ASSIGNMENT 6.2

Hive queries:

1. Fetch date and temperature from temperature_data where zip code is greater than 300000 and less than 399999.

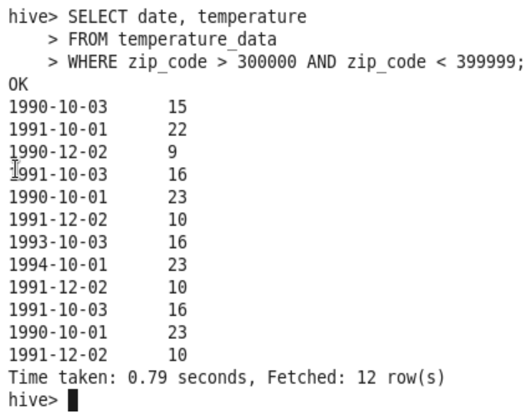
   Query:

   SELECT date, temperature

   FROM temperature_data

   WHERE zip_code > 300000 AND zip_code < 399999;

   Output:



```
hive> SELECT date, temperature
    > FROM temperature_data
    > WHERE zip_code > 300000 AND zip_code < 399999;
OK
1990-10-03      15
1991-10-01      22
1990-12-02      9
1991-10-03      16
1990-10-01      23
1991-12-02      10
1993-10-03      16
1994-10-01      23
1991-12-02      10
1991-10-03      16
1990-10-01      23
1991-12-02      10
Time taken: 0.79 seconds, Fetched: 12 row(s)
hive> █
```

2. Calculate maximum temperature corresponding to every year from temperature_data table.

Query:

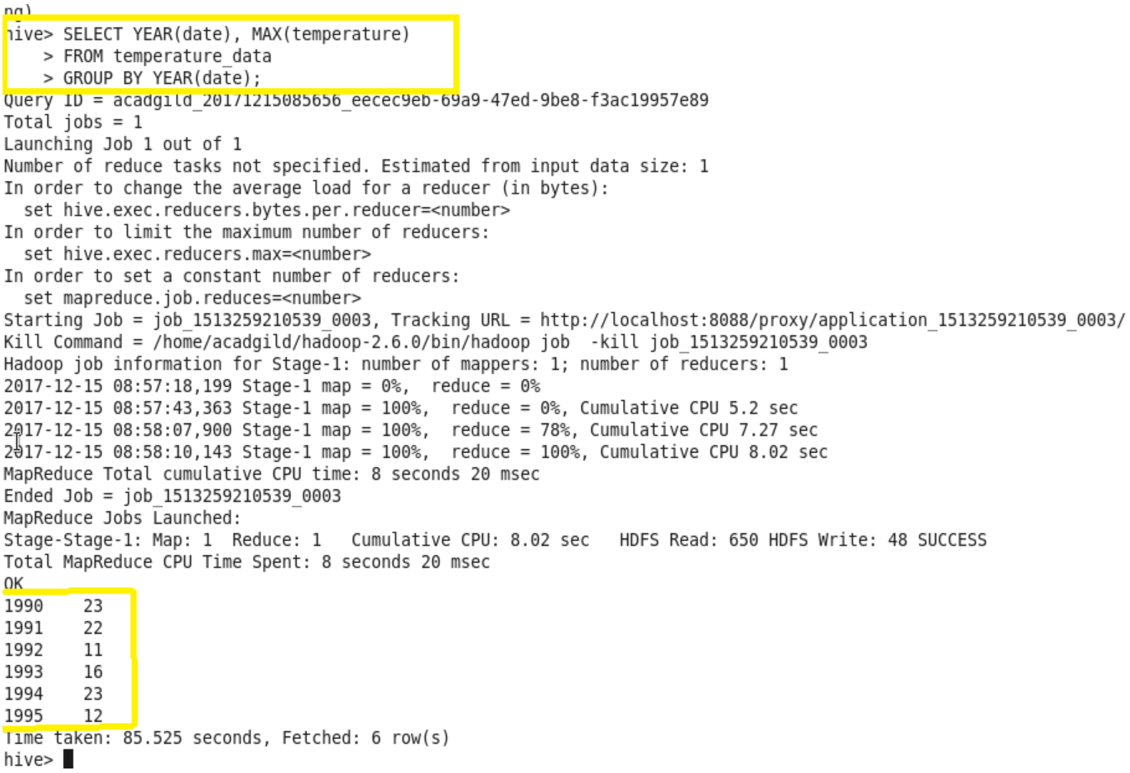
SELECT YEAR(date), MAX(temperature)

FROM temperature_data

GROUP BY YEAR(date)

HAVING COUNT(YEAR(date)) >= 2;

Output:



```
ng)
hive> SELECT YEAR(date), MAX(temperature)
    > FROM temperature_data
    > GROUP BY YEAR(date);
Query ID = acadgild_20171215085656_eecec9eb-69a9-47ed-9be8-f3ac19957e89
Total jobs = 1
Launching Job 1 out of 1
Number of reduce tasks not specified. Estimated from input data size: 1
In order to change the average load for a reducer (in bytes):
  set hive.exec.reducers.bytes.per.reducer=<number>
In order to limit the maximum number of reducers:
  set hive.exec.reducers.max=<number>
In order to set a constant number of reducers:
  set mapreduce.job.reduces=<number>
Starting Job = job_1513259210539_0003, Tracking URL = http://localhost:8088/proxy/application_1513259210539_0003/
Kill Command = /home/acadgild/hadoop-2.6.0/bin/hadoop job  -kill job_1513259210539_0003
Hadoop job information for Stage-1: number of mappers: 1; number of reducers: 1
2017-12-15 08:57:18,199 Stage-1 map = 0%,  reduce = 0%
2017-12-15 08:57:43,363 Stage-1 map = 100%,  reduce = 0%, Cumulative CPU 5.2 sec
2017-12-15 08:58:07,900 Stage-1 map = 100%,  reduce = 78%, Cumulative CPU 7.27 sec
2017-12-15 08:58:10,143 Stage-1 map = 100%,  reduce = 100%, Cumulative CPU 8.02 sec
MapReduce Total cumulative CPU time: 8 seconds 20 msec
Ended Job = job_1513259210539_0003
MapReduce Jobs Launched:
Stage-Stage-1: Map: 1  Reduce: 1   Cumulative CPU: 8.02 sec   HDFS Read: 650 HDFS Write: 48 SUCCESS
Total MapReduce CPU Time Spent: 8 seconds 20 msec
OK
1990    23
1991    22
1992    11
1993    16
1994    23
1995    12
Time taken: 85.525 seconds, Fetched: 6 row(s)
hive> █
```

3. Calculate maximum temperature from temperature_data table corresponding to those years which have at least 2 entries in the table.

Query:

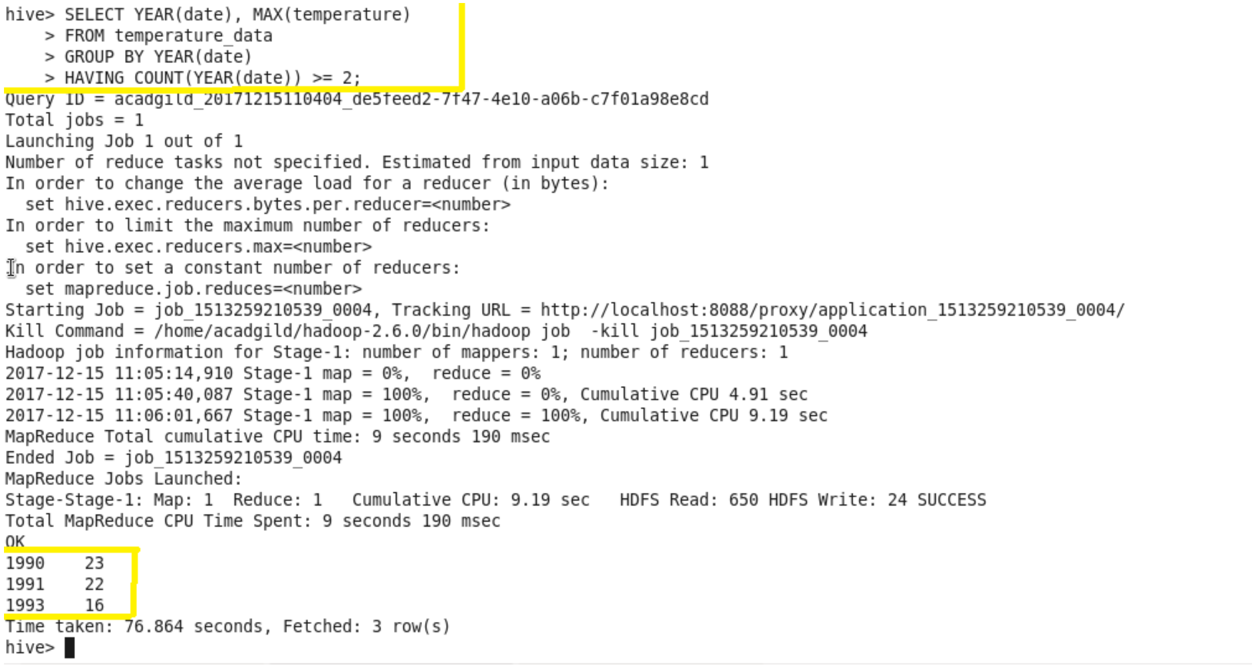
SELECT YEAR(date), MAX(temperature)

FROM temperature_data

GROUP BY YEAR(date)

HAVING COUNT(YEAR(date)) >= 2;

Output:



```
hive> SELECT YEAR(date), MAX(temperature)
    > FROM temperature_data
    > GROUP BY YEAR(date)
    > HAVING COUNT(YEAR(date)) >= 2;
Query ID = acadgild_20171215110404_de5feed2-7f47-4e10-a06b-c7f01a98e8cd
Total jobs = 1
Launching Job 1 out of 1
Number of reduce tasks not specified. Estimated from input data size: 1
In order to change the average load for a reducer (in bytes):
  set hive.exec.reducers.bytes.per.reducer=<number>
In order to limit the maximum number of reducers:
  set hive.exec.reducers.max=<number>
In order to set a constant number of reducers:
  set mapreduce.job.reduces=<number>
Starting Job = job_1513259210539_0004, Tracking URL = http://localhost:8088/proxy/application_1513259210539_0004/
Kill Command = /home/acadgild/hadoop-2.6.0/bin/hadoop job  -kill job_1513259210539_0004
Hadoop job information for Stage-1: number of mappers: 1; number of reducers: 1
2017-12-15 11:05:14,910 Stage-1 map = 0%,  reduce = 0%
2017-12-15 11:05:40,087 Stage-1 map = 100%,  reduce = 0%, Cumulative CPU 4.91 sec
2017-12-15 11:06:01,667 Stage-1 map = 100%,  reduce = 100%, Cumulative CPU 9.19 sec
MapReduce Total cumulative CPU time: 9 seconds 190 msec
Ended Job = job_1513259210539_0004
MapReduce Jobs Launched:
Stage-Stage-1: Map: 1  Reduce: 1   Cumulative CPU: 9.19 sec   HDFS Read: 650 HDFS Write: 24 SUCCESS
Total MapReduce CPU Time Spent: 9 seconds 190 msec
OK
1990    23
1991    22
1993    16
Time taken: 76.864 seconds, Fetched: 3 row(s)
hive> █
```

4. Create a view on the top of last query, name it temperature_data_vw.

Query:

CREATE VIEW IF NOT EXISTS temperature_data_vw

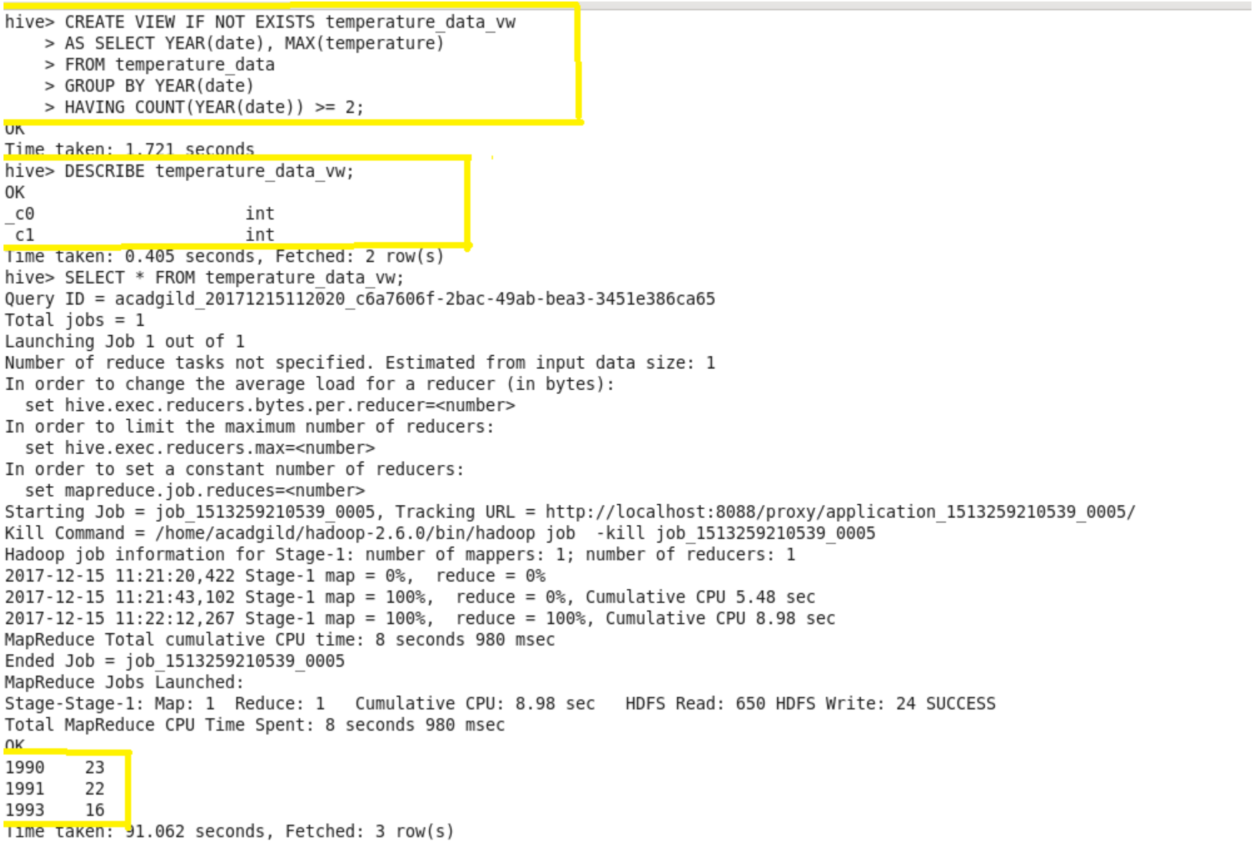
AS SELECT YEAR(date), MAX(temperature)

FROM temperature_data

GROUP BY YEAR(date)

HAVING COUNT(YEAR(date)) >= 2;

Output:



```
hive> CREATE VIEW IF NOT EXISTS temperature_data_vw
    > AS SELECT YEAR(date), MAX(temperature)
    > FROM temperature_data
    > GROUP BY YEAR(date)
    > HAVING COUNT(YEAR(date)) >= 2;
OK
Time taken: 1.721 seconds
hive> DESCRIBE temperature_data_vw;
OK
_c0                     int
_c1                     int
Time taken: 0.405 seconds, Fetched: 2 row(s)
hive> SELECT * FROM temperature_data_vw;
Query ID = acadgild_20171215112020_c6a7606f-2bac-49ab-bea3-3451e386ca65
Total jobs = 1
Launching Job 1 out of 1
Number of reduce tasks not specified. Estimated from input data size: 1
In order to change the average load for a reducer (in bytes):
  set hive.exec.reducers.bytes.per.reducer=<number>
In order to limit the maximum number of reducers:
  set hive.exec.reducers.max=<number>
In order to set a constant number of reducers:
  set mapreduce.job.reduces=<number>
Starting Job = job_1513259210539_0005, Tracking URL = http://localhost:8088/proxy/application_1513259210539_0005/
Kill Command = /home/acadgild/hadoop-2.6.0/bin/hadoop job  -kill job_1513259210539_0005
Hadoop job information for Stage-1: number of mappers: 1; number of reducers: 1
2017-12-15 11:21:20,422 Stage-1 map = 0%,  reduce = 0%
2017-12-15 11:21:43,102 Stage-1 map = 100%,  reduce = 0%, Cumulative CPU 5.48 sec
2017-12-15 11:22:12,267 Stage-1 map = 100%,  reduce = 100%, Cumulative CPU 8.98 sec
MapReduce Total cumulative CPU time: 8 seconds 980 msec
Ended Job = job_1513259210539_0005
MapReduce Jobs Launched:
Stage-Stage-1: Map: 1  Reduce: 1   Cumulative CPU: 8.98 sec   HDFS Read: 650 HDFS Write: 24 SUCCESS
Total MapReduce CPU Time Spent: 8 seconds 980 msec
OK
1990    23
1991    22
1993    16
Time taken: 91.062 seconds, Fetched: 3 row(s)
```

5. Export contents from temperature_data_vw to a file in local file system, such that each file is '|' delimited.

Query:

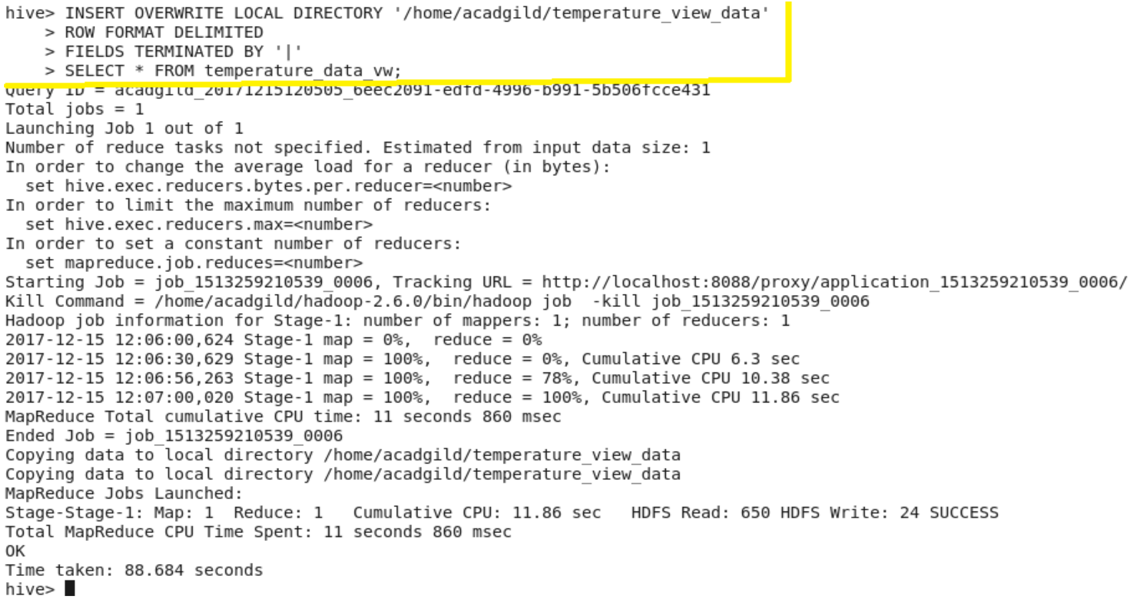
INSERT OVERWRITE LOCAL DIRECTORY '/home/acadgild/temperature_view_data'

ROW FORMAT DELIMITED

FIELDS TERMINATED BY '|'

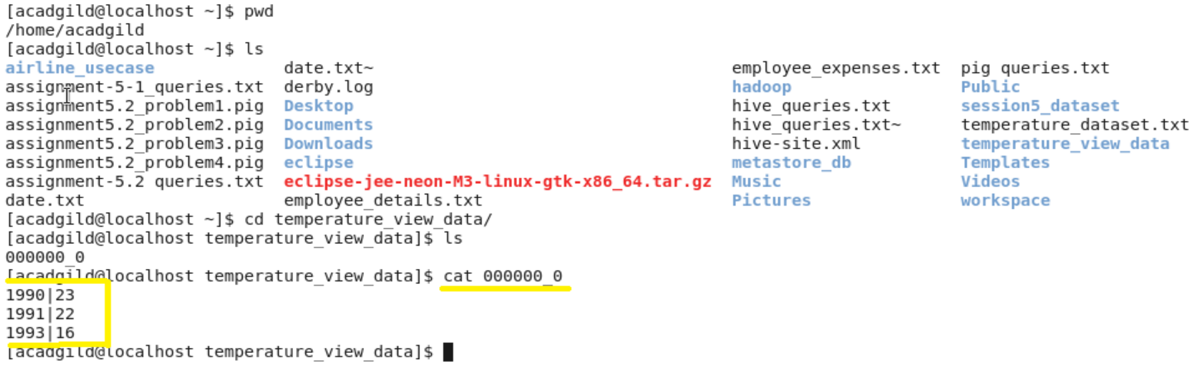
SELECT * FROM temperature_data_vw;

Note: Output folder that is being specified in file path of above query should not be present before running it.



```
hive> INSERT OVERWRITE LOCAL DIRECTORY '/home/acadgild/temperature_view_data'
    > ROW FORMAT DELIMITED
    > FIELDS TERMINATED BY '|'
    > SELECT * FROM temperature_data_vw;
Query ID = acadgild_20171215120505_6eec2091-edfd-4996-b991-5b506fcce431
Total jobs = 1
Launching Job 1 out of 1
Number of reduce tasks not specified. Estimated from input data size: 1
In order to change the average load for a reducer (in bytes):
  set hive.exec.reducers.bytes.per.reducer=<number>
In order to limit the maximum number of reducers:
  set hive.exec.reducers.max=<number>
In order to set a constant number of reducers:
  set mapreduce.job.reduces=<number>
Starting Job = job_1513259210539_0006, Tracking URL = http://localhost:8088/proxy/application_1513259210539_0006/
Kill Command = /home/acadgild/hadoop-2.6.0/bin/hadoop job  -kill job_1513259210539_0006
Hadoop job information for Stage-1: number of mappers: 1; number of reducers: 1
2017-12-15 12:06:00,624 Stage-1 map = 0%,  reduce = 0%
2017-12-15 12:06:30,629 Stage-1 map = 100%,  reduce = 0%, Cumulative CPU 6.3 sec
2017-12-15 12:06:56,263 Stage-1 map = 100%,  reduce = 78%, Cumulative CPU 10.38 sec
2017-12-15 12:07:00,020 Stage-1 map = 100%,  reduce = 100%, Cumulative CPU 11.86 sec
MapReduce Total cumulative CPU time: 11 seconds 860 msec
Ended Job = job_1513259210539_0006
Copying data to local directory /home/acadgild/temperature_view_data
Copying data to local directory /home/acadgild/temperature_view_data
MapReduce Jobs Launched:
Stage-Stage-1: Map: 1  Reduce: 1   Cumulative CPU: 11.86 sec   HDFS Read: 650 HDFS Write: 24 SUCCESS
Total MapReduce CPU Time Spent: 11 seconds 860 msec
OK
Time taken: 88.684 seconds
hive> █
```

Output file contents:



```
[acadgild@localhost ~]$ pwd
/home/acadgild
[acadgild@localhost ~]$ ls
airline_usecase             date.txt~                                    employee_expenses.txt  pig queries.txt
assignment-5-1_queries.txt  derby.log                                    hadoop                 Public
assignment5.2_problem1.pig  Desktop                                      hive_queries.txt       session5_dataset
assignment5.2_problem2.pig  Documents                                    hive_queries.txt~      temperature_dataset.txt
assignment5.2_problem3.pig  Downloads                                    hive-site.xml          temperature_view_data
assignment5.2_problem4.pig  eclipse                                      metastore_db           Templates
assignment-5.2 queries.txt  eclipse-jee-neon-M3-linux-gtk-x86_64.tar.gz  Music                  Videos
date.txt                    employee_details.txt                         Pictures               workspace
[acadgild@localhost ~]$ cd temperature_view_data/
[acadgild@localhost temperature_view_data]$ ls
000000_0
[acadgild@localhost temperature_view_data]$ cat 000000_0
1990|23
1991|22
1993|16
[acadgild@localhost temperature_view_data]$ █
```