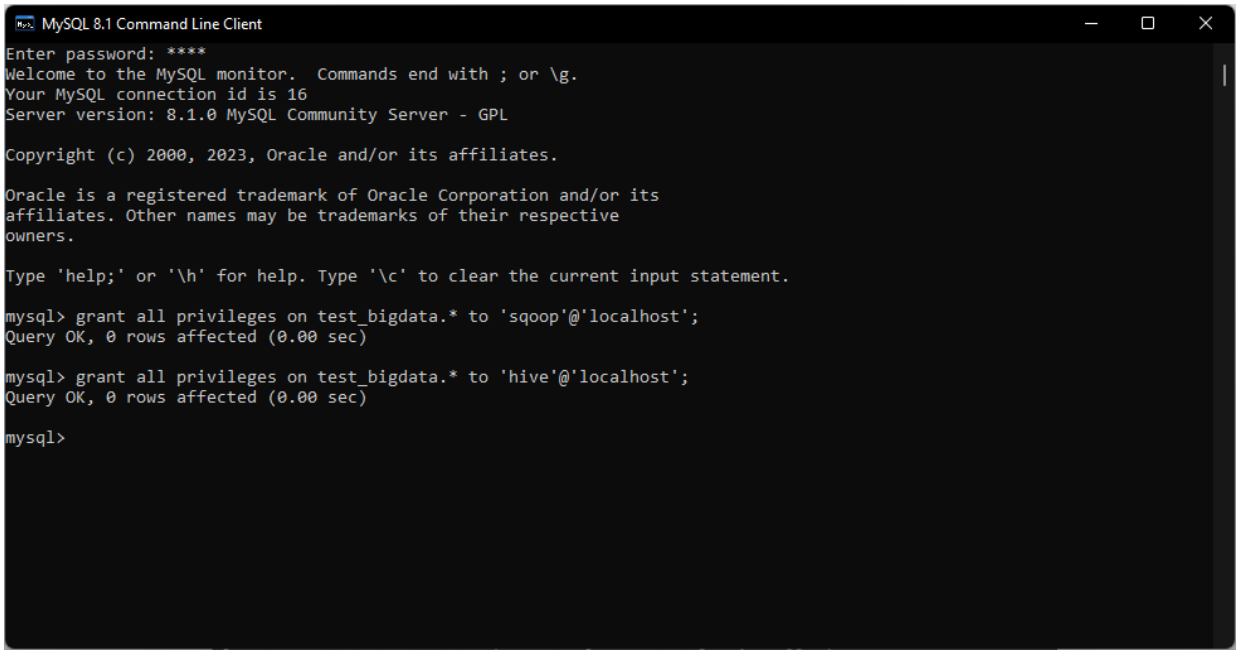
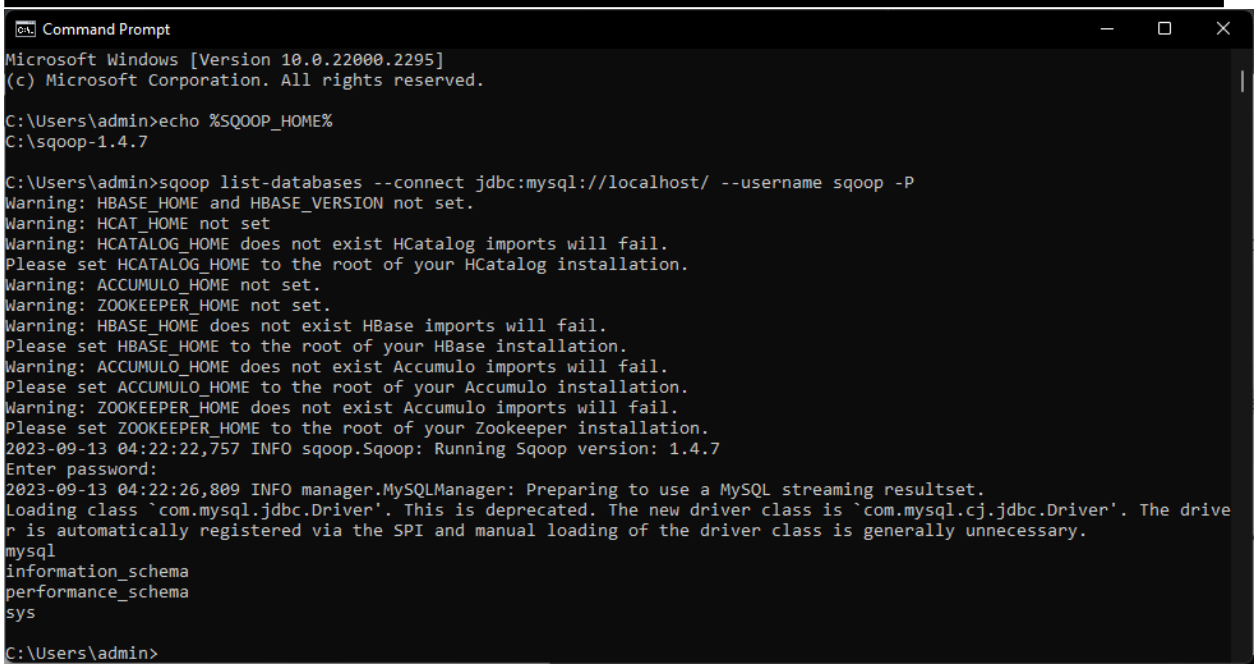
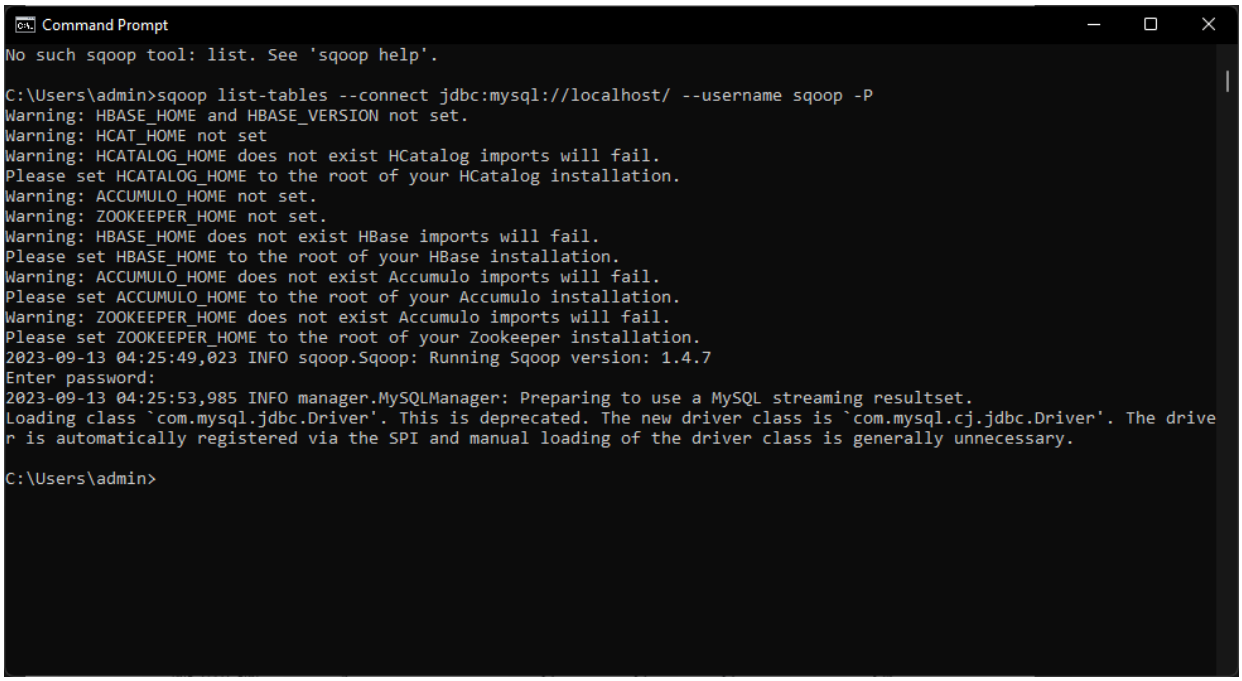

MySQL 8.1 Command Line Client
Enter password: ****
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 16
Server version: 8.1.0 MySQL Community Server - GPL
Copyright (c) 2000, 2023, Oracle and/or its affiliates.
Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
mysql> grant all privileges on test_bigdata.* to 'sqoop'@'localhost';
Query OK, 0 rows affected (0.00 sec)
mysql> grant all privileges on test_bigdata.* to 'hive'@'localhost';
Query OK, 0 rows affected (0.00 sec)
mysql>





CONCLUSION:

The experiment revolved around the setup and application of Sqoop, a crucial element in the Hadoop ecosystem. It effectively demonstrated Sqoop's functionality, which includes its ability to connect with different databases, import and export data between Hadoop and relational databases, and carry out data transformations during these operations. The experiment also highlighted Sqoop's capacity for parallel data transfer and its seamless integration with various Hadoop components. This exercise underscored Sqoop's significance in bridging the gap between Hadoop's distributed storage and relational databases, making it an essential tool for organizations that deal with diverse data sources. Becoming proficient in Sqoop provides data professionals with the necessary skills to streamline data workflows and fully leverage the potential of large-scale data projects.