Apache Sqoop Exercise 3

IMPORTANT

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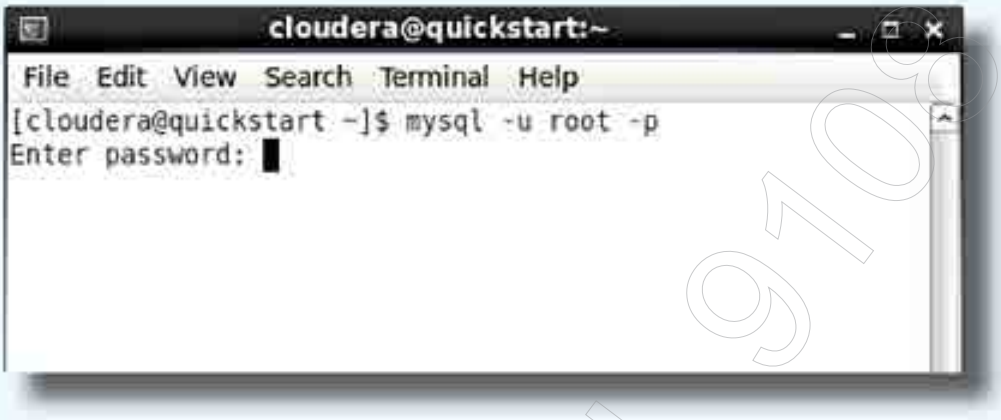
Sqoop Export

Login to MySQL

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




```
Enter password: cloudera
```

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

```
create database banking;

use banking;
```

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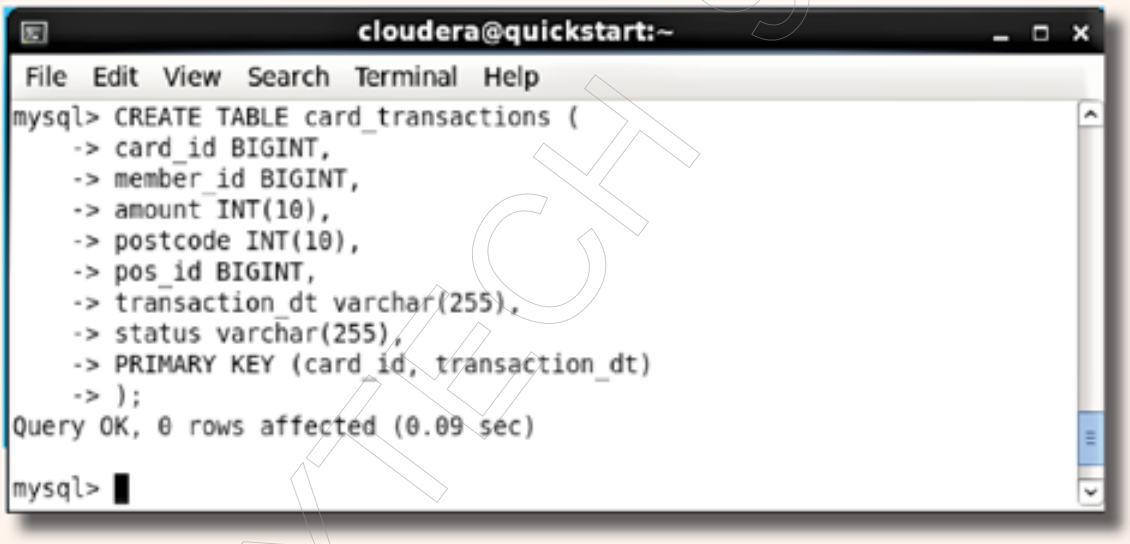
Create a table (card_transactions) inside banking database of MySQL:

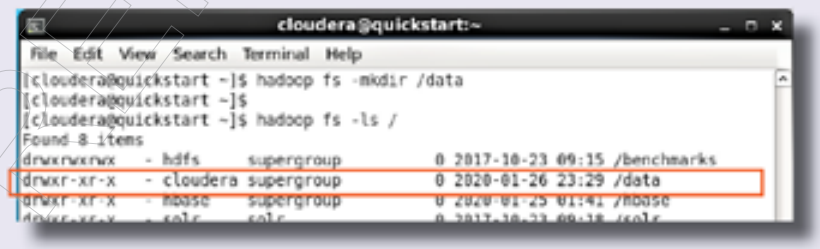
```
CREATE TABLE card_transactions (
card_id BIGINT,
member_id BIGINT,
amount INT(10),
postcode INT(10),
pos_id BIGINT,
transaction_dt varchar(255),
status varchar(255),
PRIMARY KEY (card_id, transaction_dt)
);
```

composite primary key



Create a directory inside HDFS:

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



No need to create, if already available

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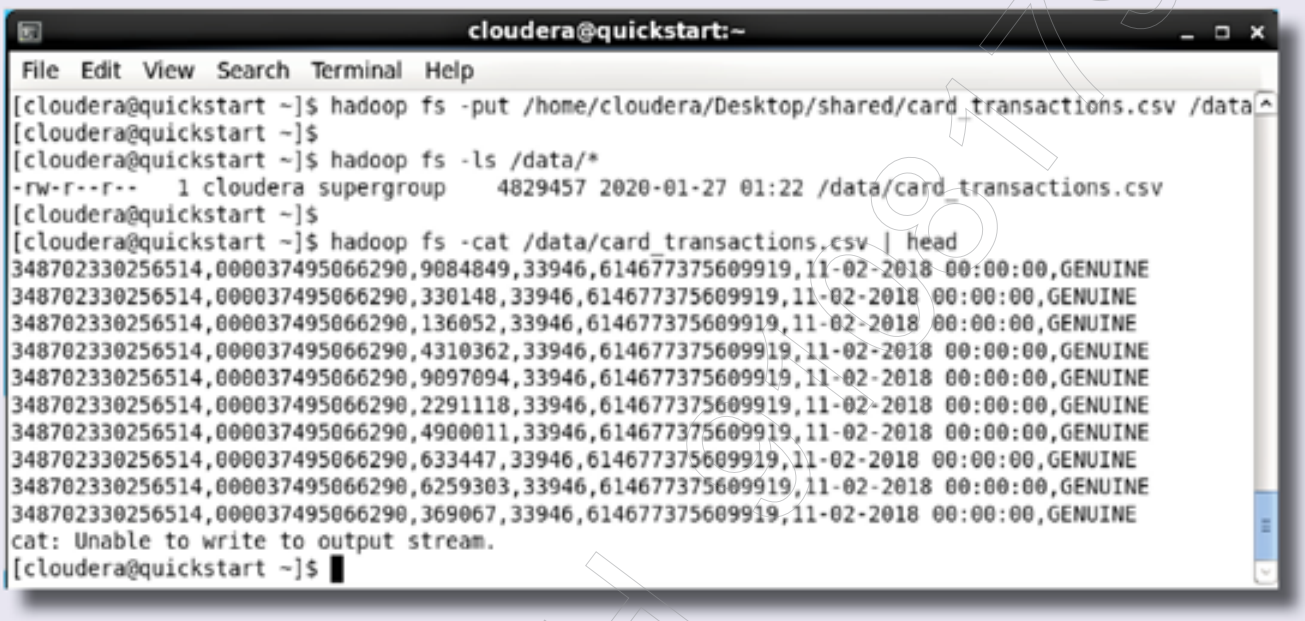
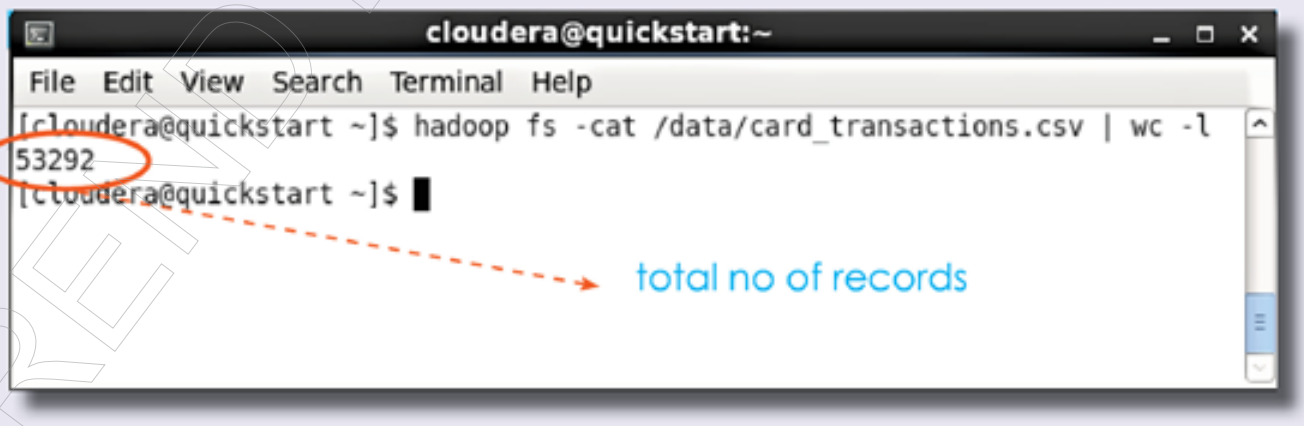
Move the csv file (*card_transactions*) to the HDFS *data* directory:

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



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

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



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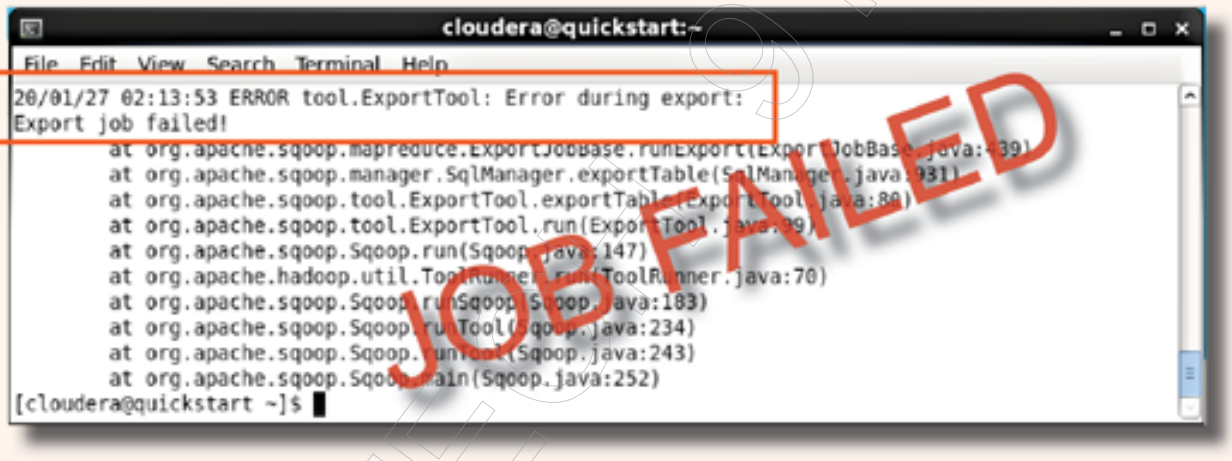
Move data from HDFS to Sqoop using sqoop export:

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 ','
```



Note: The Job will fail

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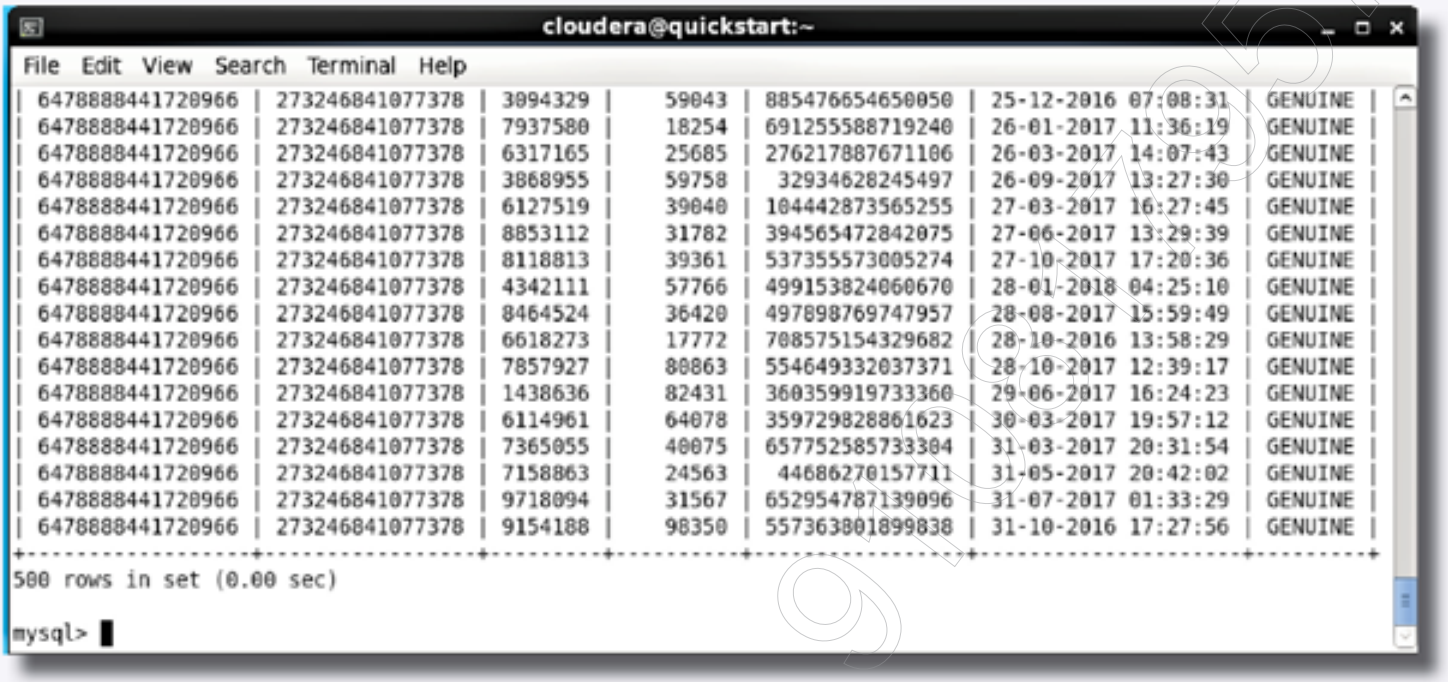
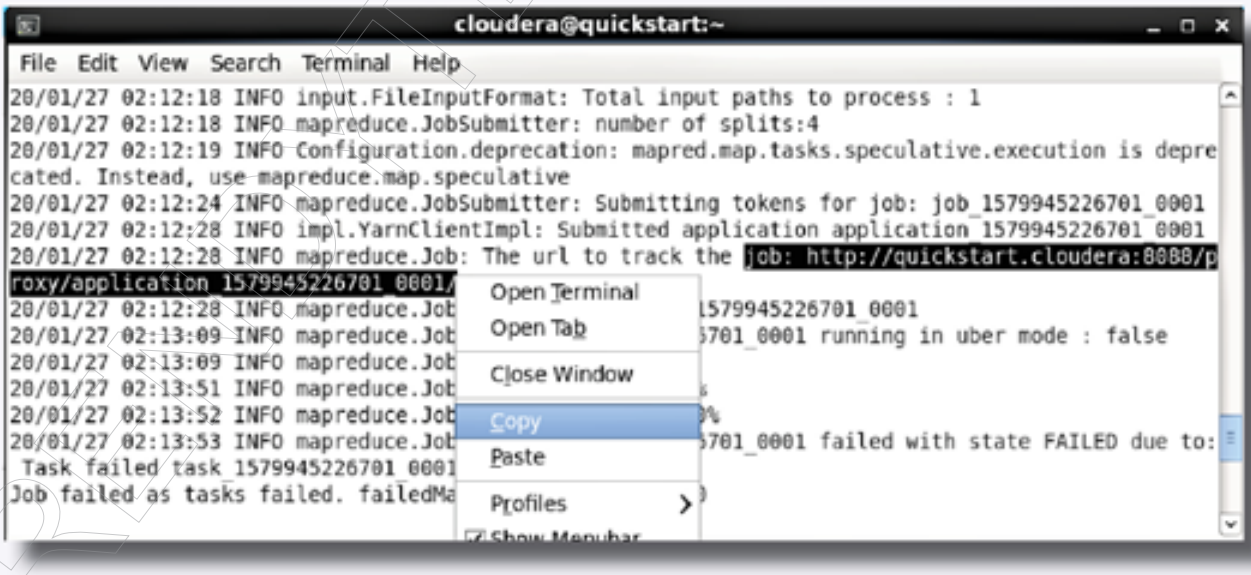
The *card_transactions* table data shoud look like below:



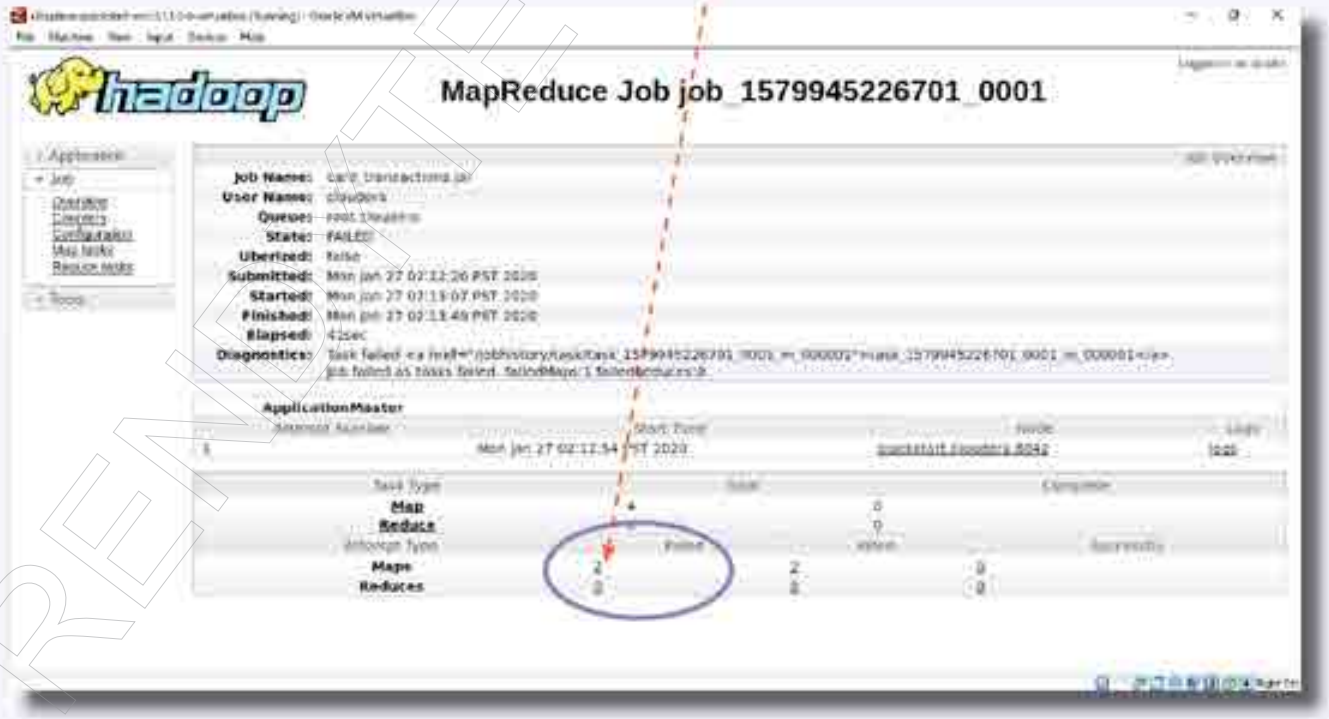
How to track the failed job:

- Go to the log and **find** The url to track the job
- **Copy** the given url



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

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



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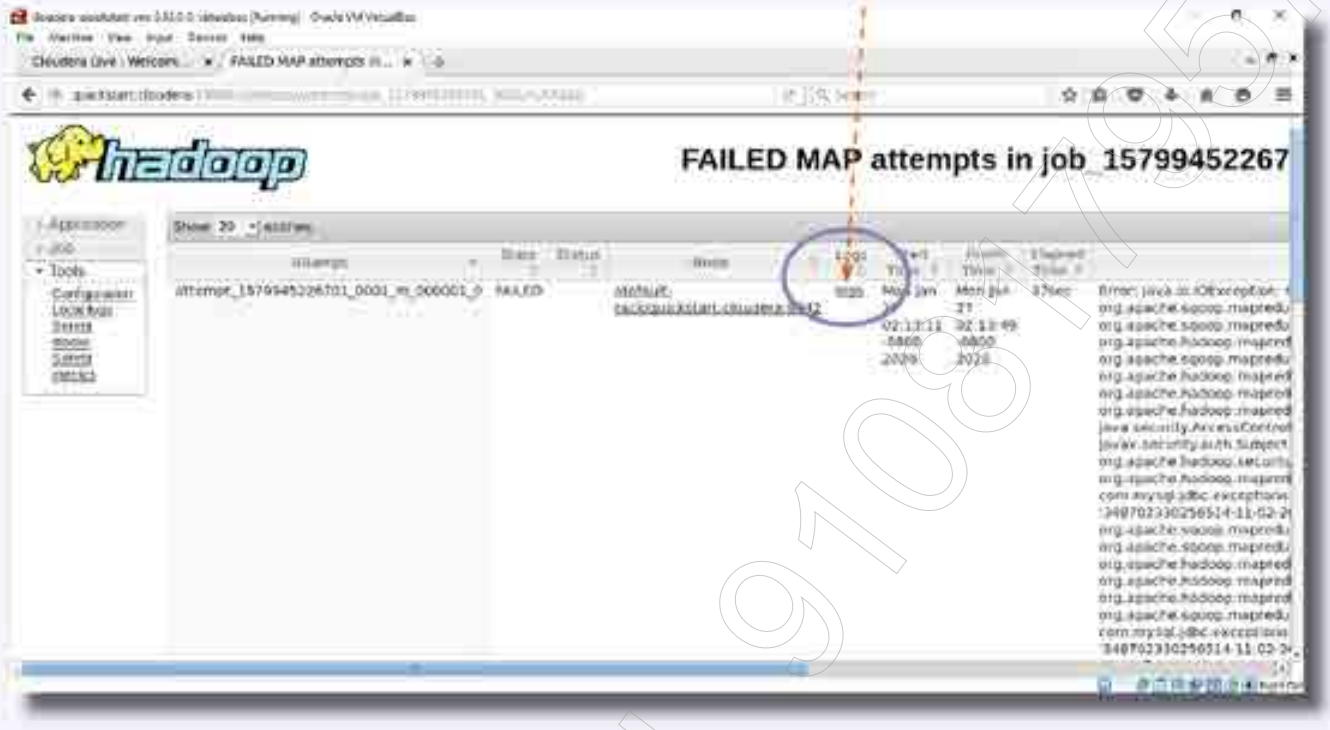
- In the FAILED MAP attempts window - **click** on logs under logs



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

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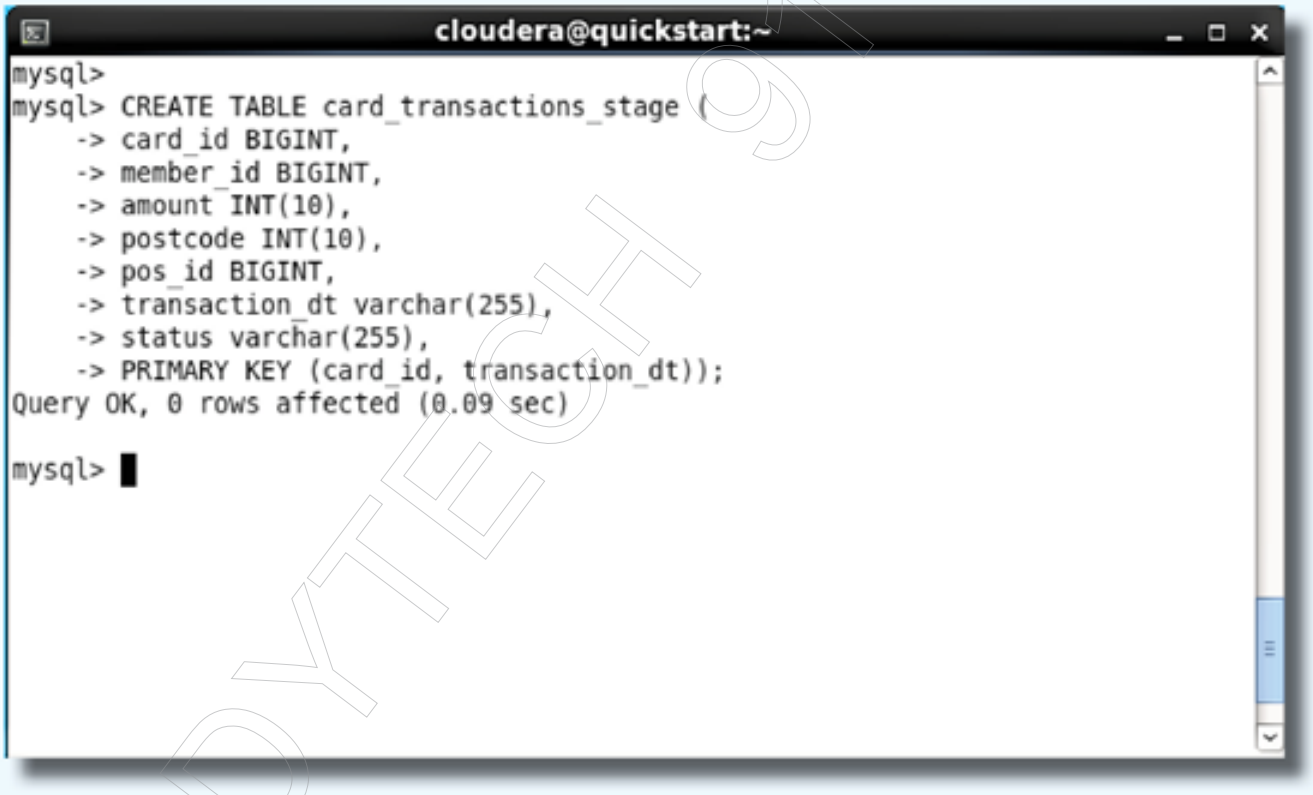
Create a staging table *card_transactions_stage* in mysql:

```
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));
```



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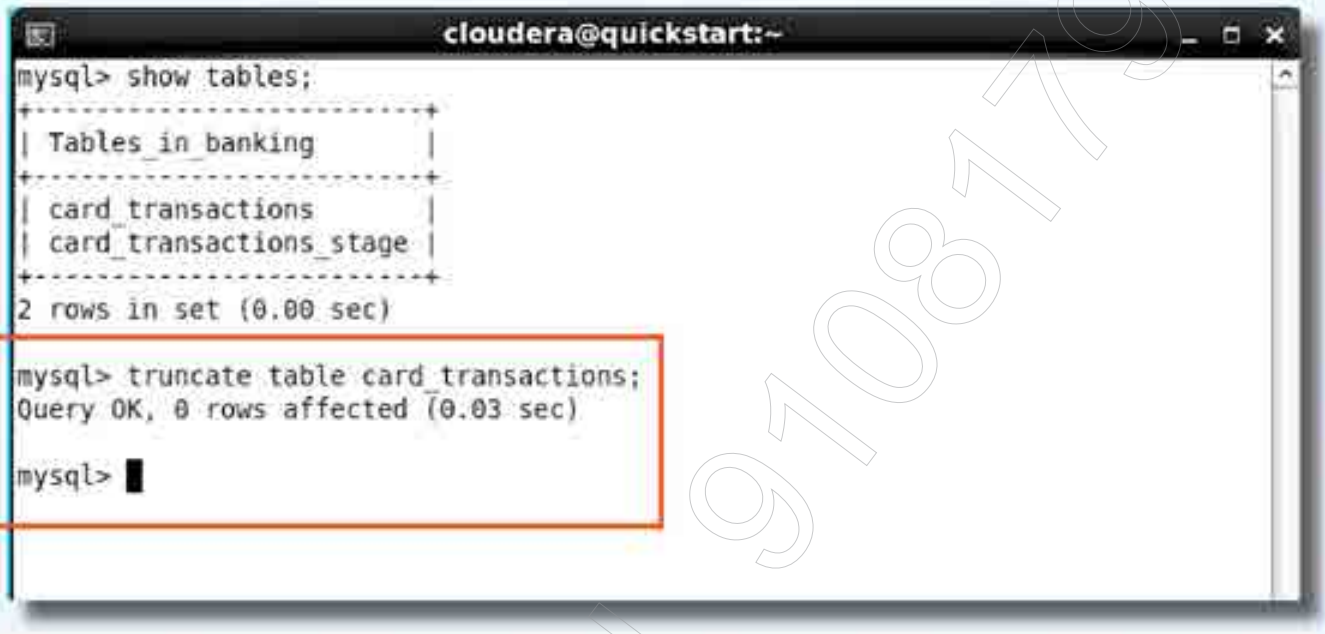
Truncate *card_transactions* table from mysql:

```
truncate table card_transactions;
```



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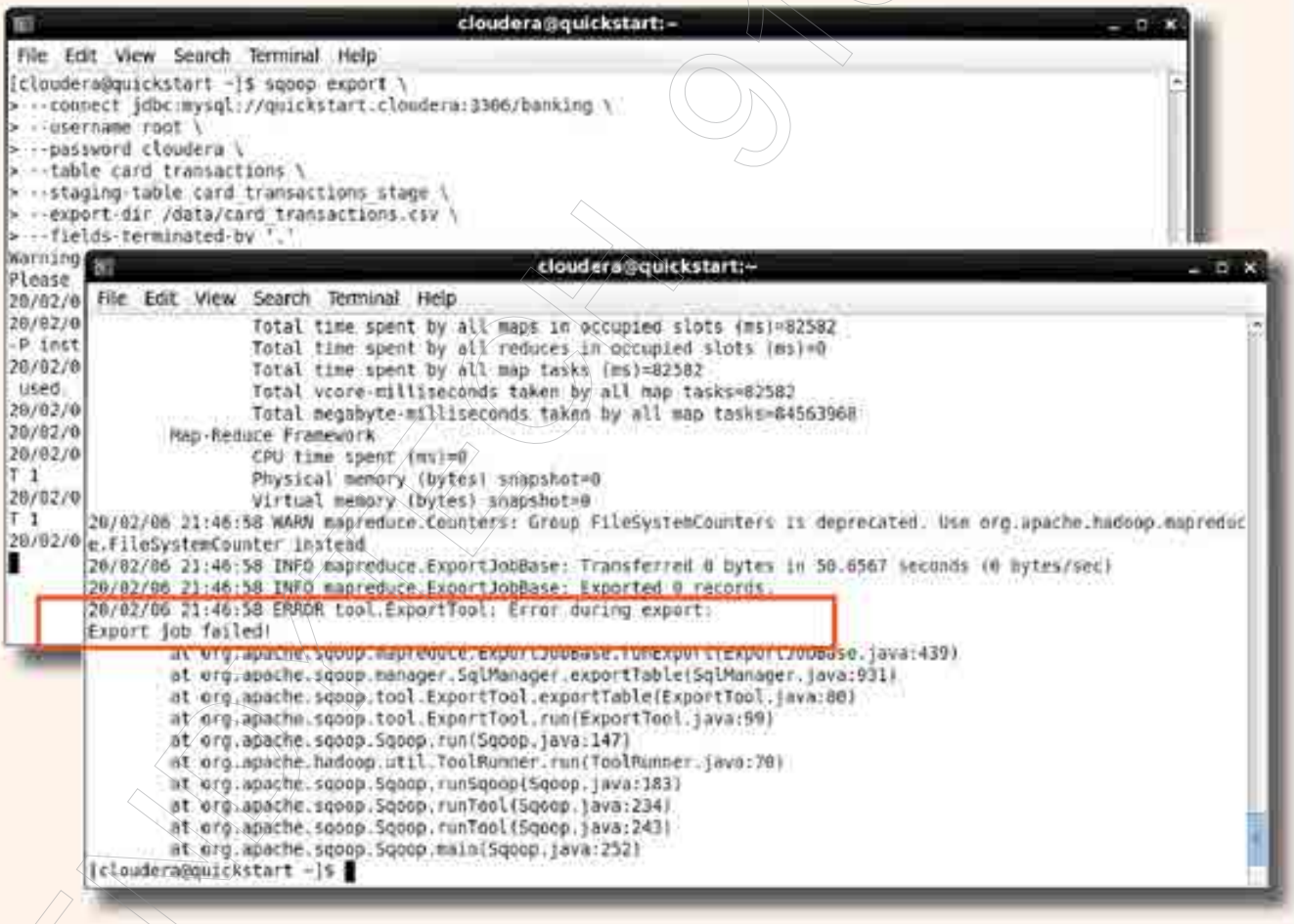
Export data from hdfs to mysql using staging table:

```
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_transactions.csv \
--fields-terminated-by ','
```



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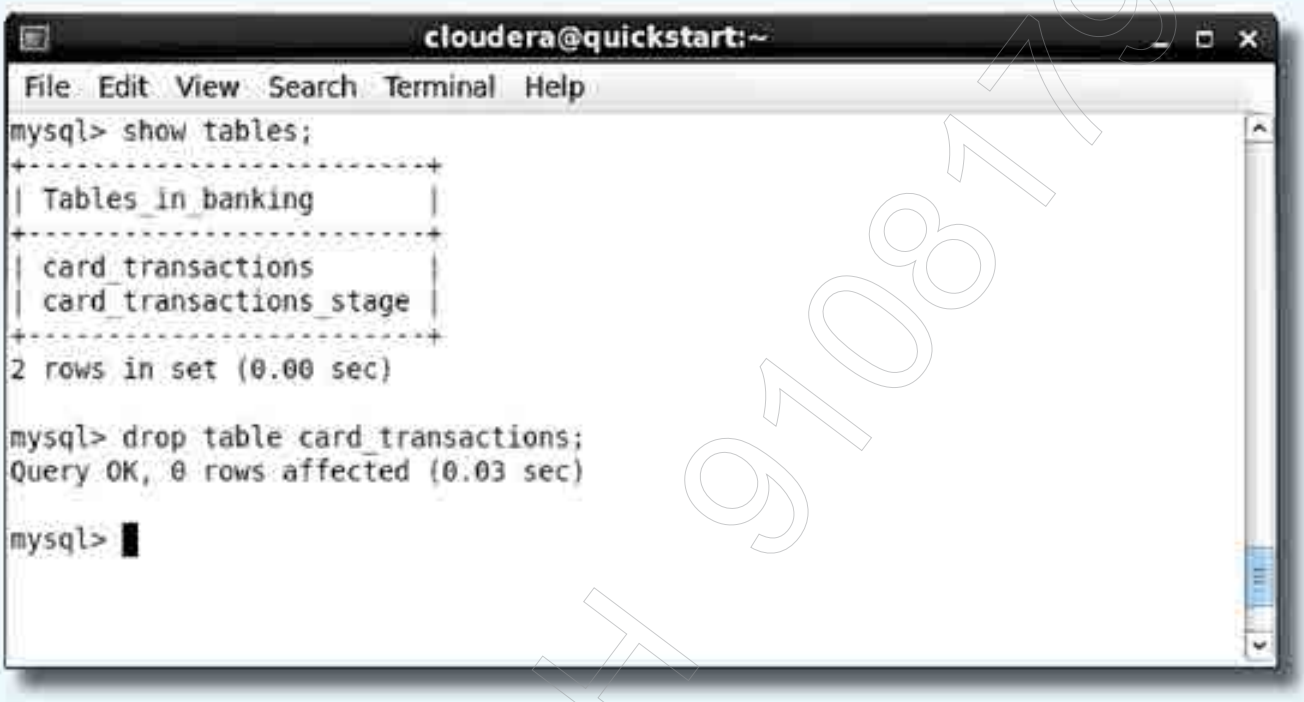
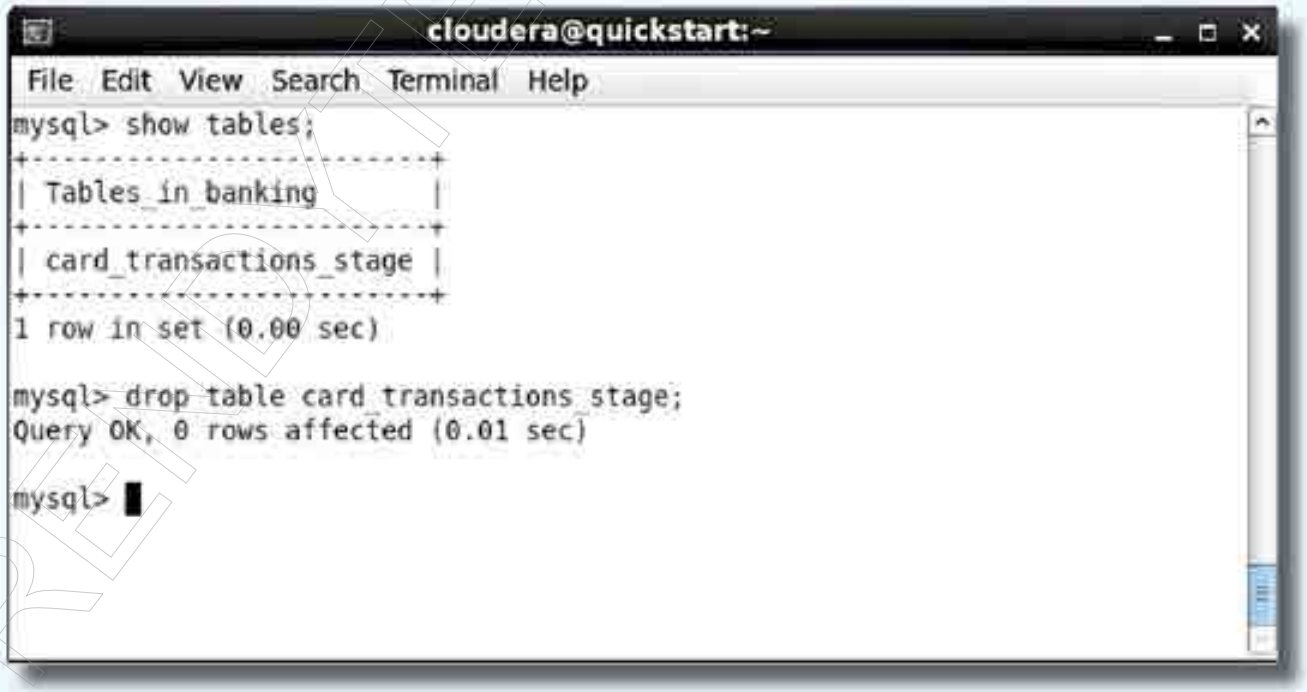
Drop both the staging and the actual table from mysql:

```
drop table card_transactions;
```




```
drop table card_transactions_stage;
```



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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));
```

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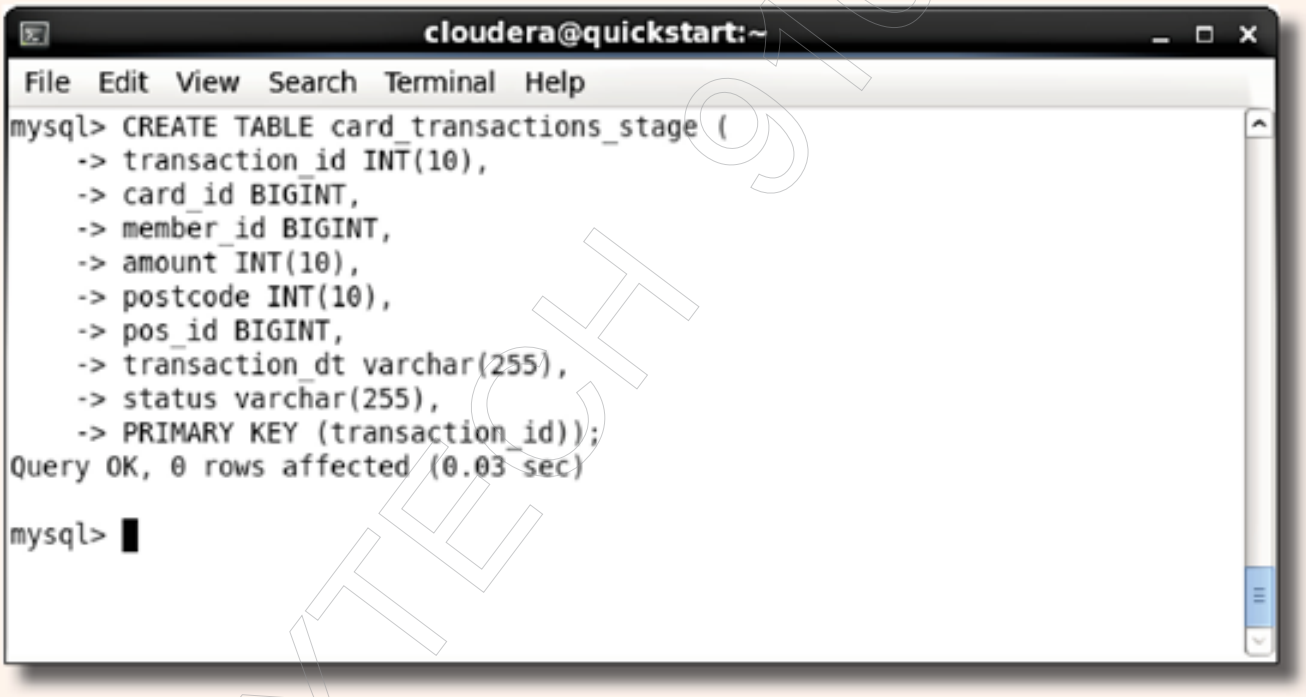
```
CREATE TABLE card_transactions_stage (
transaction_id INT(10),
card_id BIGINT,
member_id BIGINT,
amount INT(10),
postcode INT(10),
pos_id BIGINT,
transaction_dt varchar(255),
status varchar(255),
PRIMARY KEY (transaction_id));
```



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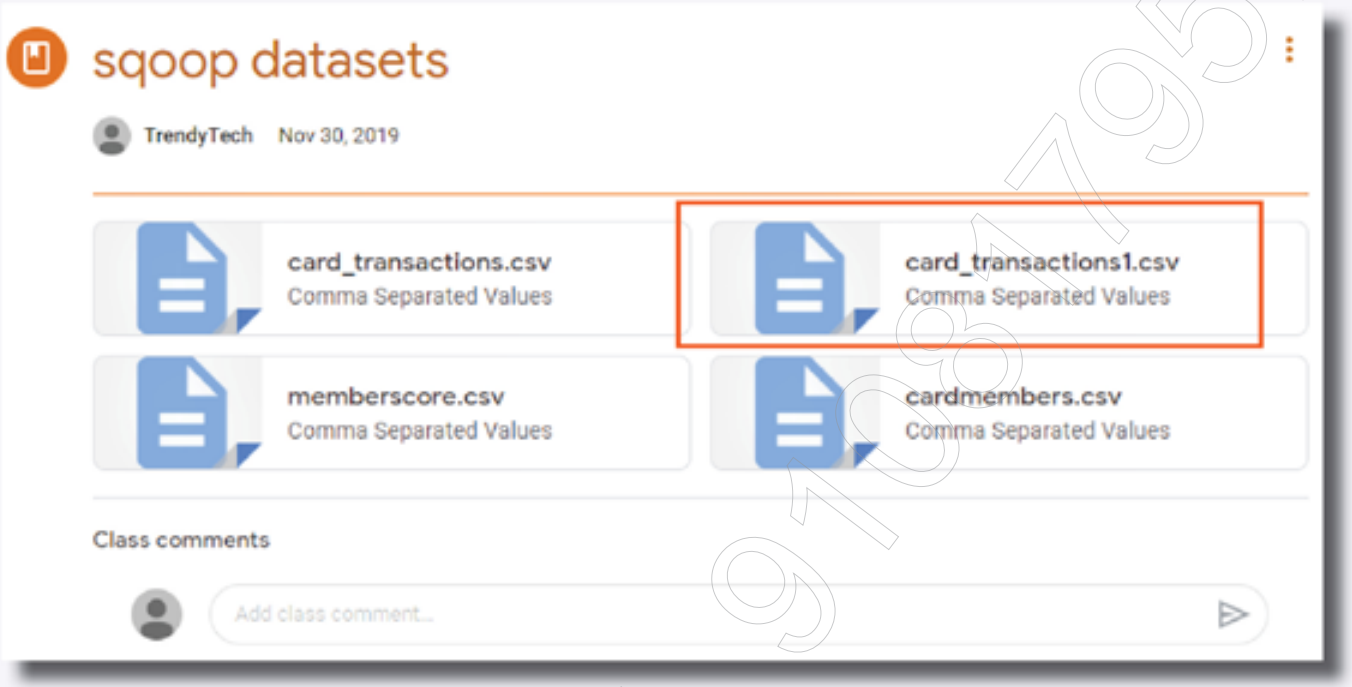
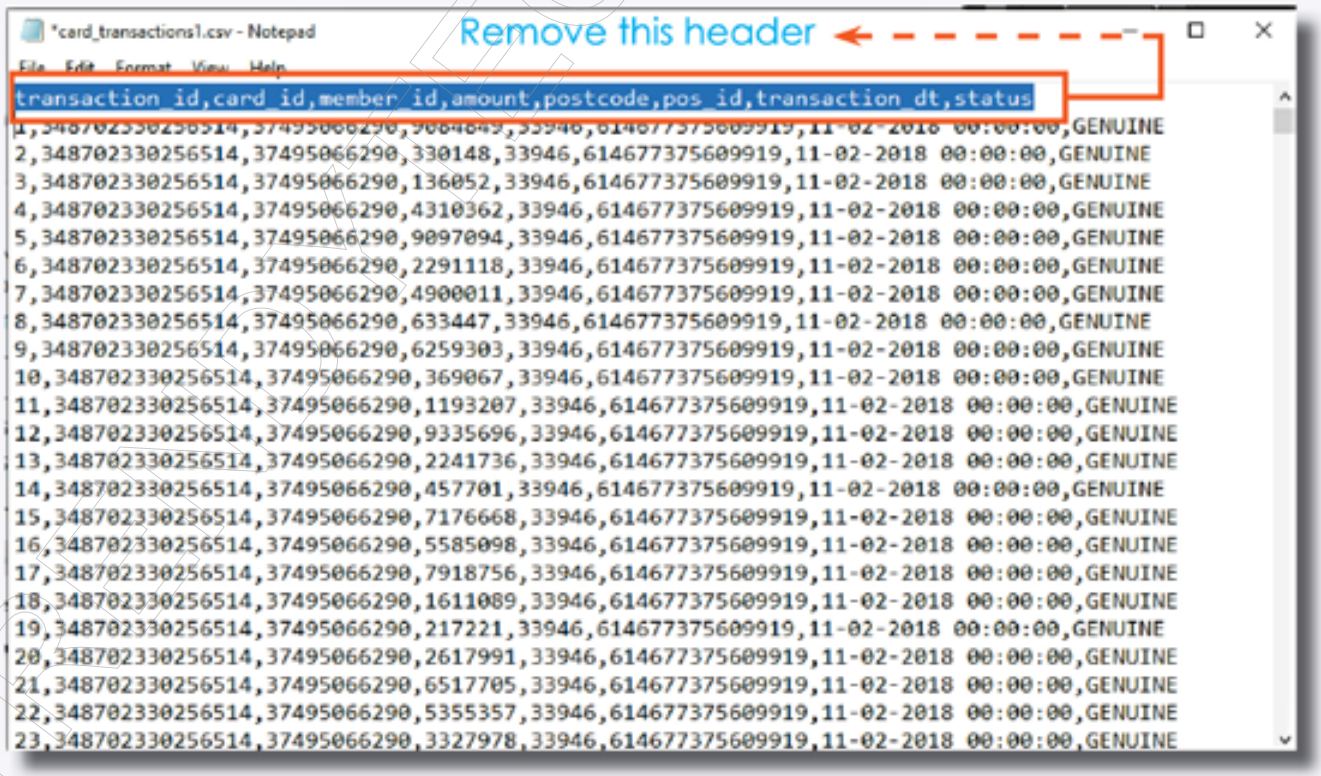
Go to Google classroom and download the *card_transactions1.csv*:



Remove the header from the *card_transactions1.csv* file and save:



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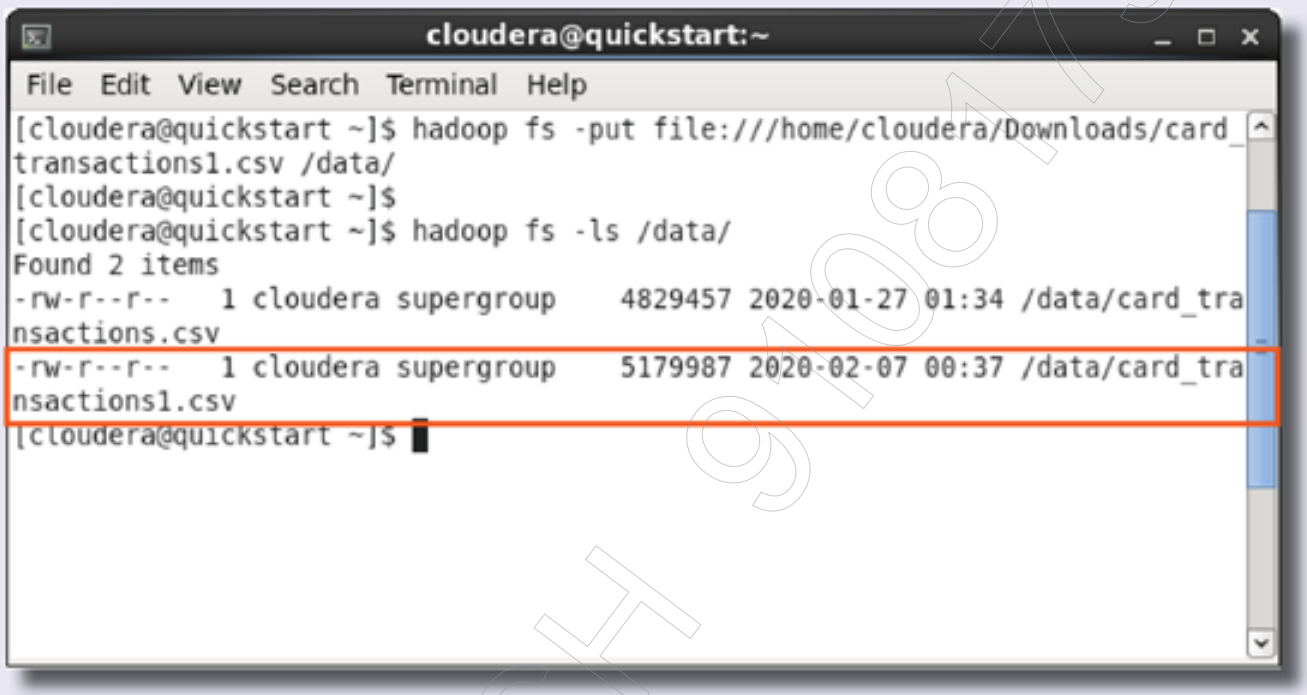
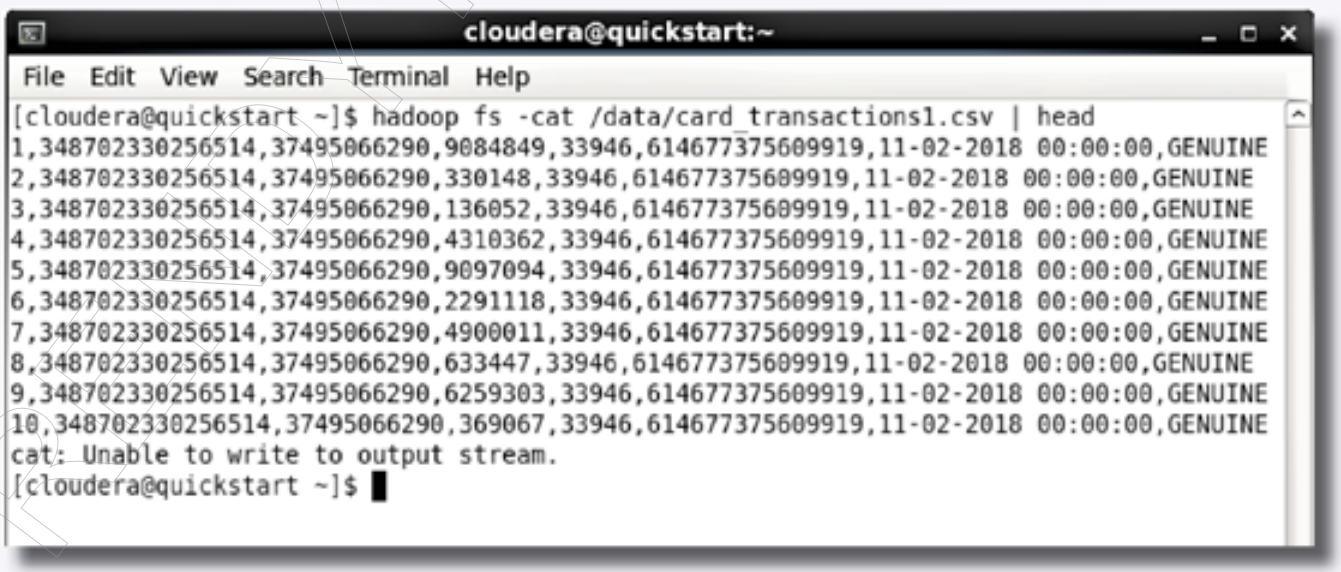
Move the *card_transactions1.csv* file to the HDFS *data* directory:

```
hadoop fs -put file:///home/cloudera/Downloads/card_
transactions1.csv /data/
```



The *card_transactions* tabele data shoud look like below:



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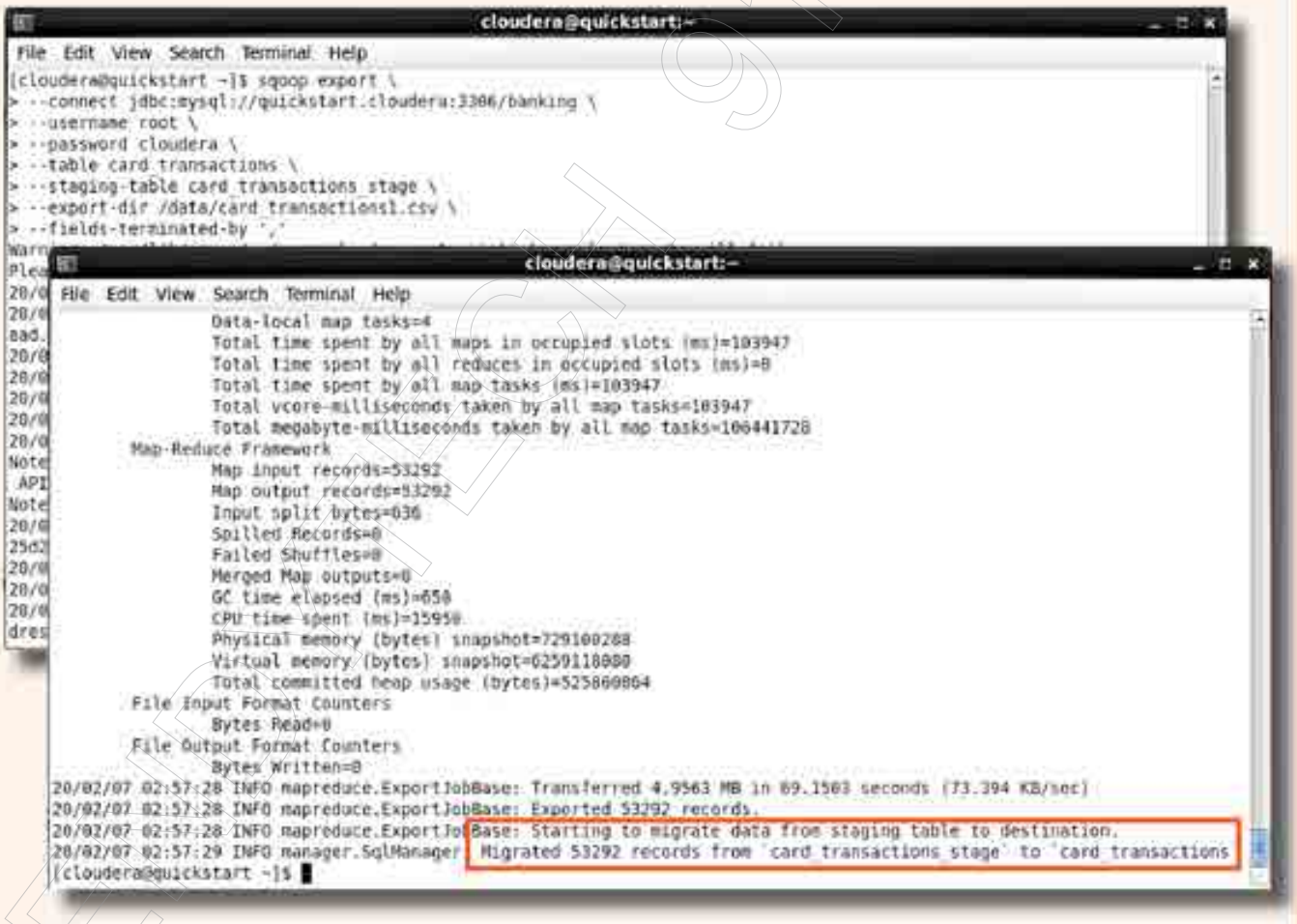
Now export the *card_transactions1.csv* from hdfs to mysql through staging table:

```
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 ','
```



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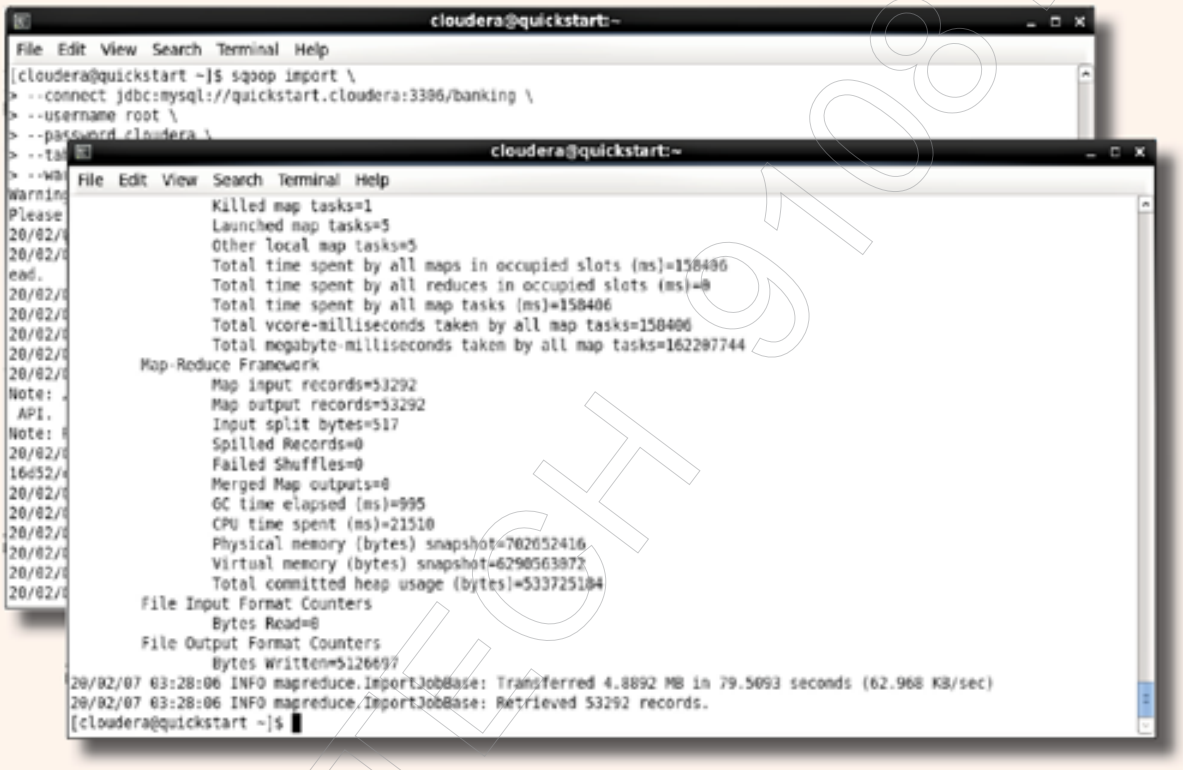
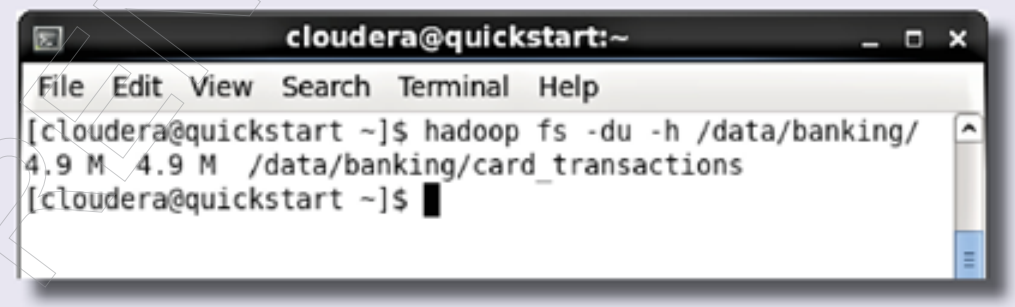
Import back the *card_transactions1.csv* from mysql to hdfs:

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



To check the size of the imported data:

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



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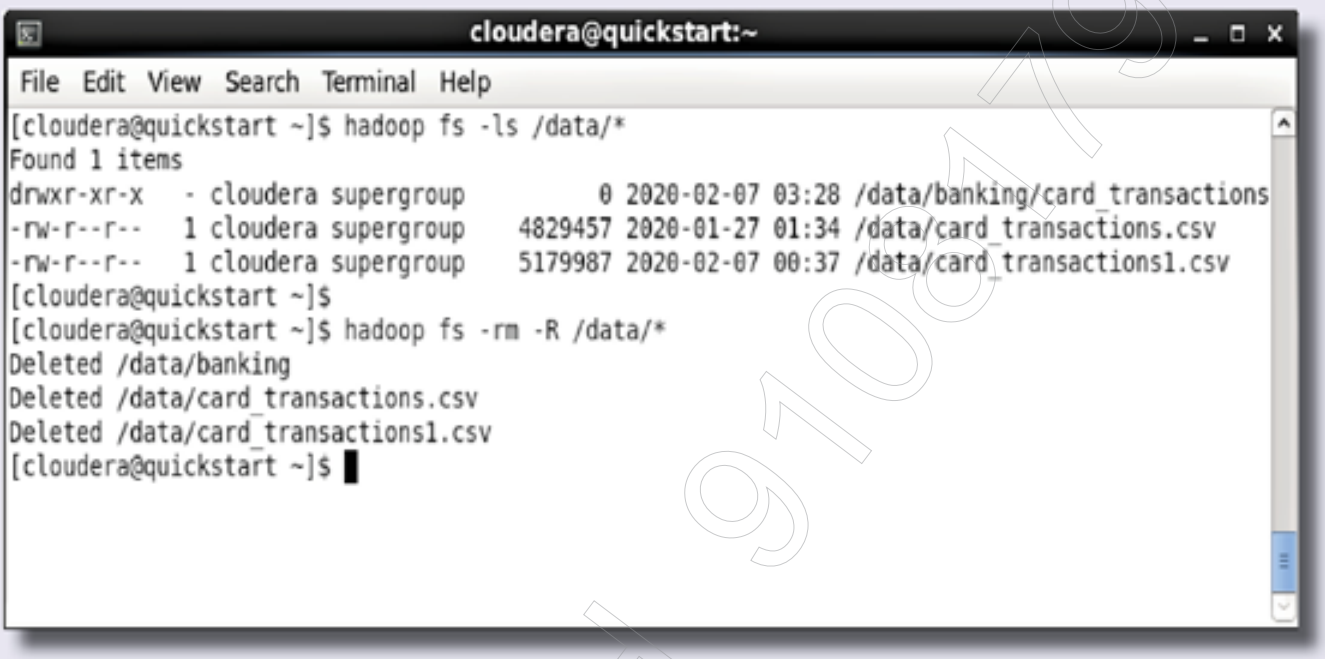
Command to delete directories from hdfs:

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



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
```

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

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

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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/
```

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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
```

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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
```

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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 ','
```

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```
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"
```

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```
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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