

Apache Sqoop

Exercise 3



IMPORTANT

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Sqoop Export

Login to MySQL

```
mysql -u root -p
```



Enter password: cloudera

Create a database (banking) and use it in MySQL:

```
create database banking;
```

```
use banking;
```



Create a table (card_transactions) inside banking database of MySQL:

```
CREATE TABLE card_transactions (  
  card_id BIGINT,  
  member_id BIGINT,  
  amount INT(10),  
  postcode INT(10),  
  pos_id BIGINT,  
  transaction_dt varchar(255),  
  status varchar(255),  
  PRIMARY KEY (card_id, transaction_dt)  
);
```

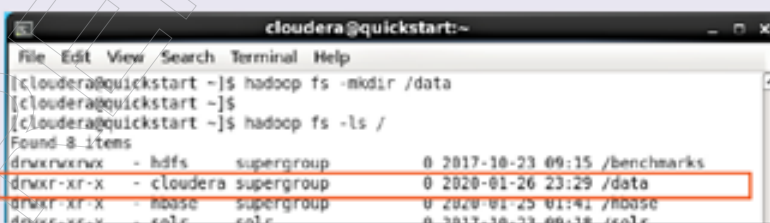
composite primary key



```
cloudera@quickstart:~  
File Edit View Search Terminal Help  
mysql> CREATE TABLE card_transactions (  
  -> card_id BIGINT,  
  -> member_id BIGINT,  
  -> amount INT(10),  
  -> postcode INT(10),  
  -> pos_id BIGINT,  
  -> transaction_dt varchar(255),  
  -> status varchar(255),  
  -> PRIMARY KEY (card_id, transaction_dt)  
  -> );  
Query OK, 0 rows affected (0.09 sec)  
mysql>
```

Create a directory inside HDFS:

```
hadoop fs -mkdir /data
```

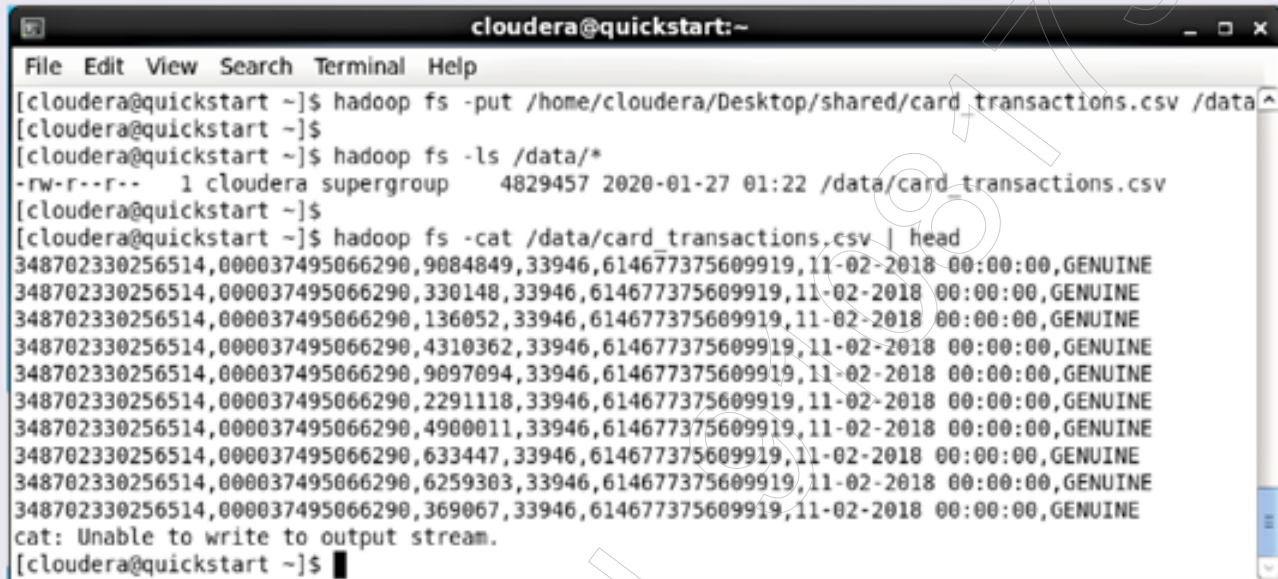


```
cloudera@quickstart:~  
File Edit View Search Terminal Help  
[cloudera@quickstart ~]$ hadoop fs -mkdir /data  
[cloudera@quickstart ~]$  
[cloudera@quickstart ~]$ hadoop fs -ls /  
Found 8 items  
drwxrwxrwx - hdfs supergroup 0 2017-10-23 09:15 /benchmarks  
drwxr-xr-x - cloudera supergroup 0 2020-01-26 23:29 /data  
drwxr-xr-x - hbase supergroup 0 2020-01-25 01:41 /hbase  
drwxr-xr-x - colr colr 0 2017-10-23 09:18 /colr
```

No need to create, if already available

Move the csv file (*card_transactions*) to the HDFS data directory:

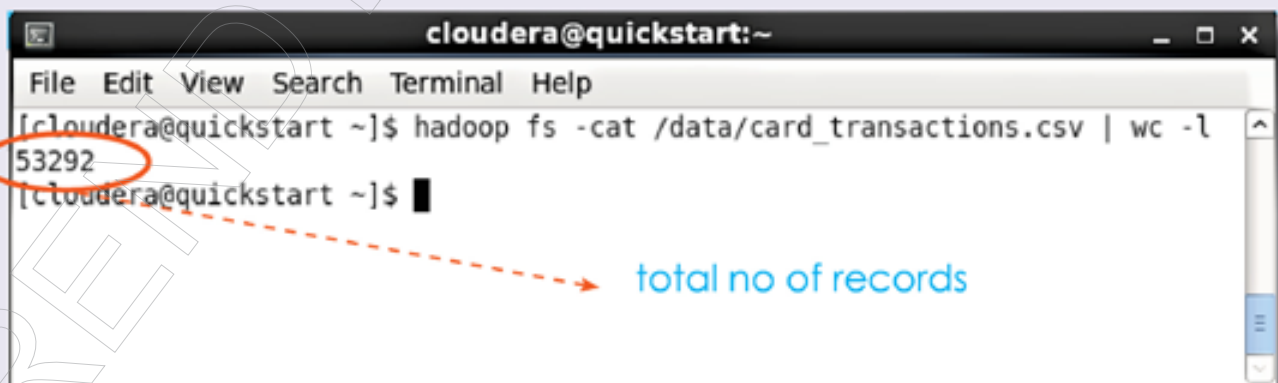
```
hadoop fs -put /home/cloudera/Desktop/shared/card_transactions.csv /data
```



```
cloudera@quickstart:~  
File Edit View Search Terminal Help  
[cloudera@quickstart ~]$ hadoop fs -put /home/cloudera/Desktop/shared/card_transactions.csv /data  
[cloudera@quickstart ~]$  
[cloudera@quickstart ~]$ hadoop fs -ls /data/*  
-rw-r--r-- 1 cloudera supergroup 4829457 2020-01-27 01:22 /data/card_transactions.csv  
[cloudera@quickstart ~]$  
[cloudera@quickstart ~]$ hadoop fs -cat /data/card_transactions.csv | head  
348702330256514,000037495066290,9084849,33946,614677375609919,11-02-2018 00:00:00,GENUINE  
348702330256514,000037495066290,330148,33946,614677375609919,11-02-2018 00:00:00,GENUINE  
348702330256514,000037495066290,136052,33946,614677375609919,11-02-2018 00:00:00,GENUINE  
348702330256514,000037495066290,4310362,33946,614677375609919,11-02-2018 00:00:00,GENUINE  
348702330256514,000037495066290,9097094,33946,614677375609919,11-02-2018 00:00:00,GENUINE  
348702330256514,000037495066290,2291118,33946,614677375609919,11-02-2018 00:00:00,GENUINE  
348702330256514,000037495066290,4900011,33946,614677375609919,11-02-2018 00:00:00,GENUINE  
348702330256514,000037495066290,633447,33946,614677375609919,11-02-2018 00:00:00,GENUINE  
348702330256514,000037495066290,6259303,33946,614677375609919,11-02-2018 00:00:00,GENUINE  
348702330256514,000037495066290,369067,33946,614677375609919,11-02-2018 00:00:00,GENUINE  
cat: Unable to write to output stream.  
[cloudera@quickstart ~]$
```

To check number of records present in a HDFS file (*card_transactions*) :

```
hadoop fs -cat /data/card_transactions.csv | wc -l
```



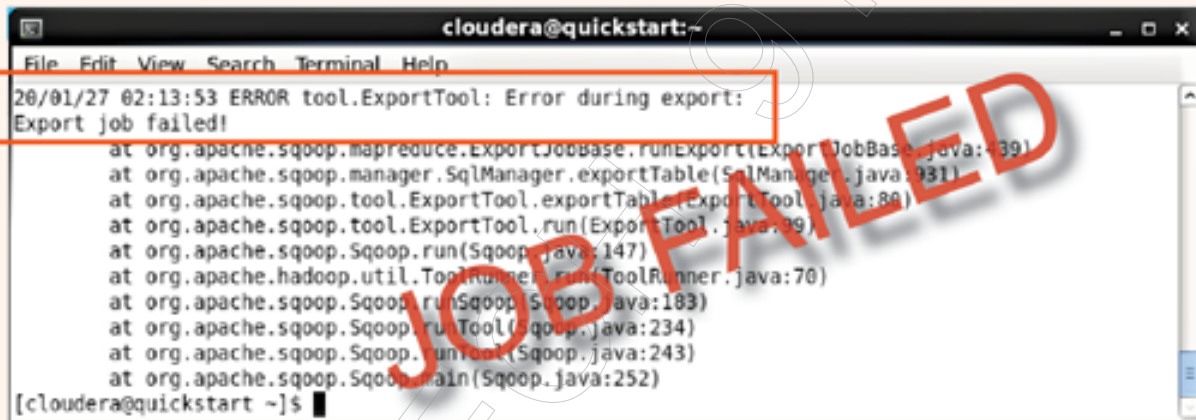
```
cloudera@quickstart:~  
File Edit View Search Terminal Help  
[cloudera@quickstart ~]$ hadoop fs -cat /data/card_transactions.csv | wc -l  
53292  
[cloudera@quickstart ~]$
```

total no of records

Move data from HDFS to Sqoop using sqoop export:

Now, we will try to export the HDFS file (card_transactions.csv) to newly created MySQL table **card_transactions** using **Sqoop export**.

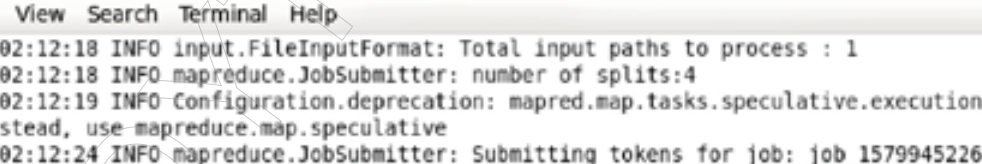
```
sqoop export \  
--connect jdbc:mysql://quickstart.cloudera:3306/banking \  
--username root \  
--password cloudera \  
--table card_transactions \  
--export-dir /data/card_transactions.csv \  
--fields-terminated-by ','
```



```
cloudera@quickstart:~  
File Edit View Search Terminal Help  
20/01/27 02:13:53 ERROR tool.ExportTool: Error during export:  
Export job failed!  
at org.apache.sqoop.mapreduce.ExportJobBase.runExport(ExportJobBase.java:39)  
at org.apache.sqoop.manager.SqlManager.exportTable(SqlManager.java:931)  
at org.apache.sqoop.tool.ExportTool.exportTable(ExportTool.java:86)  
at org.apache.sqoop.tool.ExportTool.run(ExportTool.java:99)  
at org.apache.sqoop.Sqoop.run(Sqoop.java:147)  
at org.apache.hadoop.util.ToolRunner.run(ToolRunner.java:70)  
at org.apache.sqoop.Sqoop.runSqoop(Sqoop.java:183)  
at org.apache.sqoop.Sqoop.runTool(Sqoop.java:234)  
at org.apache.sqoop.Sqoop.runTool(Sqoop.java:243)  
at org.apache.sqoop.Sqoop.main(Sqoop.java:252)  
[cloudera@quickstart ~]$
```

Note: The Job will fail

How to track the failed job:

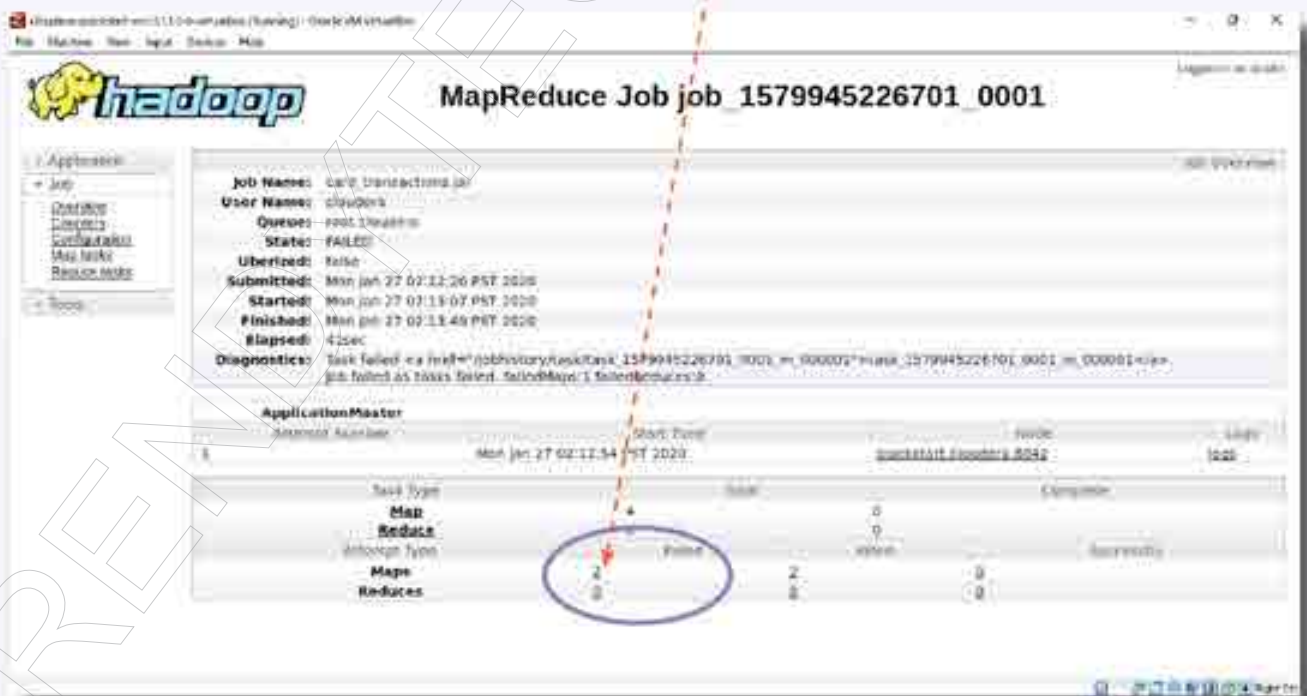
- 
- The screenshot shows a terminal window with the title bar 'cloudera@quickstart:~'. The terminal displays the following log output:
- ```
20/01/27 02:12:18 INFO input.FileInputFormat: Total input paths to process : 1
20/01/27 02:12:18 INFO mapreduce.JobSubmitter: number of splits:4
20/01/27 02:12:19 INFO Configuration.deprecation: mapred.map.tasks.speculative.execution is deprecated. Instead, use mapreduce.map.speculative
20/01/27 02:12:24 INFO mapreduce.JobSubmitter: Submitting tokens for job: job_1579945226701_0001
20/01/27 02:12:28 INFO impl.YarnClientImpl: Submitted application application_1579945226701_0001
20/01/27 02:12:28 INFO mapreduce.Job: The url to track the job: http://quickstart.cloudera:8080/p
roxy/application_1579945226701_0001/
20/01/27 02:12:28 INFO mapreduce.Job: application_1579945226701_0001 running in uber mode : false
20/01/27 02:13:09 INFO mapreduce.Job:
20/01/27 02:13:09 INFO mapreduce.Job:
20/01/27 02:13:51 INFO mapreduce.Job:
20/01/27 02:13:52 INFO mapreduce.Job:
20/01/27 02:13:53 INFO mapreduce.Job:
Task failed task_1579945226701_0001
Job failed as tasks failed. failedMa
```
- A context menu is open over the terminal text, with the following options:
- Open Terminal
  - Open Tab
  - Close Window
  - Copy
  - Paste
  - Profiles
  - Show Megaubar



- Go to the web browser and **paste** the url and enter

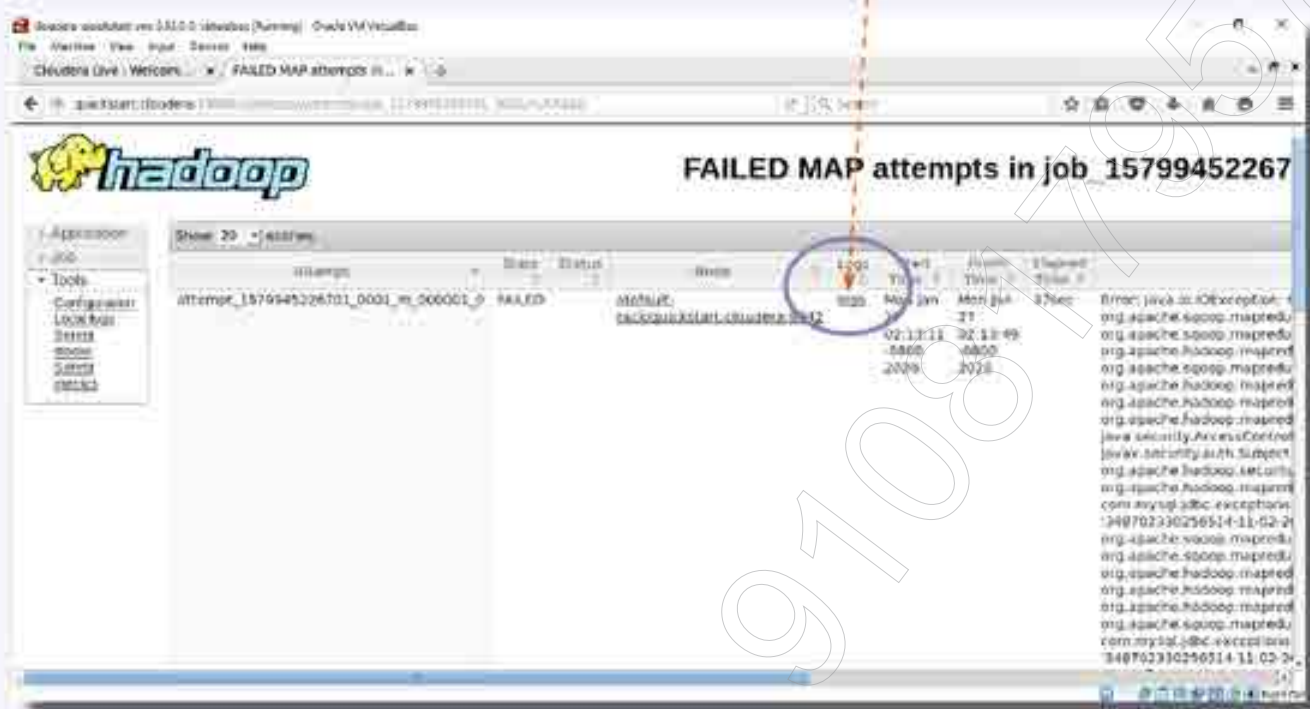


- Job history will show all details - **click** the hyperlink under **failed**





- In the FAILED MAP attempts window - **click** on logs under **logs**

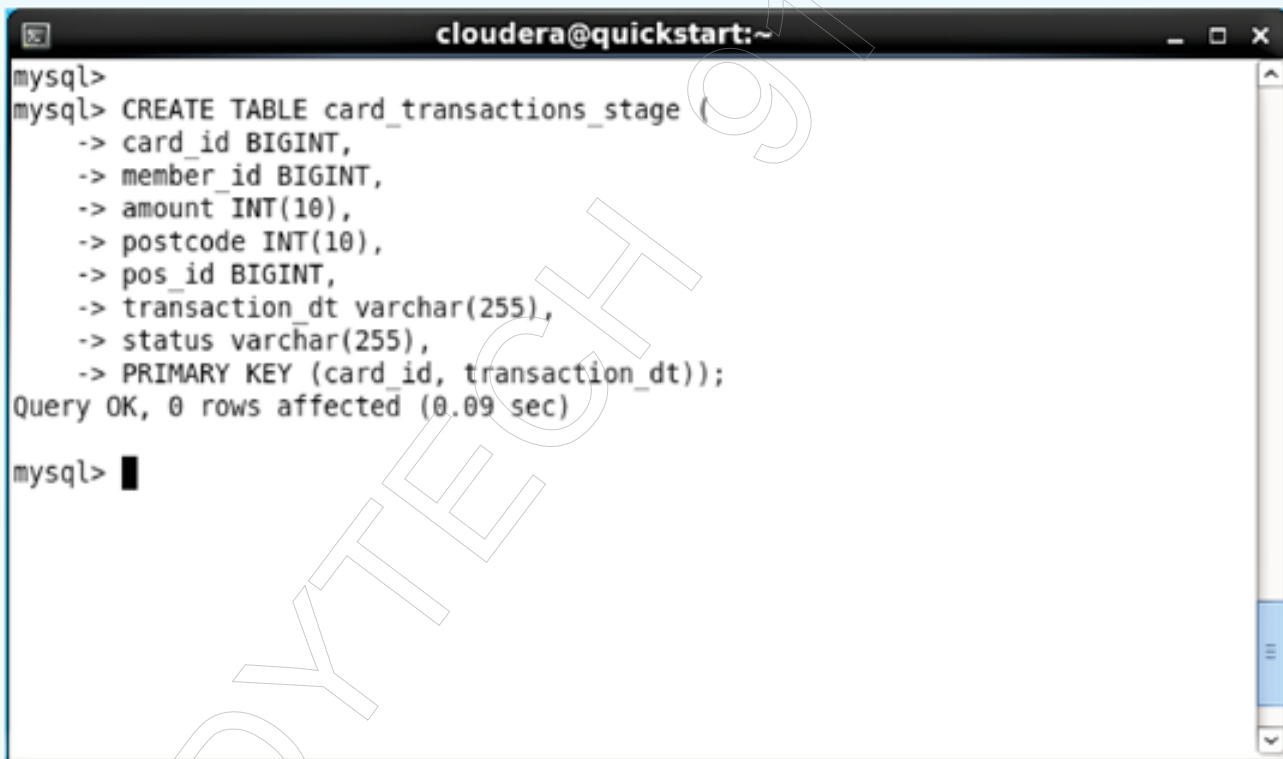


- In the Log window, you will find the actual **errors**



## Create a staging table `card_transactions_stage` in mysql:

```
CREATE TABLE card_transactions_stage (
 card_id BIGINT,
 member_id BIGINT,
 amount INT(10),
 postcode INT(10),
 pos_id BIGINT,
 transaction_dt varchar(255),
 status varchar(255),
 PRIMARY KEY (card_id, transaction_dt));
```

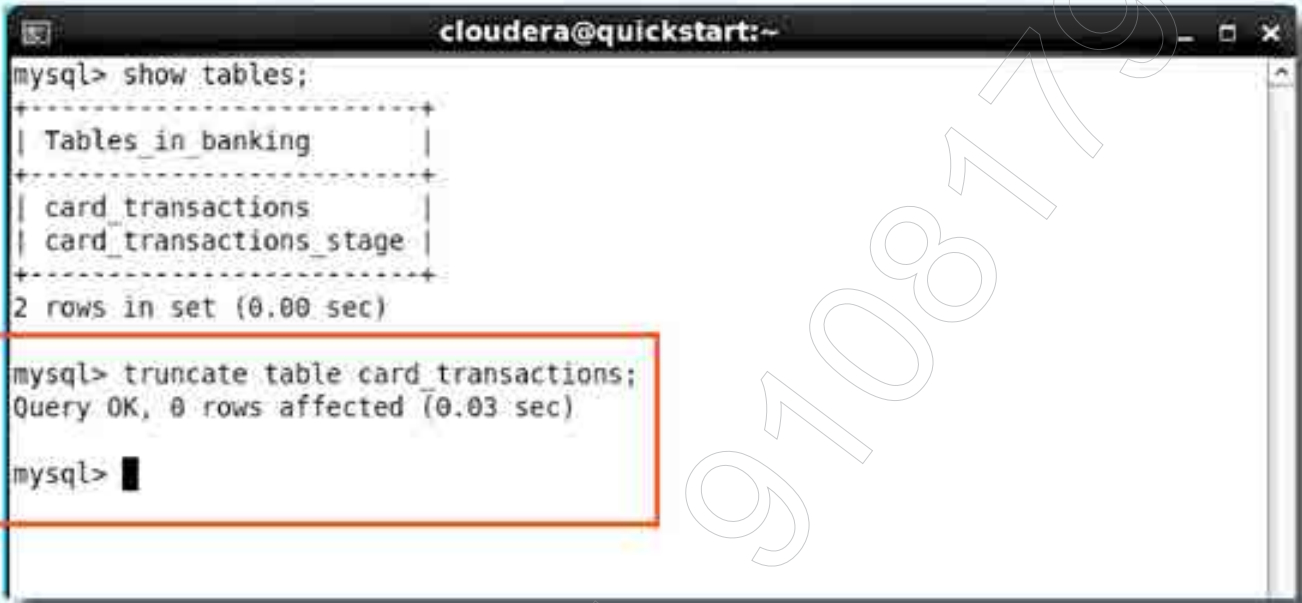


The screenshot shows a terminal window titled "cloudera@quickstart:~". Inside, a MySQL prompt "mysql>" is followed by the command to create the table "card\_transactions\_stage". The command is displayed in a multi-line format with arrows indicating continuation. The output shows "Query OK, 0 rows affected (0.09 sec)". The prompt "mysql>" is followed by a cursor.

```
mysql>
mysql> CREATE TABLE card_transactions_stage (
-> card_id BIGINT,
-> member_id BIGINT,
-> amount INT(10),
-> postcode INT(10),
-> pos_id BIGINT,
-> transaction_dt varchar(255),
-> status varchar(255),
-> PRIMARY KEY (card_id, transaction_dt));
Query OK, 0 rows affected (0.09 sec)
mysql> █
```

## Truncate *card\_transactions* table from mysql:

```
truncate table card_transactions;
```



A terminal window titled 'cloudera@quickstart:~' showing MySQL commands and output. The first command is 'mysql> show tables;', which returns a table with two rows: 'Tables\_in\_banking' and 'card\_transactions', and 'card\_transactions\_stage'. The second command is 'mysql> truncate table card\_transactions;', which returns 'Query OK, 0 rows affected (0.03 sec)'. The third command is 'mysql>' followed by a cursor. A red box highlights the second command and its output.

```
mysql> show tables;
+-----+
| Tables_in_banking |
+-----+
| card_transactions |
| card_transactions_stage |
+-----+
2 rows in set (0.00 sec)

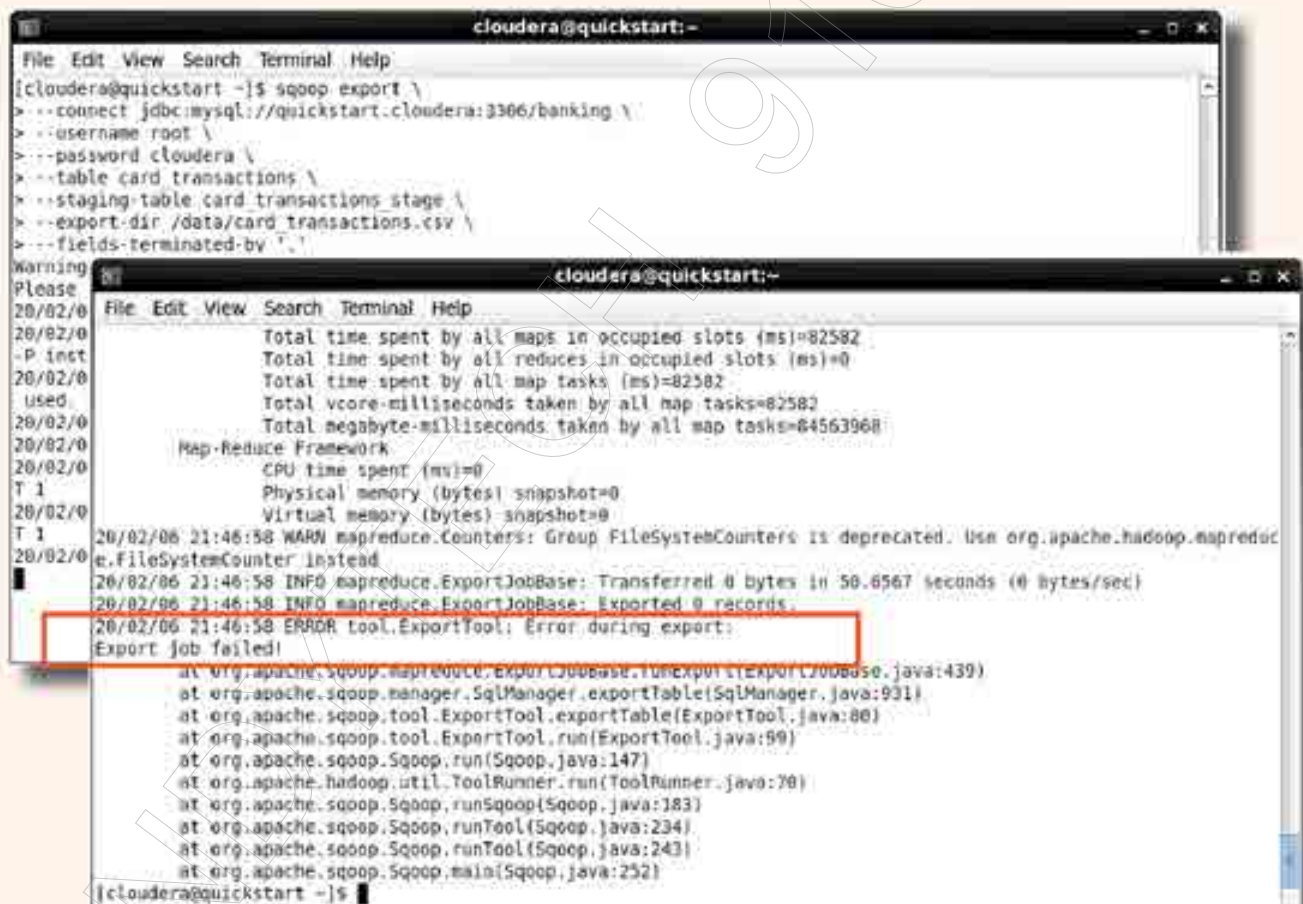
mysql> truncate table card_transactions;
Query OK, 0 rows affected (0.03 sec)

mysql> █
```



## Export data from hdfs to mysql using staging table:

```
scoop export \
--connect jdbc:mysql://quickstart.cloudera:3306/banking \
--username root \
--password cloudera \
--table card_transactions \
--staging-table card_transactions_stage \
--export-dir /data/card_transactions.csv \
--fields-terminated-by ','
```

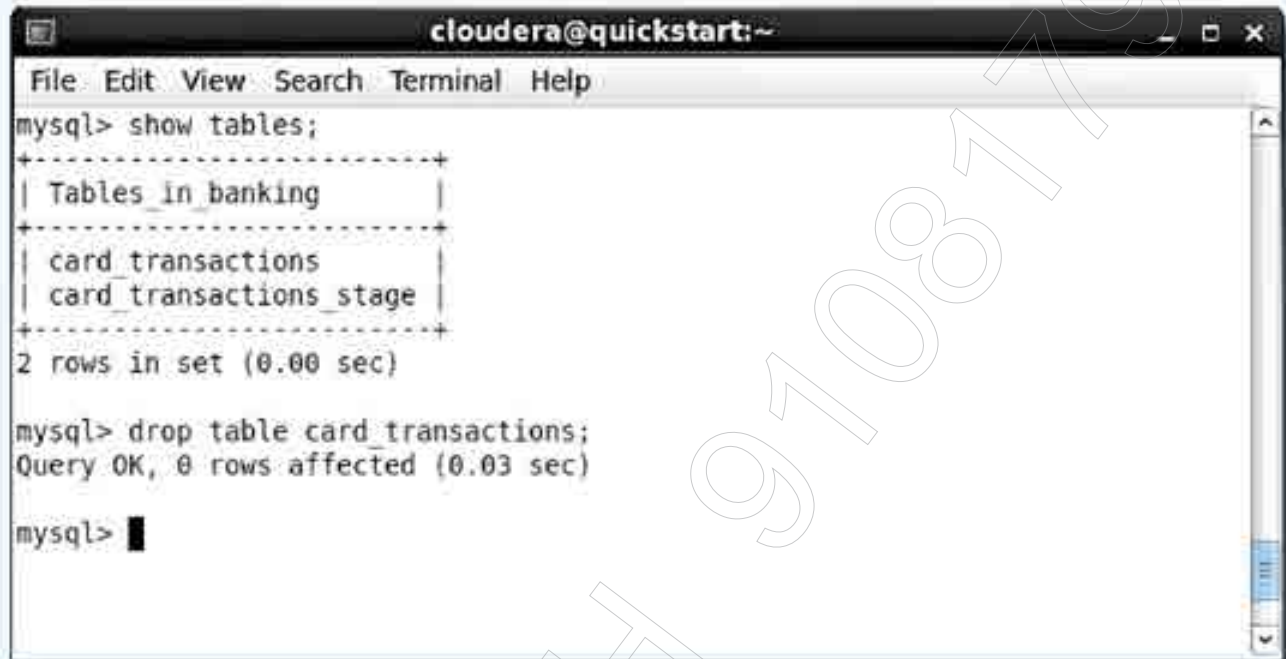


```
cloudera@quickstart:~
File Edit View Search Terminal Help
[cloudera@quickstart ~]$ scoop export \
> --connect jdbc:mysql://quickstart.cloudera:3306/banking \
> --username root \
> --password cloudera \
> --table card_transactions \
> --staging-table card_transactions_stage \
> --export-dir /data/card_transactions.csv \
> --fields-terminated-by ','
Warning
Please
20/02/06 21:46:58 INFO mapreduce.ExportJobBase: Transferred 0 bytes in 50.6567 seconds (0 bytes/sec)
20/02/06 21:46:58 INFO mapreduce.ExportJobBase: Exported 0 records.
20/02/06 21:46:58 ERROR tool.ExportTool: Error during export:
Export job failed!
at org.apache.scoop.mapreduce.ExportJobBase.runExport(ExportJobBase.java:439)
at org.apache.scoop.manager.SqlManager.exportTable(SqlManager.java:931)
at org.apache.scoop.tool.ExportTool.exportTable(ExportTool.java:88)
at org.apache.scoop.tool.ExportTool.run(ExportTool.java:99)
at org.apache.scoop.Scoop.run(Scoop.java:147)
at org.apache.hadoop.util.ToolRunner.run(ToolRunner.java:70)
at org.apache.scoop.Scoop.runScoop(Scoop.java:183)
at org.apache.scoop.Scoop.runTool(Scoop.java:234)
at org.apache.scoop.Scoop.runTool(Scoop.java:243)
at org.apache.scoop.Scoop.main(Scoop.java:252)
[cloudera@quickstart ~]$
```



Drop both the staging and the actual table from mysql:

```
drop table card_transactions;
```



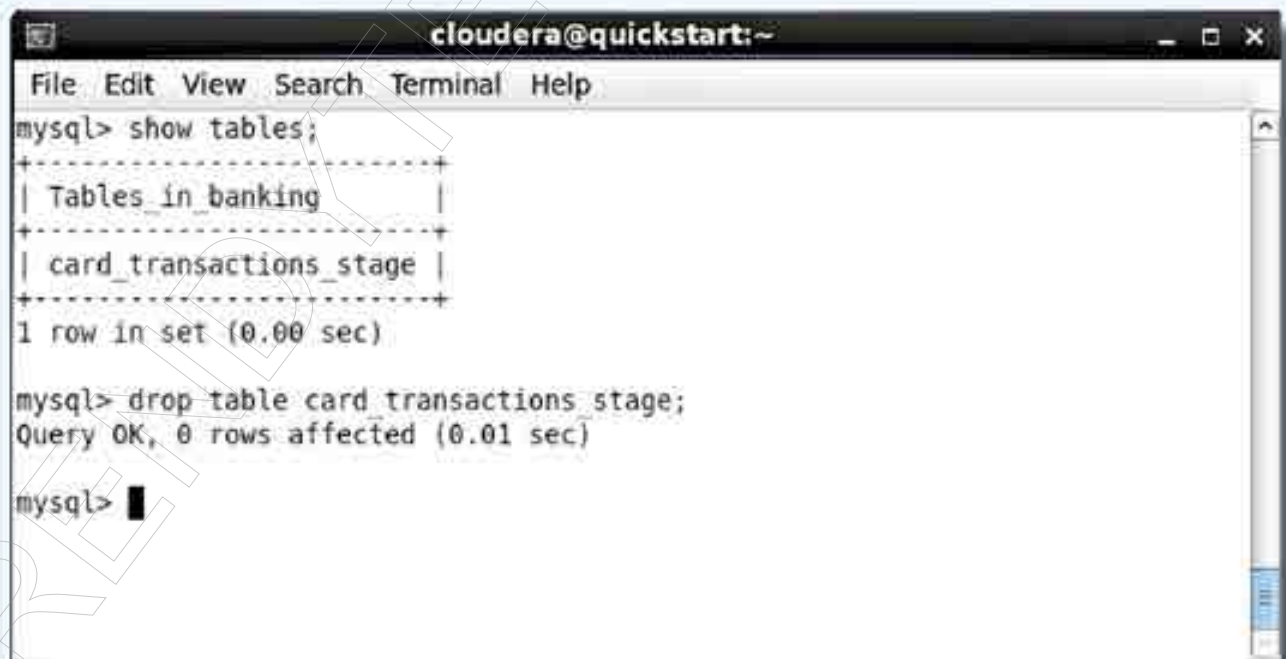
A terminal window titled 'cloudera@quickstart:~' with a menu bar (File, Edit, View, Search, Terminal, Help). The terminal shows the following commands and output:

```
mysql> show tables;
+-----+
| Tables_in_banking |
+-----+
| card_transactions |
| card_transactions_stage |
+-----+
2 rows in set (0.00 sec)

mysql> drop table card_transactions;
Query OK, 0 rows affected (0.03 sec)

mysql> █
```

```
drop table card_transactions_stage;
```



A terminal window titled 'cloudera@quickstart:~' with a menu bar (File, Edit, View, Search, Terminal, Help). The terminal shows the following commands and output:

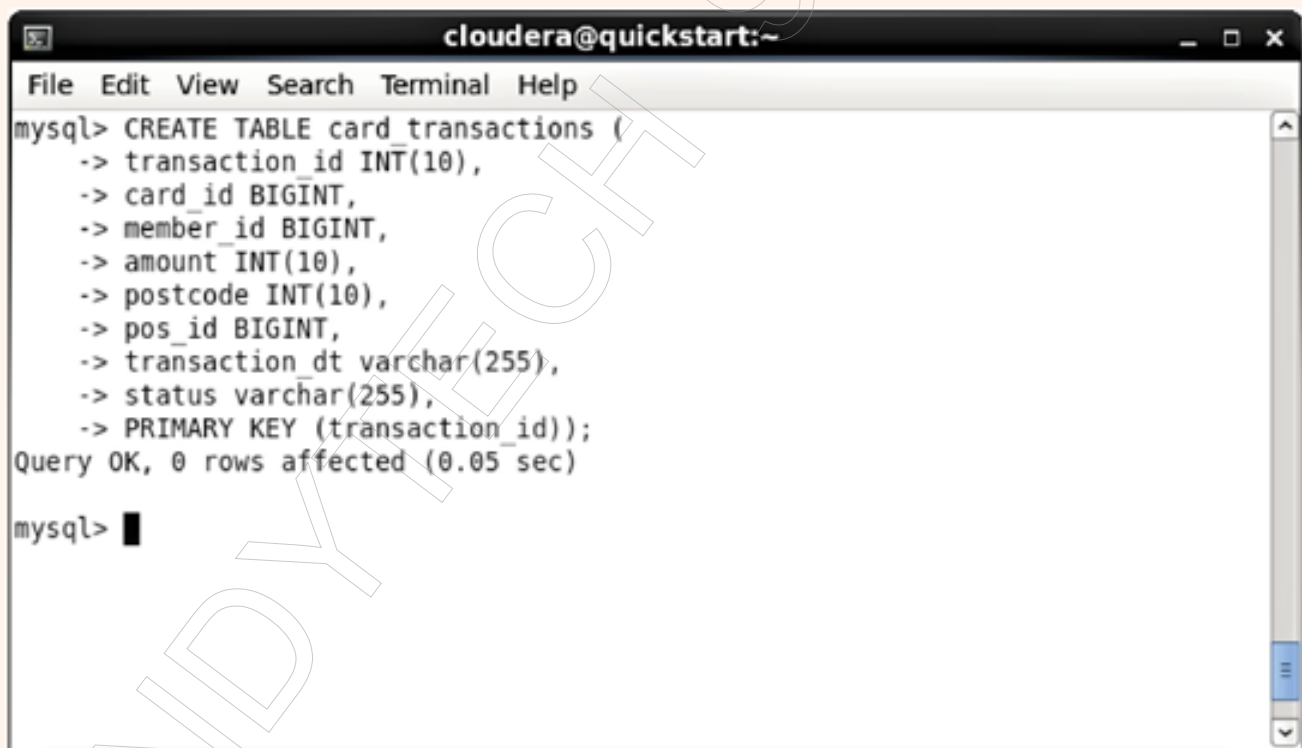
```
mysql> show tables;
+-----+
| Tables_in_banking |
+-----+
| card_transactions_stage |
+-----+
1 row in set (0.00 sec)

mysql> drop table card_transactions stage;
Query OK, 0 rows affected (0.01 sec)

mysql> █
```

Create again same two (*card\_transactions* & *card\_transactions\_stage*) tables in banking database of MySQL:

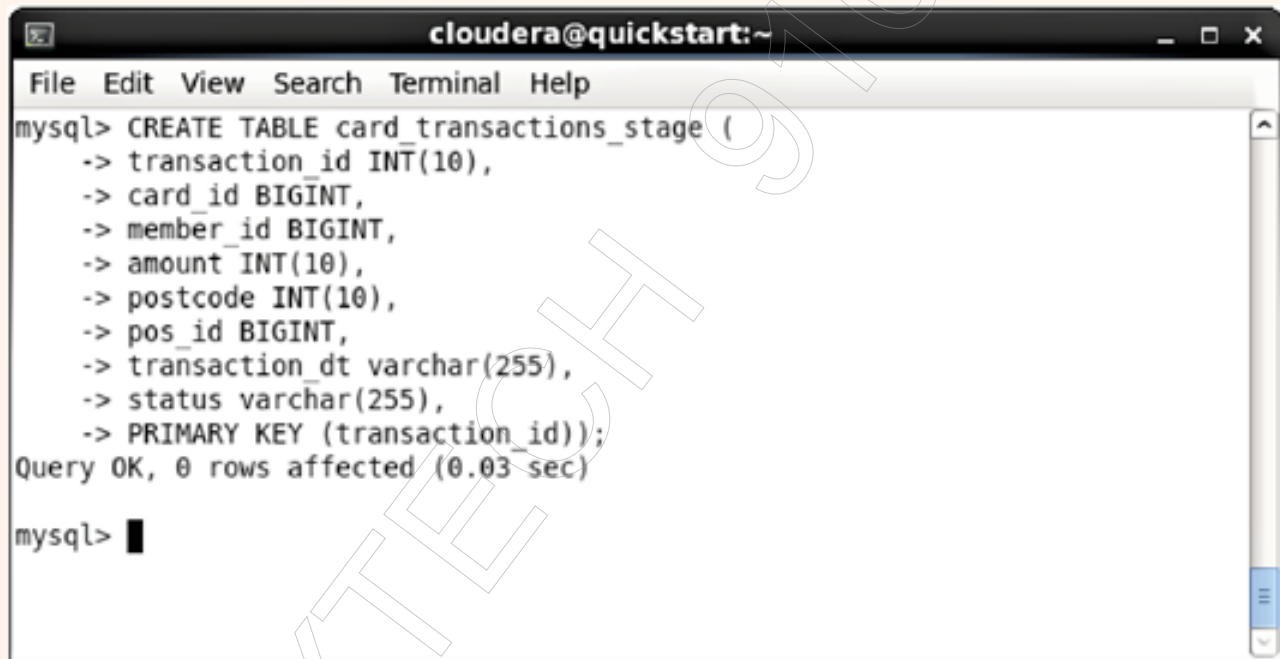
```
CREATE TABLE card_transactions (
transaction_id INT(10),
card_id BIGINT,
member_id BIGINT,
amount INT(10),
postcode INT(10),
pos_id BIGINT,
transaction_dt varchar(255),
status varchar(255),
PRIMARY KEY (transaction_id));
```



The screenshot shows a terminal window titled "cloudera@quickstart:~". The terminal displays the execution of a MySQL command to create a table named "card\_transactions". The command is entered in multiple lines, and the terminal shows the command being executed line by line. The output indicates that the query was successful, with 0 rows affected in 0.05 seconds. The terminal prompt "mysql>" is visible at the bottom.

```
cloudera@quickstart:~
File Edit View Search Terminal Help
mysql> CREATE TABLE card_transactions (
-> transaction_id INT(10),
-> card_id BIGINT,
-> member_id BIGINT,
-> amount INT(10),
-> postcode INT(10),
-> pos_id BIGINT,
-> transaction_dt varchar(255),
-> status varchar(255),
-> PRIMARY KEY (transaction_id));
Query OK, 0 rows affected (0.05 sec)
mysql> █
```

```
CREATE TABLE card_transactions_stage (
transaction_id INT(10),
card_id BIGINT,
member_id BIGINT,
amount INT(10),
postcode INT(10),
pos_id BIGINT,
transaction_dt varchar(255),
status varchar(255),
PRIMARY KEY (transaction_id));
```

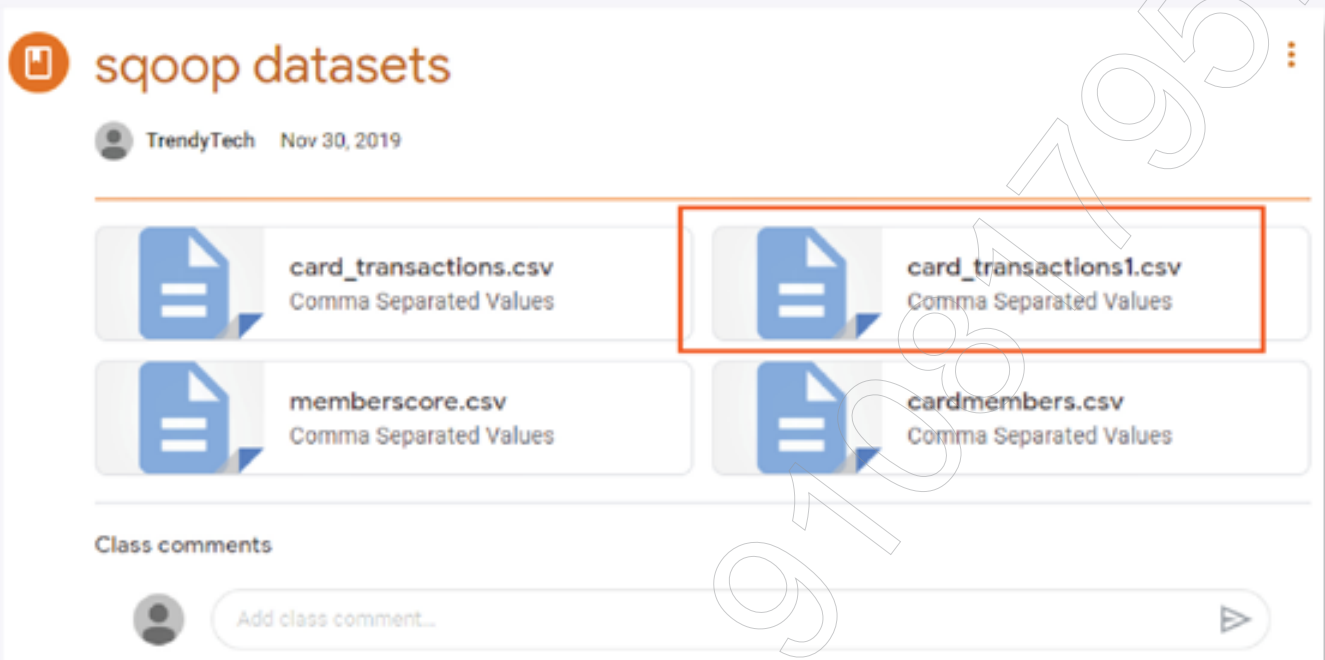


The screenshot shows a terminal window titled "cloudera@quickstart:~". The window contains a MySQL command prompt where the following SQL command was entered and executed:

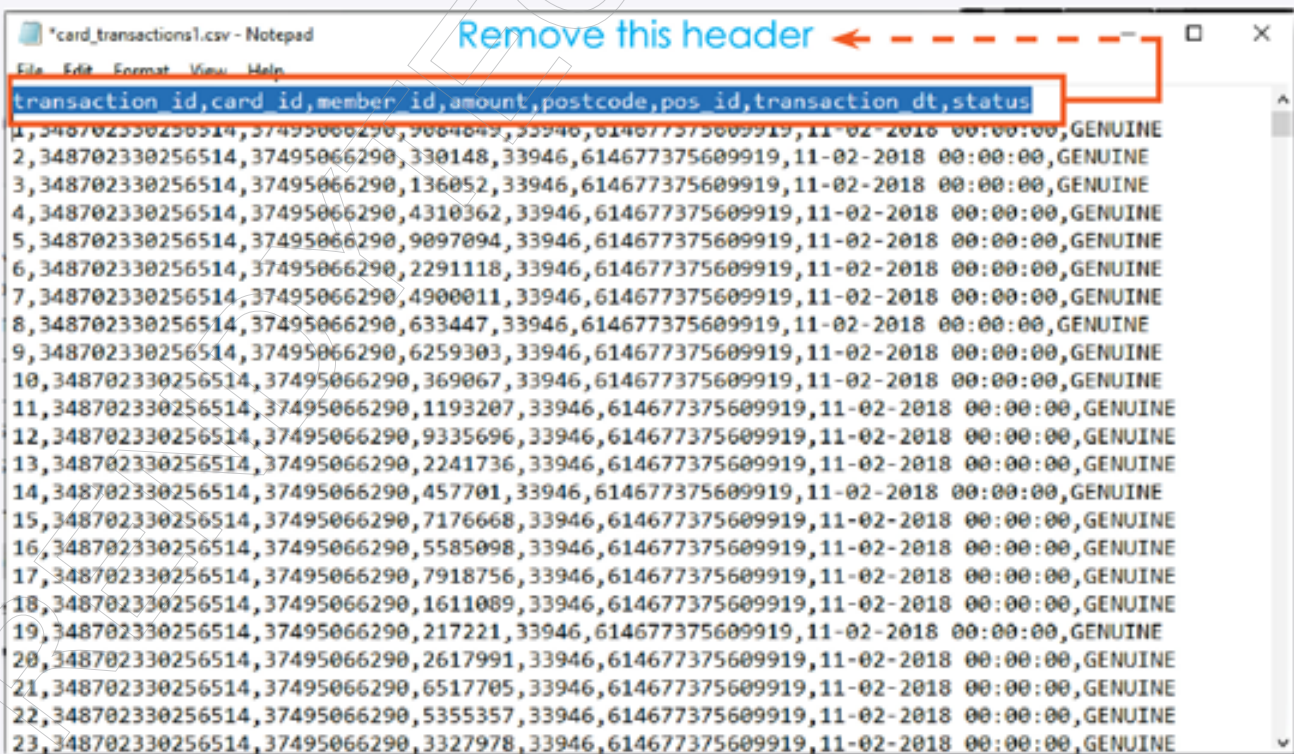
```
mysql> CREATE TABLE card_transactions_stage (
-> transaction_id INT(10),
-> card_id BIGINT,
-> member_id BIGINT,
-> amount INT(10),
-> postcode INT(10),
-> pos_id BIGINT,
-> transaction_dt varchar(255),
-> status varchar(255),
-> PRIMARY KEY (transaction_id));
Query OK, 0 rows affected (0.03 sec)
mysql> █
```



Go to [Google classroom](#) and download the *card\_transactions1.csv*:



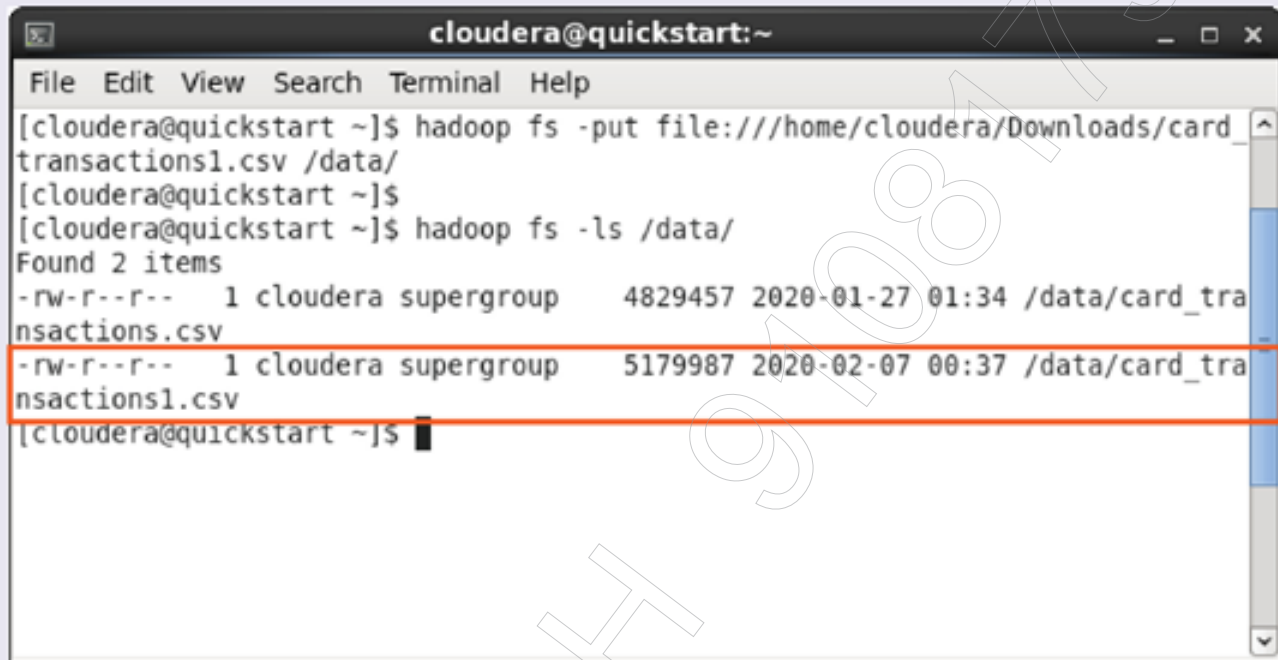
Remove the header from the *card\_transactions1.csv* file and save:





Move the *card\_transactions1.csv* file to the HDFS data directory:

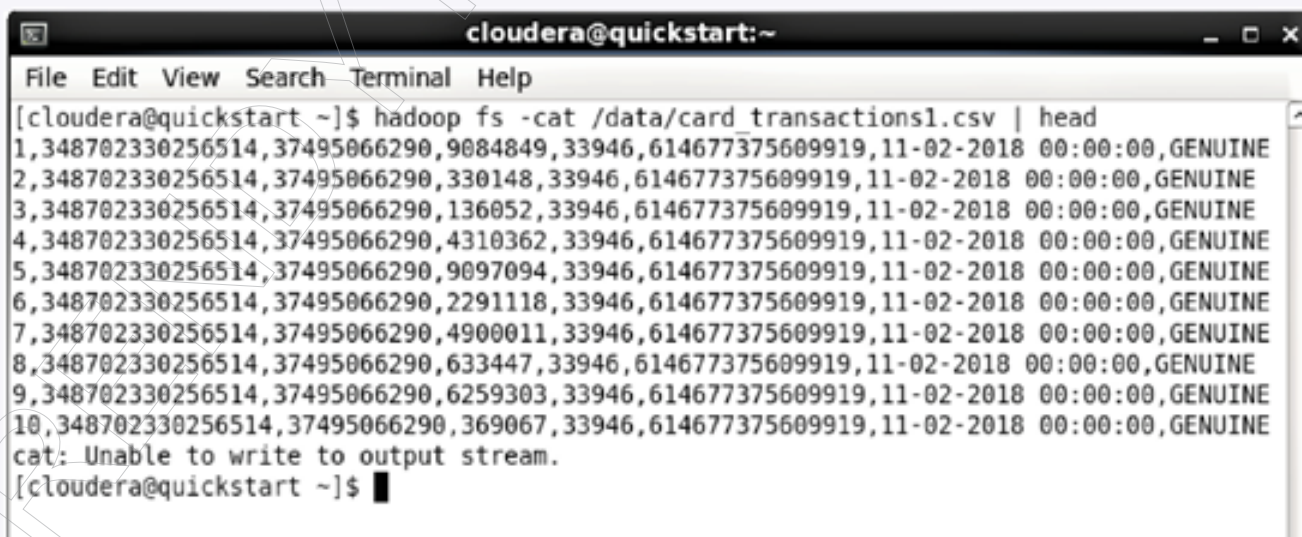
```
hadoop fs -put file:///home/cloudera/Downloads/card_transactions1.csv /data/
```



A terminal window titled 'cloudera@quickstart:~' showing the execution of Hadoop commands. The first command is 'hadoop fs -put file:///home/cloudera/Downloads/card\_transactions1.csv /data/'. The second command is 'hadoop fs -ls /data/'. The output shows two files in the directory: 'card\_transactions.csv' and 'card\_transactions1.csv'. The second file is highlighted with a red box.

```
cloudera@quickstart:~
File Edit View Search Terminal Help
[cloudera@quickstart ~]$ hadoop fs -put file:///home/cloudera/Downloads/card_transactions1.csv /data/
[cloudera@quickstart ~]$
[cloudera@quickstart ~]$ hadoop fs -ls /data/
Found 2 items
-rw-r--r-- 1 cloudera supergroup 4829457 2020-01-27 01:34 /data/card_transactions.csv
-rw-r--r-- 1 cloudera supergroup 5179987 2020-02-07 00:37 /data/card_transactions1.csv
[cloudera@quickstart ~]$
```

The *card\_transactions* table data should look like below:

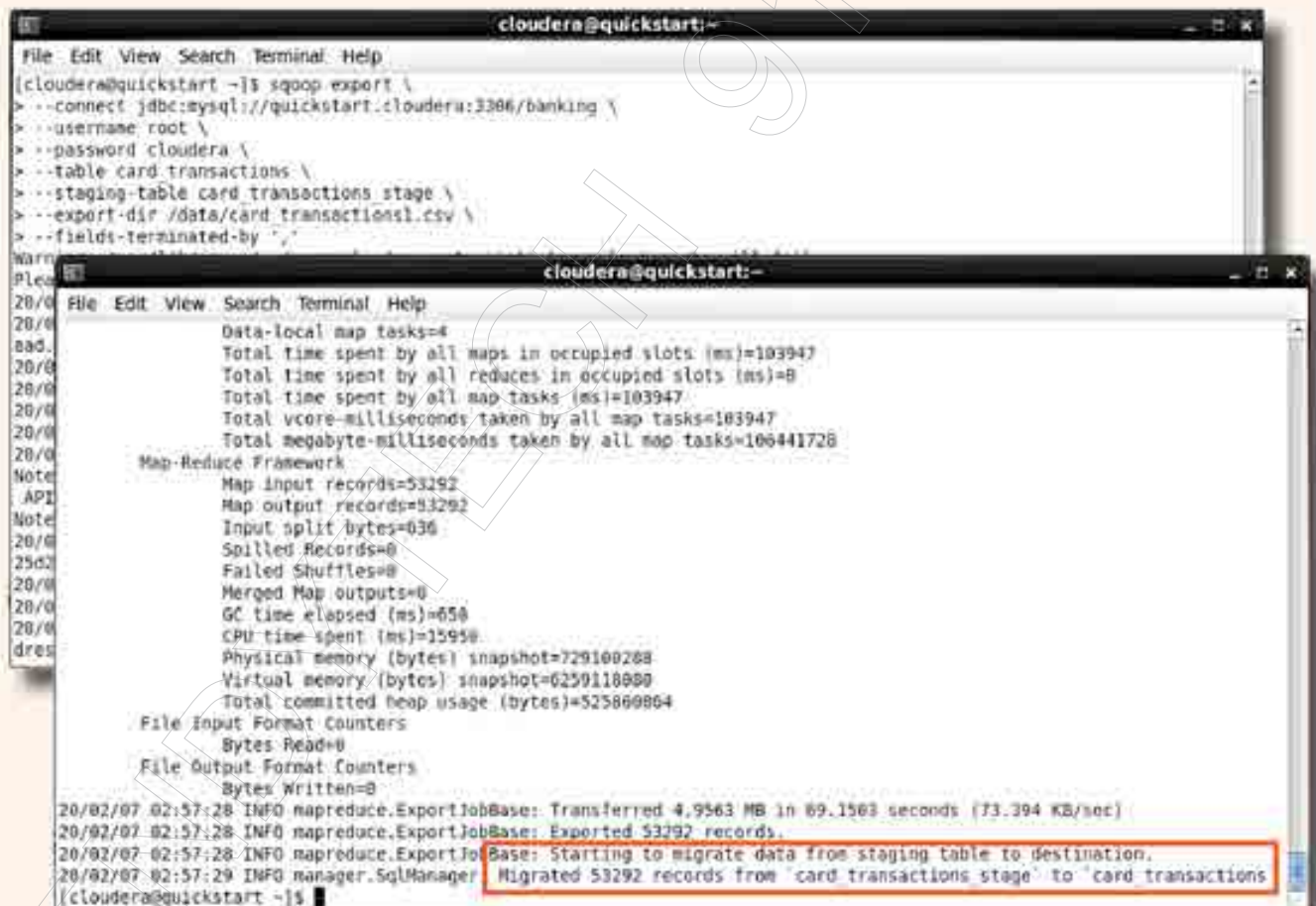


A terminal window titled 'cloudera@quickstart:~' showing the execution of the command 'hadoop fs -cat /data/card\_transactions1.csv | head'. The output displays the first 10 lines of the CSV file, which contain transaction data. The last line of the output is 'cat: Unable to write to output stream.'

```
cloudera@quickstart:~
File Edit View Search Terminal Help
[cloudera@quickstart ~]$ hadoop fs -cat /data/card_transactions1.csv | head
1,348702330256514,37495066290,9084849,33946,614677375609919,11-02-2018 00:00:00,GENUINE
2,348702330256514,37495066290,330148,33946,614677375609919,11-02-2018 00:00:00,GENUINE
3,348702330256514,37495066290,136052,33946,614677375609919,11-02-2018 00:00:00,GENUINE
4,348702330256514,37495066290,4310362,33946,614677375609919,11-02-2018 00:00:00,GENUINE
5,348702330256514,37495066290,9097094,33946,614677375609919,11-02-2018 00:00:00,GENUINE
6,348702330256514,37495066290,2291118,33946,614677375609919,11-02-2018 00:00:00,GENUINE
7,348702330256514,37495066290,4900011,33946,614677375609919,11-02-2018 00:00:00,GENUINE
8,348702330256514,37495066290,633447,33946,614677375609919,11-02-2018 00:00:00,GENUINE
9,348702330256514,37495066290,6259303,33946,614677375609919,11-02-2018 00:00:00,GENUINE
10,348702330256514,37495066290,369067,33946,614677375609919,11-02-2018 00:00:00,GENUINE
cat: Unable to write to output stream.
[cloudera@quickstart ~]$
```

Now export the **card\_transactions1.csv** from hdfs to mysql through staging table:

```
sqoop export \
--connect jdbc:mysql://quickstart.cloudera:3306/banking \
--username root \
--password cloudera \
--table card_transactions \
--staging-table card_transactions_stage \
--export-dir /data/card_transactions1.csv \
--fields-terminated-by ','
```



The screenshot shows a terminal window titled 'cloudera@quickstart:-'. The user enters the sqoop export command with the following options: --connect jdbc:mysql://quickstart.cloudera:3306/banking, --username root, --password cloudera, --table card\_transactions, --staging-table card\_transactions\_stage, --export-dir /data/card\_transactions1.csv, and --fields-terminated-by ','. The output shows the progress of the export operation, including the number of records transferred and the time taken. The final output is: 'Migrated 53292 records from 'card\_transactions\_stage' to 'card\_transactions''.

```
cloudera@quickstart:-
File Edit View Search Terminal Help
[cloudera@quickstart ~]$ sqoop export \
> --connect jdbc:mysql://quickstart.cloudera:3306/banking \
> --username root \
> --password cloudera \
> --table card_transactions \
> --staging-table card_transactions_stage \
> --export-dir /data/card_transactions1.csv \
> --fields-terminated-by ','
Warning: Please use the --verbose option to get actual progress, byte count, and
Estimated DTTN information.
20/02/07 02:57:28 INFO mapreduce.ExportJobBase: Transferred 4.9563 MB in 69.1563 seconds (73.394 KB/sec)
20/02/07 02:57:28 INFO mapreduce.ExportJobBase: Exported 53292 records.
20/02/07 02:57:28 INFO mapreduce.ExportJobBase: Starting to migrate data from staging table to destination.
20/02/07 02:57:29 INFO manager.SqlManager: Migrated 53292 records from 'card_transactions_stage' to 'card_transactions'
[cloudera@quickstart ~]$
```

## Import back the `card_transactions1.csv` from mysql to hdfs:

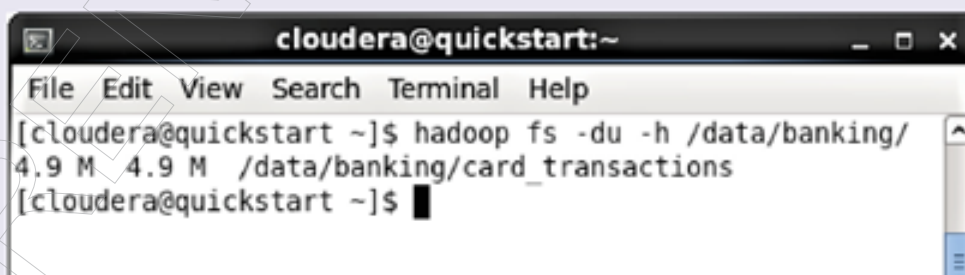
```
scoop import \
--connect jdbc:mysql://quickstart.cloudera:3306/banking \
--username root --password cloudera \
--table card_transactions \
--warehouse-dir /data/banking
```



```
cloudera@quickstart:~
File Edit View Search Terminal Help
[cloudera@quickstart ~]$ scoop import \
> --connect jdbc:mysql://quickstart.cloudera:3306/banking \
> --username root \
> --password cloudera \
> --table card_transactions \
> --warehouse-dir /data/banking
Warning: Killed map tasks=1
Please: Launched map tasks=5
20/02/07 03:28:06 INFO mapreduce.ImportJobBase: Other local map tasks=5
20/02/07 03:28:06 INFO mapreduce.ImportJobBase: Total time spent by all maps in occupied slots (ms)=158406
20/02/07 03:28:06 INFO mapreduce.ImportJobBase: Total time spent by all reduces in occupied slots (ms)=0
20/02/07 03:28:06 INFO mapreduce.ImportJobBase: Total time spent by all map tasks (ms)=158406
20/02/07 03:28:06 INFO mapreduce.ImportJobBase: Total vcore-milliseconds taken by all map tasks=158406
20/02/07 03:28:06 INFO mapreduce.ImportJobBase: Total megabyte-milliseconds taken by all map tasks=162287744
Map-Reduce Framework
Map input records=53292
Map output records=53292
Input split bytes=517
Note: Spilled Records=0
20/02/07 03:28:06 INFO mapreduce.ImportJobBase: Failed Shuffles=0
20/02/07 03:28:06 INFO mapreduce.ImportJobBase: Merged Map outputs=0
20/02/07 03:28:06 INFO mapreduce.ImportJobBase: GC time elapsed (ms)=995
20/02/07 03:28:06 INFO mapreduce.ImportJobBase: CPU time spent (ms)=21510
20/02/07 03:28:06 INFO mapreduce.ImportJobBase: Physical memory (bytes) snapshot=702652416
20/02/07 03:28:06 INFO mapreduce.ImportJobBase: Virtual memory (bytes) snapshot=46298563872
20/02/07 03:28:06 INFO mapreduce.ImportJobBase: Total committed heap usage (bytes)=533725104
File Input Format Counters
Bytes Read=0
File Output Format Counters
Bytes Written=5326097
20/02/07 03:28:06 INFO mapreduce.ImportJobBase: Transferred 4.8892 MB in 79.5093 seconds (62.968 KB/sec)
20/02/07 03:28:06 INFO mapreduce.ImportJobBase: Retrieved 53292 records.
[cloudera@quickstart ~]$
```

## To check the size of the imported data:

```
hadoop fs -du -h /data/banking/
```

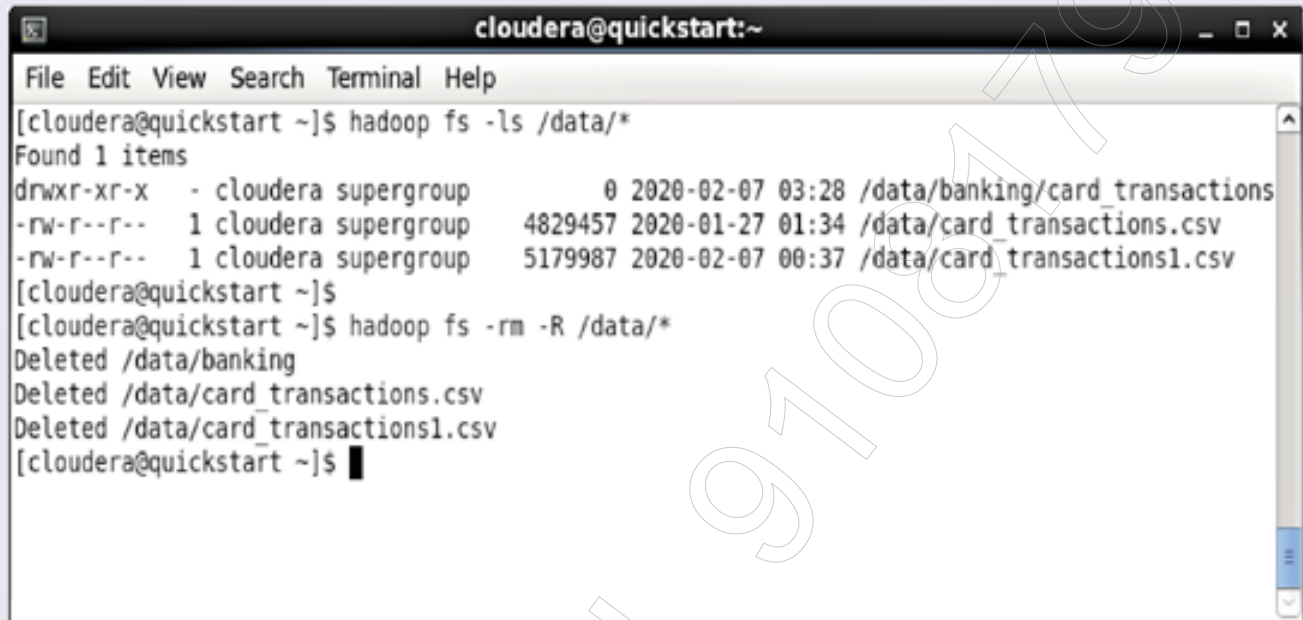


```
cloudera@quickstart:~
File Edit View Search Terminal Help
[cloudera@quickstart ~]$ hadoop fs -du -h /data/banking/
4.9 M 4.9 M /data/banking/card_transactions
[cloudera@quickstart ~]$
```



## Command to delete directories from hdfs:

```
hadoop fs -rm -R /data/*
```



The screenshot shows a terminal window titled 'cloudera@quickstart:~'. The user first runs 'hadoop fs -ls /data/\*', which lists three items: a directory '/data/banking/card\_transactions' and two CSV files. Then, the user runs 'hadoop fs -rm -R /data/\*', and the terminal shows three lines of output indicating the successful deletion of each item.

```
cloudera@quickstart:~
File Edit View Search Terminal Help
[cloudera@quickstart ~]$ hadoop fs -ls /data/*
Found 1 items
drwxr-xr-x - cloudera supergroup 0 2020-02-07 03:28 /data/banking/card_transactions
-rw-r--r-- 1 cloudera supergroup 4829457 2020-01-27 01:34 /data/card_transactions.csv
-rw-r--r-- 1 cloudera supergroup 5179987 2020-02-07 00:37 /data/card_transactions1.csv
[cloudera@quickstart ~]$
[cloudera@quickstart ~]$ hadoop fs -rm -R /data/*
Deleted /data/banking
Deleted /data/card_transactions.csv
Deleted /data/card_transactions1.csv
[cloudera@quickstart ~]$
```

## Import data from mysql to hdfs in compress form:

```
sqoop import \
--connect jdbc:mysql://quickstart.cloudera:3306/banking \
--username root \
--password cloudera \
--table card_transactions \
--warehouse-dir /data/banking \
--compress
```



Check again the size of the imported data in compress form:

```
hadoop fs -du -h /data/banking/
```



The screenshot shows a terminal window titled 'cloudera@quickstart:~'. The window has a menu bar with 'File', 'Edit', 'View', 'Search', 'Terminal', and 'Help'. The terminal output shows the command '[cloudera@quickstart ~]\$ hadoop fs -du -h /data/banking/' followed by the result '1.3 M 1.3 M /data/banking/card\_transactions'. The prompt '[cloudera@quickstart ~]\$' is shown again on the next line.

```
cloudera@quickstart:~
File Edit View Search Terminal Help
[cloudera@quickstart ~]$ hadoop fs -du -h /data/banking/
1.3 M 1.3 M /data/banking/card_transactions
[cloudera@quickstart ~]$
```

# Sqoop Incremental

## Create a table in mysql under banking database:

```
create table member_details(
card_id BIGINT,
member_id BIGINT,
member_joining_dt timestamp,
card_purchase_dt varchar(255),
country varchar(255),
city varchar(255),
PRIMARY KEY (card_id));
```

## Create a staging table in mysql under banking database:

```
create table member_details_stage as
select * from member_details where 1=0;
```

## Create a directory in hdfs and put the *cardmembers.csv* data in it:

```
hadoop fs -mkdir /data/banking/card_member
```

```
hadoop fs -put file:///home/cloudera/Downloads/
cardmembers.csv /data/banking/card_member/
```

**Export the data to the created table (*member\_details*) in mysql through staging table of banking database from hdfs:**

```
sqoop export \
--connect jdbc:mysql://quickstart.cloudera:3306/banking \
--username root \
--password cloudera \
--table member_details \
--staging-table member_details_stage \
--export-dir /data/banking/card_member \
--fields-terminated-by ','
```

**Create a Sqoop job to import data from mysql to hdfs:**

```
sqoop job \
--create job_banking_member_details \
--import \
--connect jdbc:mysql://quickstart.cloudera:3306/banking \
--username root \
--password cloudera \
--table member_details \
--warehouse-dir /data/banking \
--incremental append \
--check-column card_id \
--last-value 0
```

**List available Sqoop jobs:**

```
sqoop job --list
```

## Execute a Sqoop job:

```
sqoop job --exec job_banking_member_details
```

## To show last incremental parameter:

```
sqoop job --show job_banking_member_details | grep incremental
```

## Delete a Sqoop job:

```
sqoop job --delete job_banking_member_details
```

## To create a password file:

```
echo -n "cloudera" >> password-file
```

## Create a Sqoop job with password file:

```
sqoop job \
--create job_banking_member_details \
-- import \
--connect jdbc:mysql://quickstart.cloudera:3306/banking \
--username root \
--password-file file:///home/cloudera/password-file \
--table member_details \
--warehouse-dir /data/banking \
--incremental append \
--check-column card_id \
--last-value 0
```



## Execute a Sqoop job:

```
sqoop job --exec job_banking_member_details
```

## To check the output files:

```
hadoop fs -cat /data/banking/member_score/* | wc -l
```

```
CREATE TABLE member_score(
member_id BIGINT,
score INT(3),
PRIMARY KEY (member_id));
```

```
CREATE TABLE member_score_stage(
member_id BIGINT,
score INT(3),
PRIMARY KEY (member_id));
```

```
sqoop export \
--connect jdbc:mysql://quickstart.cloudera:3306/banking \
--username root \
--password cloudera \
--table member_score \
--staging-table member_score_stage \
--export-dir /data/banking/member_score \
--fields-terminated-by ','
```

```
sqoop import \
--connect jdbc:mysql://quickstart.cloudera:3306/banking \
--username root \
--password cloudera \
--table member_score \
--delete-target-dir \
--warehouse-dir /data/banking
```

java cryptography encryption key store

reference link: <https://www.ericlin.me/2015/06/securely-managing-passwords-in-sqoop/>

<https://www.pixelstech.net/article/1420439432-Different-types-of-keystore-in-Java----JCEKS>

```
hadoop credential create mysql.banking.password -provider
jceks://hdfs/user/sumitm/mysql.password.jceks
```

```
hadoop fs -cat /user/sumitm/mysql.password.jceks
```

```
sqoop eval \
-Dhadoop.security.credential.provider.path=jceks://hdfs/
user/sumitm/mysql.password.jceks \
--connect jdbc:mysql://quickstart.cloudera:3306/banking \
--username root \
--password-alias mysql.banking.password \
--query "select count(1) from member_score"
```

```
sqoop import \
--connect jdbc:mysql://quickstart.cloudera:3306/banking \
--username root \
--password cloudera \
--table card_transactions \
--hive-import \
--hive-database banking \
--compress
```



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