Lab Exercise 11: Sqoop

Objective of this exercise is to import MySQL into HDFS using Sqoop

1. Under Hue, you have to go on to Query, then choose Editor and finally, choose Sqoop. The screen looks like, as shown below:
2. Write the statement for Get MySQL database into MySQL server

   mysql –u root –p

```
[cloudera@quickstart ~]$ mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 14
Server version: 5.1.73 Source distribution

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
```

3. Show Databases available in the MySQL

   show databases;

Output

```
mysql> show databases;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| cm                 |
| firehose           |
| hue                |
| metastore          |
| mysql              |
| nav                |
| navms              |
| oozie              |
| retail_db          |
| rman               |
| sentry             |
+--------------------+
12 rows in set (0.01 sec)
```

4. Use retail_db database and check the tables in it:

```
use retail_db

// command for list available tables in retail_db
show tables;
```

Output

```
mysql> use retail_db
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> show tables;
+---------------------+
| Tables_in_retail_db |
+---------------------+
| categories          |
| customers           |
| departments         |
| order_items         |
| orders              |
| products            |
+---------------------+
6 rows in set (0.00 sec)
```

5. List available tables in local host using Sqoop

```
// command for get local server name
Hostname -f
//command for display local host tables
sqoop list-databases --connect jdbc:mysql://localhost/ --password cloudera --
username root; //Lists the databases using Sqoop
```

Output

```
[cloudera@quickstart ~]$ sqoop list-databases --connect jdbc:mysql://localhost/ --password cloude
ra --username root;
Warning: /usr/lib/sqoop/../accumulo does not exist! Accumulo imports will fail.
Please set $ACCUMULO_HOME to the root of your Accumulo installation.
22/10/10 21:44:57 INFO sqoop.Sqoop: Running Sqoop version: 1.4.6-cdh5.12.0
22/10/10 21:44:57 WARN tool.BaseSqoopTool: Setting your password on the command-line is insecure.
 Consider using -P instead.
22/10/10 21:44:57 INFO manager.MySQLManager: Preparing to use a MySQL streaming resultset.
information_schema
cm
firehose
hue
metastore
mysql
nav
navms
oozie
retail_db
rman
sentry
[cloudera@quickstart ~]$
```

6. To connect to the MySQL database and import the customer's database to HDFS. Let's go ahead and run our first import command:

```
sqoop import --connect jdbc:mysql://quickstart:3306/retail_db --password
cloudera --username root --table departments;
```

Output

```
                Launched map tasks=4
                Other local map tasks=4
                Total time spent by all maps in occupied slots (ms)=59827
                Total time spent by all reduces in occupied slots (ms)=0
                Total time spent by all map tasks (ms)=59827
                Total vcore-milliseconds taken by all map tasks=59827
                Total megabyte-milliseconds taken by all map tasks=61262848
        Map-Reduce Framework
                Map input records=6
                Map output records=6
                Input split bytes=481
                Spilled Records=0
                Failed Shuffles=0
                Merged Map outputs=0
                GC time elapsed (ms)=1237
                CPU time spent (ms)=2110
                Physical memory (bytes) snapshot=468836352
                Virtual memory (bytes) snapshot=6040522752
                Total committed heap usage (bytes)=243007488
        File Input Format Counters
                Bytes Read=0
        File Output Format Counters
                Bytes Written=60
22/10/10 21:49:52 INFO mapreduce.ImportJobBase: Transferred 60 bytes in 31.2524 seconds (1.9199 b
ytes/sec)
22/10/10 21:49:52 INFO mapreduce.ImportJobBase: Retrieved 6 records.
[cloudera@quickstart ~]$
```

7. Check whether data is imported into HDFS or not

```
hadoop fs –ls departments
```

Output

```
[cloudera@quickstart ~]$ hadoop fs -ls departments
Found 5 items
-rw-r--r--   1 cloudera cloudera          0 2022-10-10 21:49 departments/_SUCCESS
-rw-r--r--   1 cloudera cloudera         21 2022-10-10 21:49 departments/part-m-00000
-rw-r--r--   1 cloudera cloudera         10 2022-10-10 21:49 departments/part-m-00001
-rw-r--r--   1 cloudera cloudera          7 2022-10-10 21:49 departments/part-m-00002
-rw-r--r--   1 cloudera cloudera         22 2022-10-10 21:49 departments/part-m-00003
[cloudera@quickstart ~]$
```

8. Imports the departments data to a target directory:

```
sqoop import --connect jdbc:mysql://quickstart:3306/retail_db --password cloudera --
username root --table departments --target-dir /user/cloudera/dept1;
```

9. Print imported data

```
hadoop fs -cat /user/cloudera/dept1/part*
```

Output

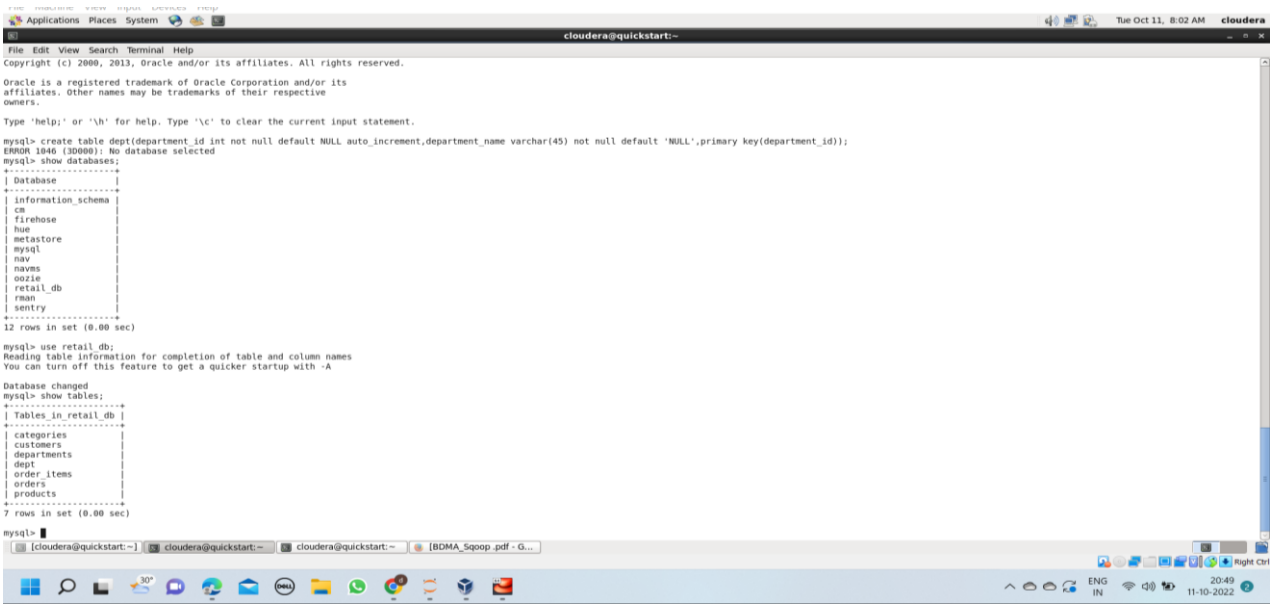
```
2,Fitness
3,Footwear
4,Apparel
5,Golf
6,Outdoors
7,Fan Shop
```

10. Export Data from HDFS to MySQL
    a. Create following table in MySQL using following scheme

       department_id int
       department_name varchar(45)

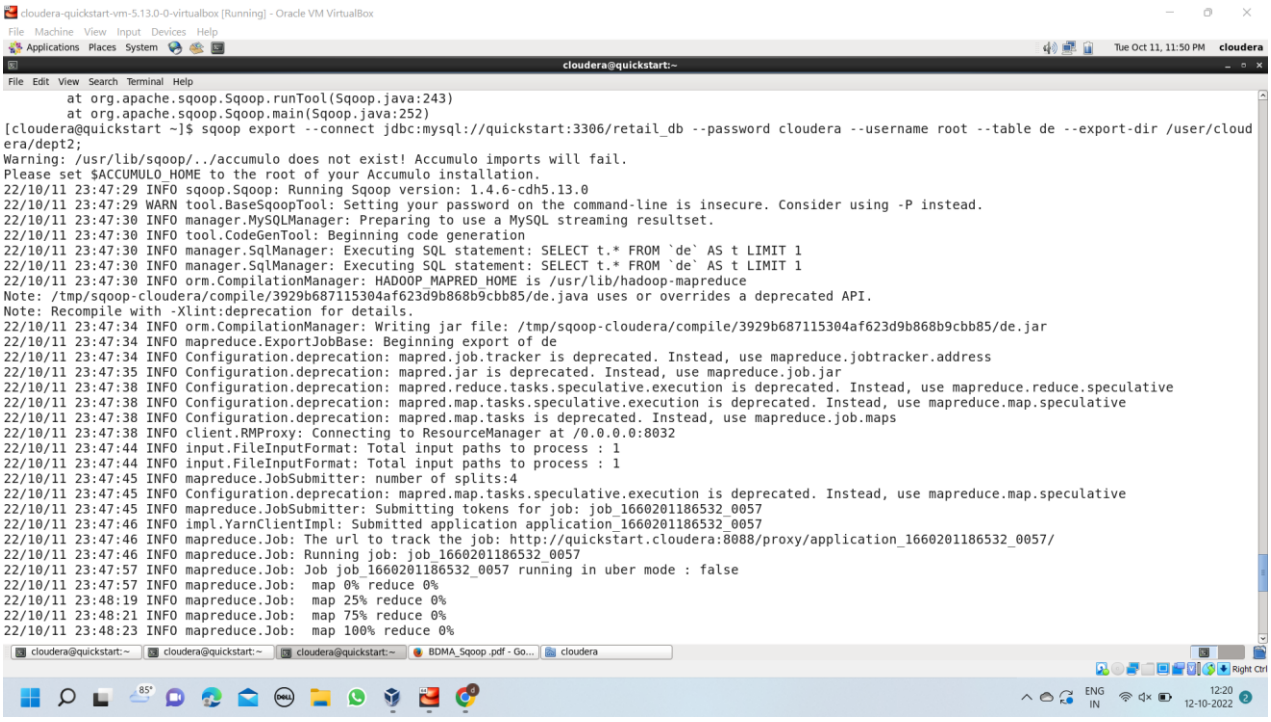
create table dept(department_id int not null default NULL auto_increment, department_name varchar(45) not null default 'NULL', primary key(department_id));

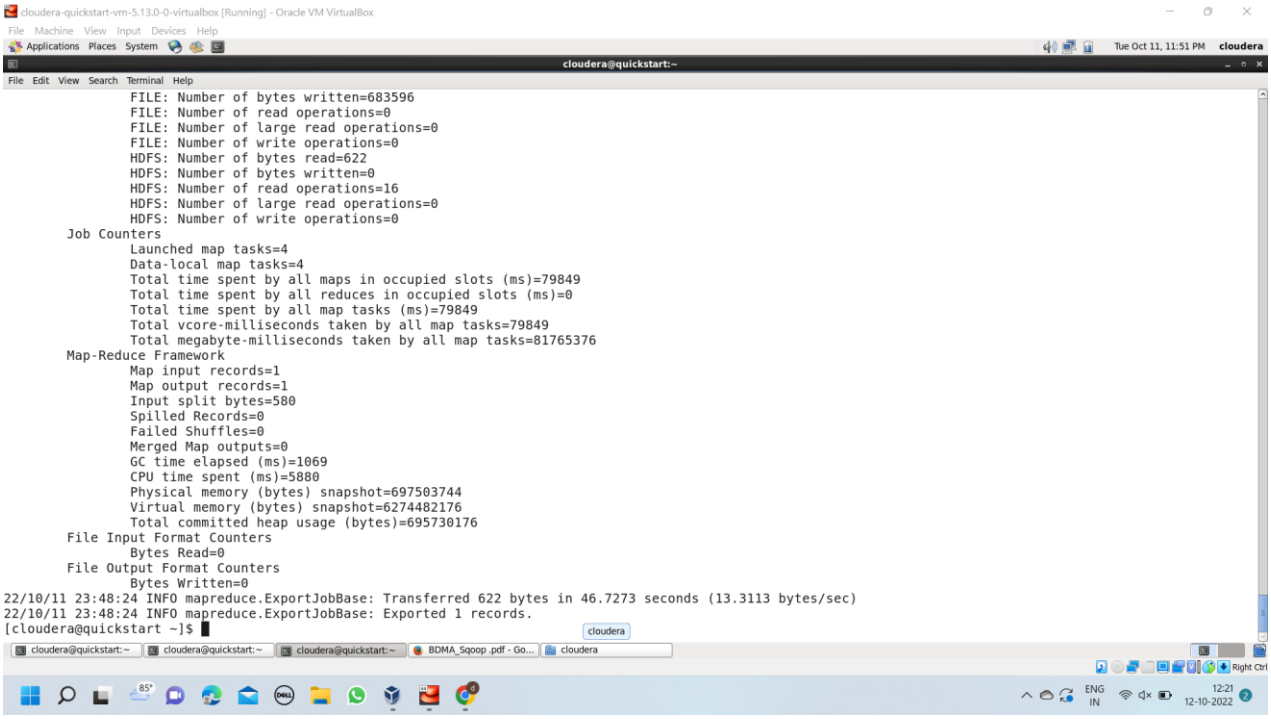
```
mysql>
mysql>
mysql>
mysql>
mysql>
mysql> create table dept(department_id int not null default NULL auto_increment,department_name varchar(45) not null default 'NULL',primary key(department_id)
Query OK, 0 rows affected (0.04 sec)
```

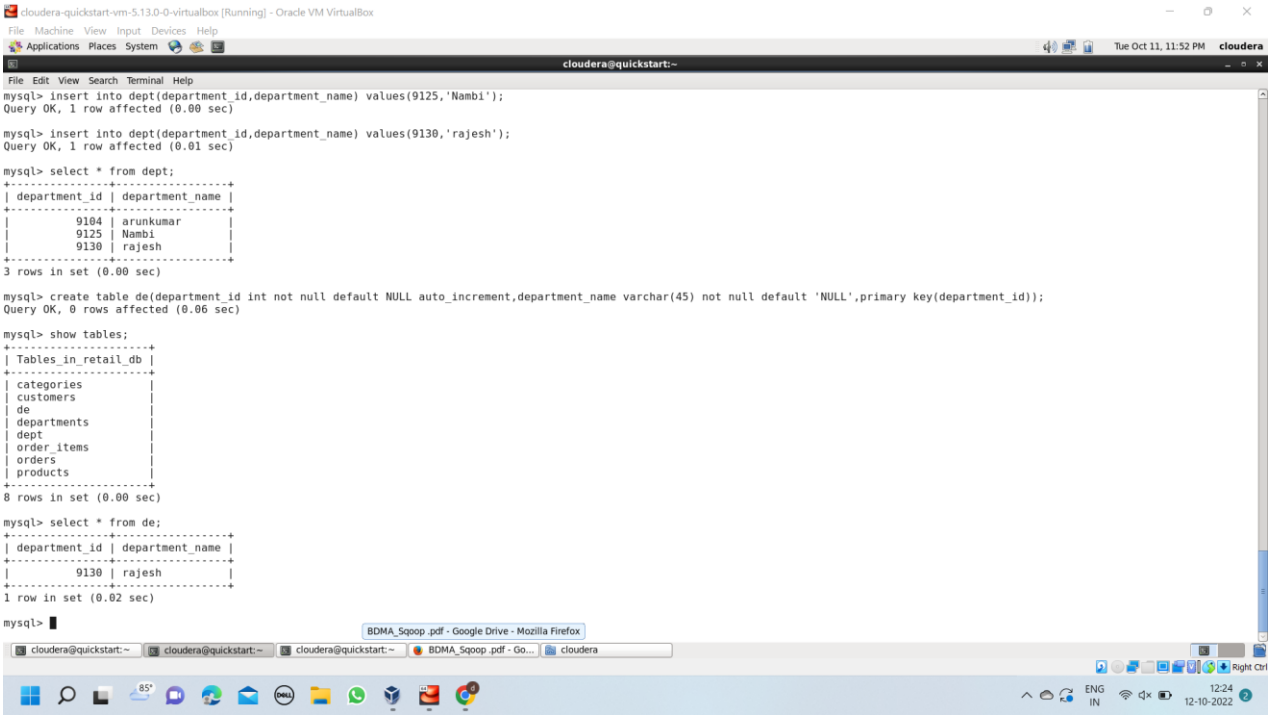


b. Export table from HDFS to MySQL

```
sqoop export --connect jdbc:mysql://quickstart:3306/retail_db --password cloudera --
username root --table dept –-export-dir /user/cloudera/dept2;
```




cloudera-quickstart-vm-5.13.0-0-virtualbox [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Applications Places System
Tue Oct 11, 11:51 PM cloudera
cloudera@quickstart:~
File Edit View Search Terminal Help
FILE: Number of bytes written=683596
FILE: Number of read operations=0
FILE: Number of large read operations=0
FILE: Number of write operations=0
HDFS: Number of bytes read=622
HDFS: Number of bytes written=0
HDFS: Number of read operations=16
HDFS: Number of large read operations=0
HDFS: Number of write operations=0
Job Counters
Launched map tasks=4
Data-local map tasks=4
Total time spent by all maps in occupied slots (ms)=79849
Total time spent by all reduces in occupied slots (ms)=0
Total time spent by all map tasks (ms)=79849
Total vcore-milliseconds taken by all map tasks=79849
Total megabyte-milliseconds taken by all map tasks=81765376
Map-Reduce Framework
Map input records=1
Map output records=1
Input split bytes=580
Spilled Records=0
Failed Shuffles=0
Merged Map outputs=0
GC time elapsed (ms)=1069
CPU time spent (ms)=5880
Physical memory (bytes) snapshot=697503744
Virtual memory (bytes) snapshot=6274482176
Total committed heap usage (bytes)=695730176
File Input Format Counters
Bytes Read=0
File Output Format Counters
Bytes Written=0
22/10/11 23:48:24 INFO mapreduce.ExportJobBase: Transferred 622 bytes in 46.7273 seconds (13.3113 bytes/sec)
22/10/11 23:48:24 INFO mapreduce.ExportJobBase: Exported 1 records.
[cloudera@quickstart ~]$
cloudera
cloudera@quickstart:~
cloudera@quickstart:~
cloudera@quickstart:~
BDMA_Sqoop .pdf - Go...
cloudera
Right Ctrl
ENG IN
12:21
12-10-2022


cloudera-quickstart-vm-5.13.0-0-virtualbox [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Applications Places System
Tue Oct 11, 11:52 PM cloudera
cloudera@quickstart:~
File Edit View Search Terminal Help
mysql> insert into dept(department_id,department_name) values(9125,'Nambi');
Query OK, 1 row affected (0.00 sec)
mysql> insert into dept(department_id,department_name) values(9130,'rajesh');
Query OK, 1 row affected (0.01 sec)
mysql> select * from dept;
+---------------+-----------------+
| department_id | department_name |
+---------------+-----------------+
9104	arunkumar
9125	Nambi
9130	rajesh
+---------------+-----------------+
3 rows in set (0.00 sec)
mysql> create table de(department_id int not null default NULL auto_increment,department_name varchar(45) not null default 'NULL',primary key(department_id));
Query OK, 0 rows affected (0.06 sec)
mysql> show tables;
+---------------------+
| Tables_in_retail_db |
+---------------------+
| categories |
| customers |
| de |
| departments |
| dept |
| order_items |
| orders |
| products |
+---------------------+
8 rows in set (0.00 sec)
mysql> select * from de;
+---------------+-----------------+
| department_id | department_name |
+---------------+-----------------+
| 9130 | rajesh |
+---------------+-----------------+
1 row in set (0.02 sec)
mysql>
BDMA_Sqoop .pdf - Google Drive - Mozilla Firefox
cloudera@quickstart:~
cloudera@quickstart:~
cloudera@quickstart:~
BDMA_Sqoop .pdf - Go...
cloudera
Right Ctrl
ENG IN
12:24
12-10-2022

Notes