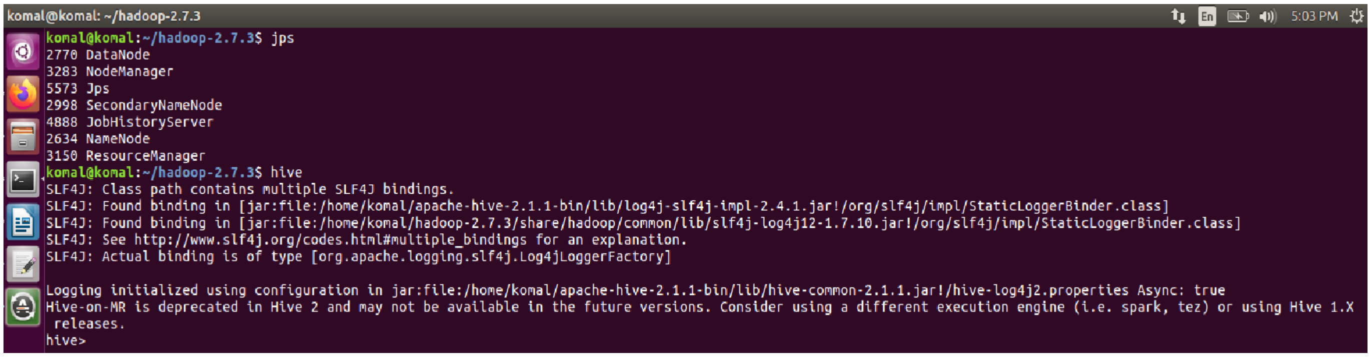
#Basic Operations: Hive#

1. To get started with the hive shell

hive

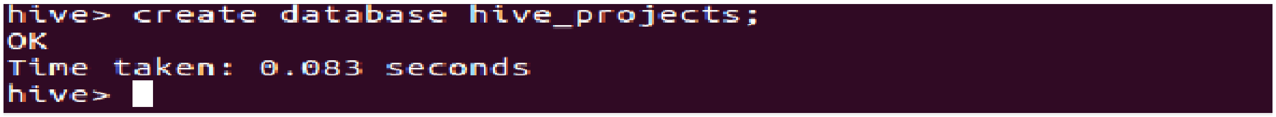


```
komal@komal:~/hadoop-2.7.3$ jps
2770 DataNode
3283 NodeManager
5573 Jps
2998 SecondaryNameNode
4888 JobHistoryServer
2634 NameNode
3150 ResourceManager
komal@komal:~/hadoop-2.7.3$ hive
SLF4J: Class path contains multiple SLF4J bindings.
SLF4J: Found binding in [jar:file:/home/komal/apache-hive-2.1.1-bin/lib/log4j-slf4j-impl-2.4.1.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: Found binding in [jar:file:/home/komal/hadoop-2.7.3/share/hadoop/common/lib/slf4j-log4j12-1.7.10.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: See http://www.slf4j.org/codes.html#multiple_bindings for an explanation.
SLF4J: Actual binding is of type [org.apache.logging.slf4j.Log4jLoggerFactory]

Logging initialized using configuration in jar:file:/home/komal/apache-hive-2.1.1-bin/lib/hive-common-2.1.1.jar!/hive-log4j2.properties Async: true
Hive-on-MR is deprecated in Hive 2 and may not be available in the future versions. Consider using a different execution engine (i.e. spark, tez) or using Hive 1.X
 releases.
hive>
```

2. To create a new database, in the hive shell

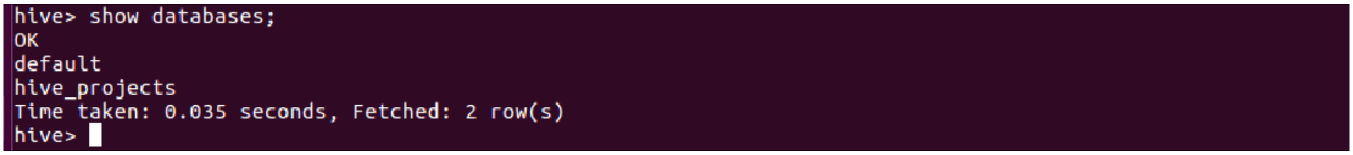
create database hive_projects;



```
hive> create database hive_projects;
OK
Time taken: 0.083 seconds
hive>
```

3. To see existing databases,

show databases;

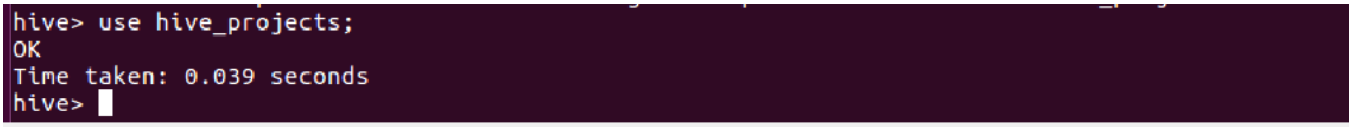


```
hive> show databases;
OK
default
hive_projects
Time taken: 0.035 seconds, Fetched: 2 row(s)
hive>
```

4. To start using the database which is already created,

(say, if ‘hive_projects’ named database is already created)

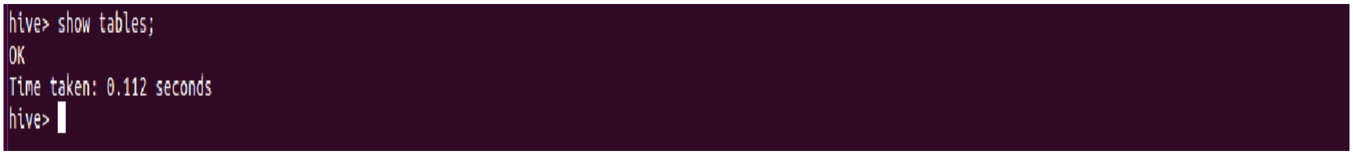
use ‘hive_projects’;



```
hive> use hive_projects;
OK
Time taken: 0.039 seconds
hive>
```

5. To check the existing tables present in the database,

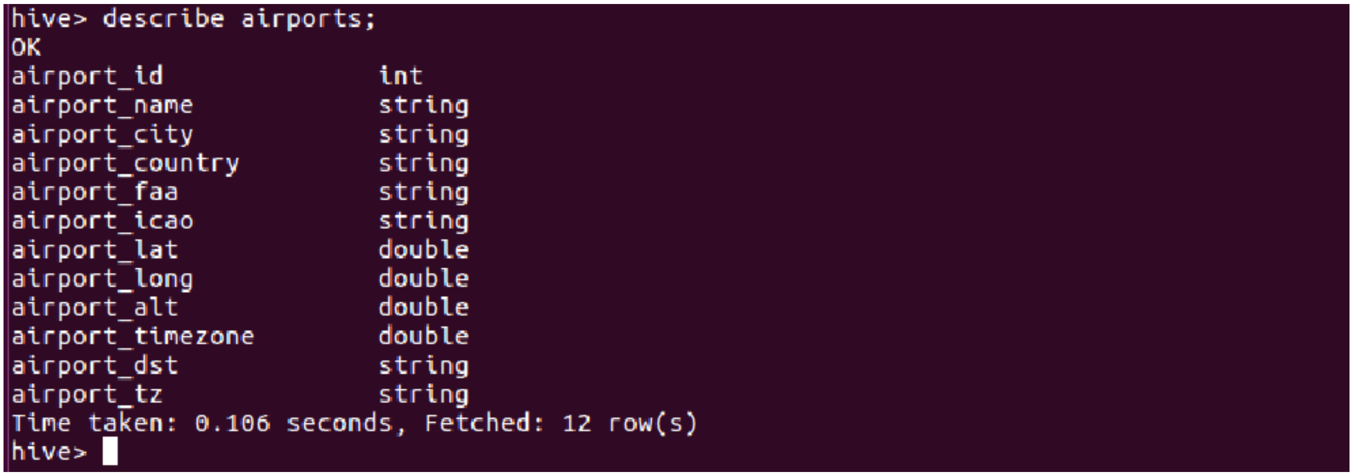
show tables;



```
hive> show tables;
OK
Time taken: 0.112 seconds
hive> 
```

6. To know the schema of the table,

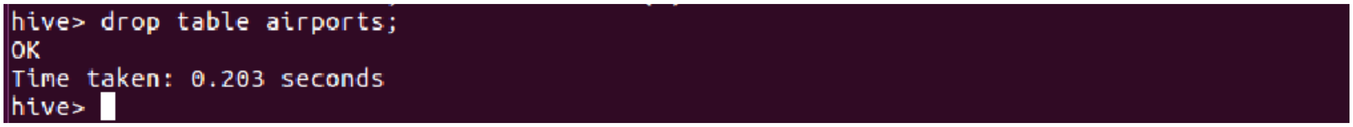
describe airports;



```
hive> describe airports;
OK
airport_id              int
airport_name            string
airport_city            string
airport_country         string
airport_faa             string
airport_icao            string
airport_lat             double
airport_long            double
airport_alt             double
airport_timezone        double
airport_dst             string
airport_tz              string
Time taken: 0.106 seconds, Fetched: 12 row(s)
hive> 
```

7. To drop a table,

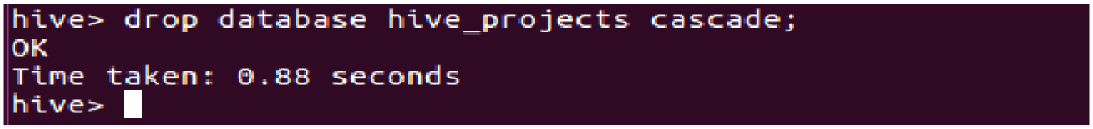
drop table airports;



```
hive> drop table airports;
OK
Time taken: 0.203 seconds
hive> 
```

8. To drop all tables inside a database,

drop database airports cascade; (if database contains any tables then by using cascade, database will be deleted)



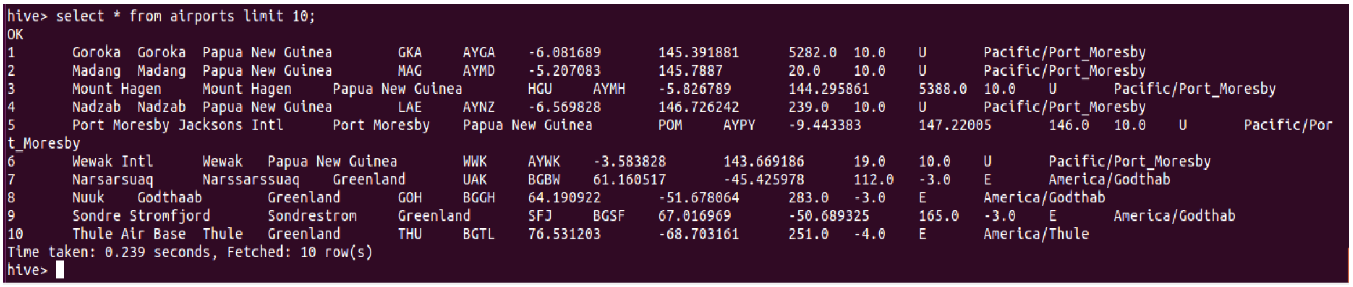
```
hive> drop database hive_projects cascade;
OK
Time taken: 0.88 seconds
hive> 
```

9. To query the table.

(to check if the data is loaded into the hive table)

select * from airports; (to see entire data) OR

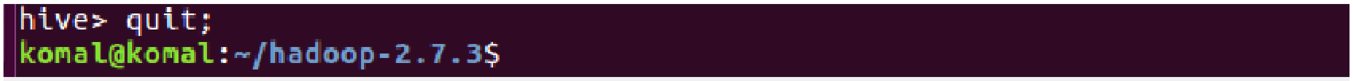
select * from airports limit 10;



```
hive> select * from airports limit 10;
OK
1       Goroka  Goroka  Papua New Guinea        GKA     AYGA    -6.081689       145.391881      5282.0  10.0    U       Pacific/Port_Moresby
2       Madang  Madang  Papua New Guinea        MAG     AYMD    -5.207083       145.7887        20.0    10.0    U       Pacific/Port_Moresby
3       Mount Hagen     Mount Hagen     Papua New Guinea        HGU     AYMH    -5.826789       144.295861      5388.0  10.0    U       Pacific/Port_Moresby
4       Nadzab  Nadzab  Papua New Guinea        LAE     AYNZ    -6.569828       146.726242      239.0   10.0    U       Pacific/Port_Moresby
5       Port Moresby Jacksons Intl      Port Moresby    Papua New Guinea        POM     AYPY    -9.443383       147.22005       146.0   10.0    U       Pacific/Por
t_Moresby
6       Wewak Intl      Wewak   Papua New Guinea        WWK     AYWK    -3.583828       143.669186      19.0    10.0    U       Pacific/Port_Moresby
7       Narsarsuaq      Narssarssuaq    Greenland       UAK     BGBW    61.160517       -45.425978      112.0   -3.0    E       America/Godthab
8       Nuuk    Godthaab        Greenland       GOH     BGGH    64.190922       -51.678064      283.0   -3.0    E       America/Godthab
9       Sondre Stromfjord       Sondrestrom     Greenland       SFJ     BGSF    67.016969       -50.689325      165.0   -3.0    E       America/Godthab
10      Thule Air Base  Thule   Greenland       THU     BGTL    76.531203       -68.703161      251.0   -4.0    E       America/Thule
Time taken: 0.239 seconds, Fetched: 10 row(s)
hive> 
```

10**.** To come out of the hive shell,

quit; or ctrl+c



```
hive> quit;
komal@komal:~/hadoop-2.7.3$
```

#Store Files on HDFS To perform operations (skip if files are stored in local storage)

1.Create directory

bin/hdfs dfs mkdir /hive

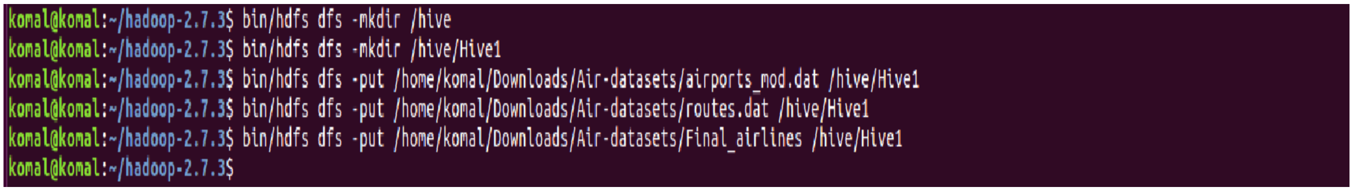
bin/hdfs dfs mkdir /hive/hive

2. Move files to hdfs

bin/hdfs dfs -put /home/komal/Downloads/Air-datasets/Airports_mod.dat   /hive/Hive1

bin/hdfs dfs -put /home/komal/Downloads/Air-datasets/routes.dat   /hive/Hive1

bin/hdfs dfs -put /home/komal/Downloads/Air-datasets/Final_airlines   /hive/Hive1



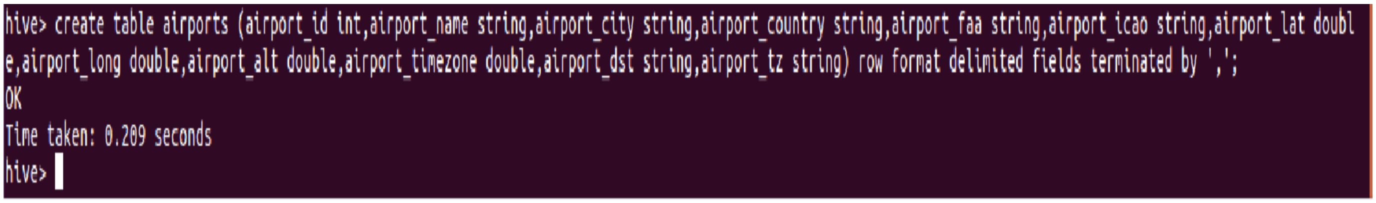
```
komal@komal:~/hadoop-2.7.3$ bin/hdfs dfs -mkdir /hive
komal@komal:~/hadoop-2.7.3$ bin/hdfs dfs -mkdir /hive/Hive1
komal@komal:~/hadoop-2.7.3$ bin/hdfs dfs -put /home/komal/Downloads/Air-datasets/airports_mod.dat /hive/Hive1
komal@komal:~/hadoop-2.7.3$ bin/hdfs dfs -put /home/komal/Downloads/Air-datasets/routes.dat /hive/Hive1
komal@komal:~/hadoop-2.7.3$ bin/hdfs dfs -put /home/komal/Downloads/Air-datasets/Final_airlines /hive/Hive1
komal@komal:~/hadoop-2.7.3$
```

Problem Solution: (Part 1)

Analysis of Airport Data using Hadoop-Hive

1. **Creating table airport for airports_mod.dat**:

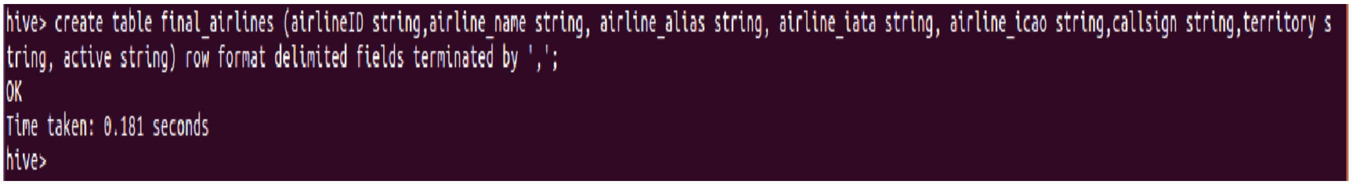
create table airports (airport_id int,airport_name string,airport_city string,airport_country string,airport_faa string,airport_icao string,airport_lat double,airport_long double,airport_alt double,airport_timezone double,airport_dst string,airport_tz string) row format delimited fields terminated by ',';



```
hive> create table airports (airport_id int,airport_name string,airport_city string,airport_country string,airport_faa string,airport_icao string,airport_lat doubl
e,airport_long double,airport_alt double,airport_timezone double,airport_dst string,airport_tz string) row format delimited fields terminated by ',';
OK
Time taken: 0.209 seconds
hive> 
```

2. **Creating table finalairlines for Final_airlines** :

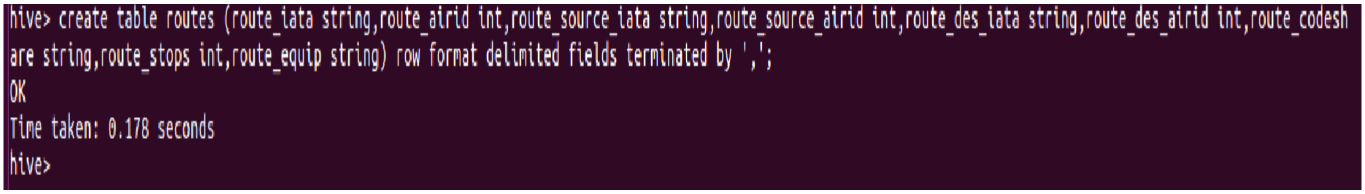
create table final_airlines (airlineID string,airline_name string, airline_alias string, airline_iata string, airline_icao string,callsign string,territory string, active string) row format delimited fields terminated by ',';



```
hive> create table final_airlines (airlineID string,airline_name string, airline_alias string, airline_iata string, airline_icao string,callsign string,territory s
tring, active string) row format delimited fields terminated by ',';
OK
Time taken: 0.181 seconds
hive>
```

3. **Creating table route for routes.dat**:

create table routes (route_iata string,route_airid int,route_source_iata string,route_source_airid int,route_des_iata string,route_des_airid int,route_codeshare string,route_stops int,route_equip string) row format delimited fields terminated by ',';

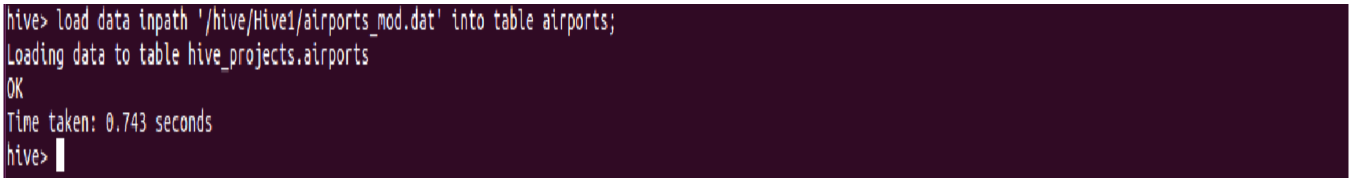


```
hive> create table routes (route_iata string,route_airid int,route_source_iata string,route_source_airid int,route_des_iata string,route_des_airid int,route_codesh
are string,route_stops int,route_equip string) row format delimited fields terminated by ',';
OK
Time taken: 0.178 seconds
hive>
```

4. **Loading data into airport table**

- If the file is stored in hdfs then

load data inpath ‘/hive/Hive1/airports_mod.dat’ into table airports;

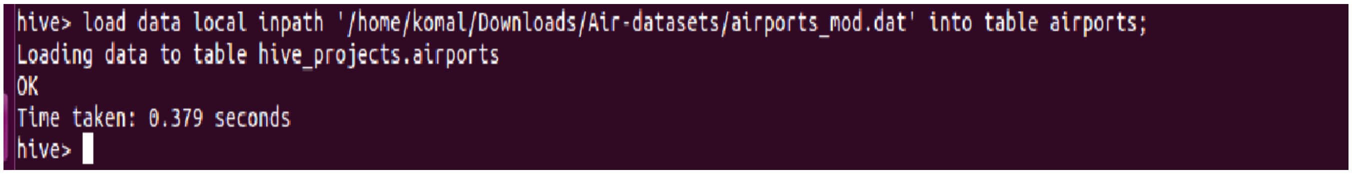


```
hive> load data inpath '/hive/Hive1/airports_mod.dat' into table airports;
Loading data to table hive_projects.airports
OK
Time taken: 0.743 seconds
hive> 
```

OR

- If the file is stored in local storage then

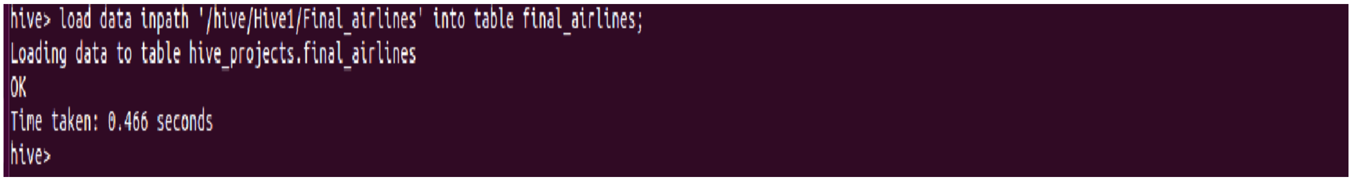
load data local inpath ‘/home/komal/Downloads/Air-datasets/airports_mod.dat’ into table airports;



```
hive> load data local inpath '/home/komal/Downloads/Air-datasets/airports_mod.dat' into table airports;
Loading data to table hive_projects.airports
OK
Time taken: 0.379 seconds
hive> 
```

5. **Loading data into final airlines table**

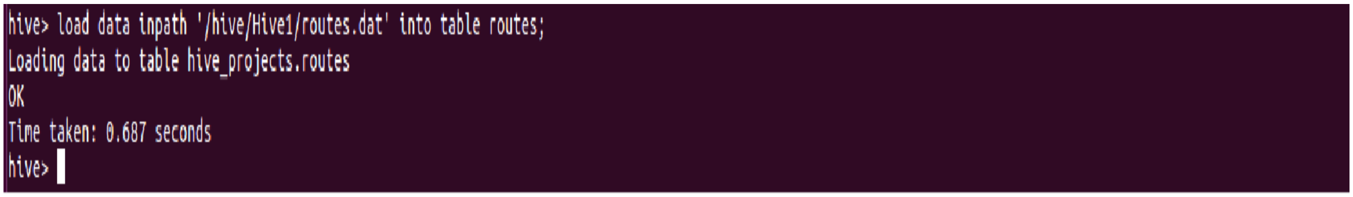
load data inpath ‘/hive/Hive1/Final_airlines’ into table final_airlines;



```
hive> load data inpath '/hive/Hive1/Final_airlines' into table final_airlines;
Loading data to table hive_projects.final_airlines
OK
Time taken: 0.466 seconds
hive>
```

6**. Loading data into route table**

load data inpath ‘/hive/Hive1/routes.dat’ into table routes;

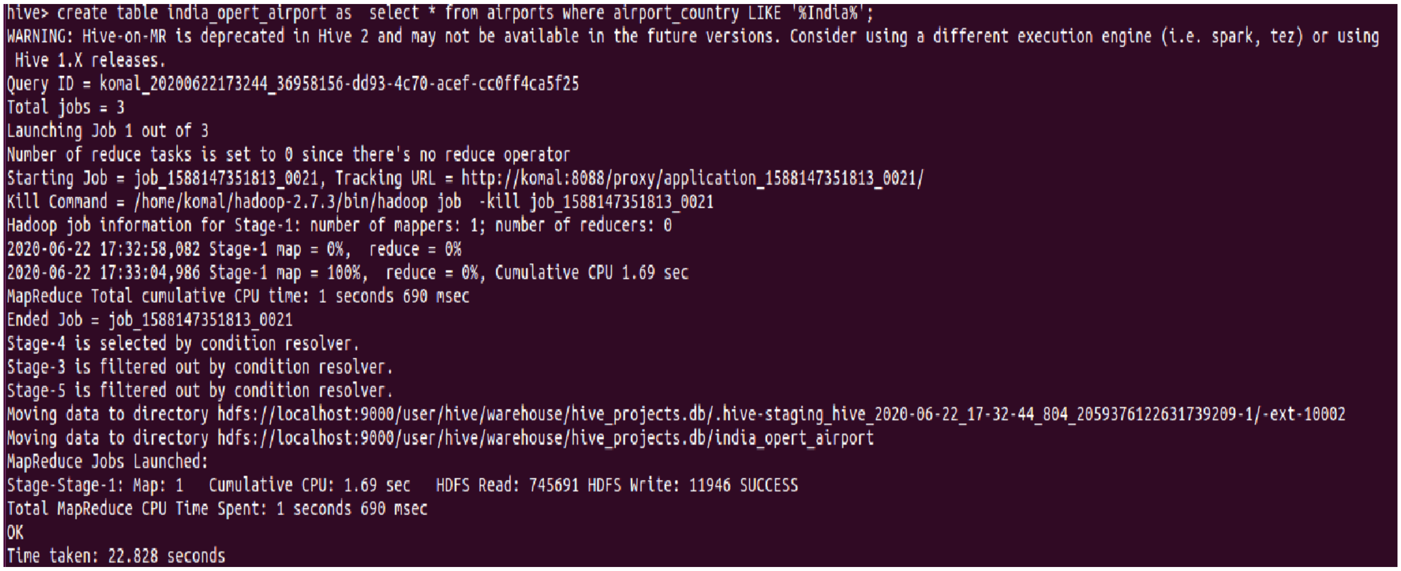


```
hive> load data inpath '/hive/Hive1/routes.dat' into table routes;
Loading data to table hive_projects.routes
OK
Time taken: 0.687 seconds
hive> 
```

Problem solution: (Part 2)

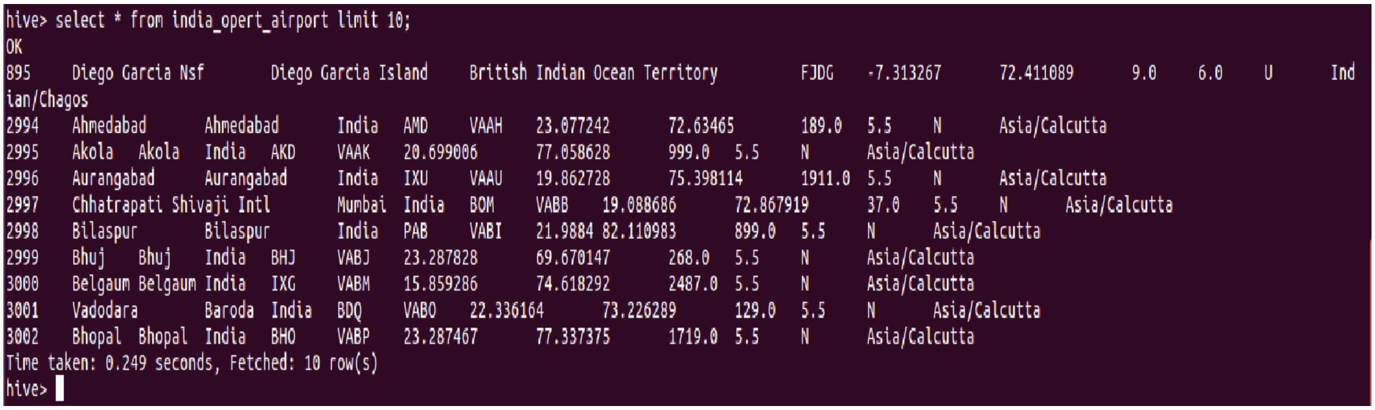
a) **Find list of Airports operating in the Country India**;

create table india_opert_airport as select * from airports where airport_country LIKE '%India%';



```
hive> create table india_opert_airport as  select * from airports where airport_country LIKE '%India%';
WARNING: Hive-on-MR is deprecated in Hive 2 and may not be available in the future versions. Consider using a different execution engine (i.e. spark, tez) or using
 Hive 1.X releases.
Query ID = komal_20200622173244_36958156-dd93-4c70-acef-cc0ff4ca5f25
Total jobs = 3
Launching Job 1 out of 3
Number of reduce tasks is set to 0 since there's no reduce operator
Starting Job = job_1588147351813_0021, Tracking URL = http://komal:8088/proxy/application_1588147351813_0021/
Kill Command = /home/komal/hadoop-2.7.3/bin/hadoop job  -kill job_1588147351813_0021
Hadoop job information for Stage-1: number of mappers: 1; number of reducers: 0
2020-06-22 17:32:58,082 Stage-1 map = 0%,  reduce = 0%
2020-06-22 17:33:04,986 Stage-1 map = 100%,  reduce = 0%, Cumulative CPU 1.69 sec
MapReduce Total cumulative CPU time: 1 seconds 690 msec
Ended Job = job_1588147351813_0021
Stage-4 is selected by condition resolver.
Stage-3 is filtered out by condition resolver.
Stage-5 is filtered out by condition resolver.
Moving data to directory hdfs://localhost:9000/user/hive/warehouse/hive_projects.db/.hive-staging_hive_2020-06-22_17-32-44_804_2059376122631739209-1/-ext-10002
Moving data to directory hdfs://localhost:9000/user/hive/warehouse/hive_projects.db/india_opert_airport
MapReduce Jobs Launched:
Stage-Stage-1: Map: 1   Cumulative CPU: 1.69 sec   HDFS Read: 745691 HDFS Write: 11946 SUCCESS
Total MapReduce CPU Time Spent: 1 seconds 690 msec
OK
Time taken: 22.828 seconds
```

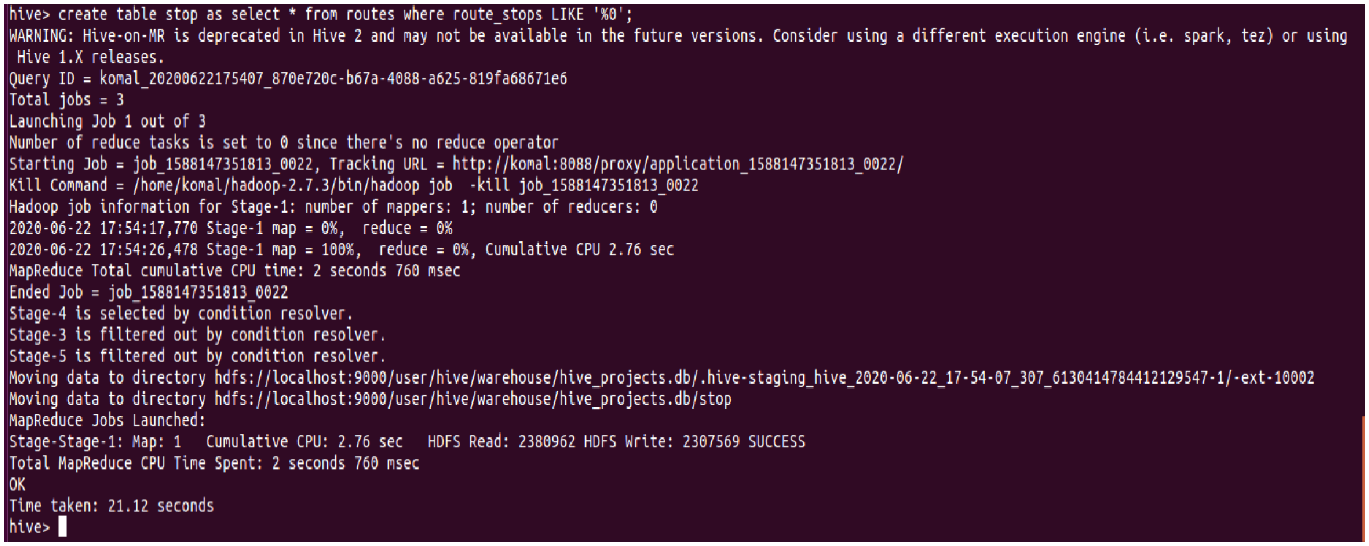
select * from india_opert_airport limit 10; (to show only first 10 values)



```
hive> select * from india_opert_airport limit 10;
OK
895     Diego Garcia Nsf        Diego Garcia Island     British Indian Ocean Territory          FJDG    -7.313267       72.411089       9.0     6.0     U       Ind
ian/Chagos
2994    Ahmedabad       Ahmedabad       India   AMD     VAAH    23.077242       72.63465        189.0   5.5     N       Asia/Calcutta
2995    Akola   Akola   India   AKD     VAAK    20.699006       77.058628       999.0   5.5     N       Asia/Calcutta
2996    Aurangabad      Aurangabad      India   IXU     VAAU    19.862728       75.398114       1911.0  5.5     N       Asia/Calcutta
2997    Chhatrapati Shivaji Intl        Mumbai  India   BOM     VABB    19.088686       72.867919       37.0    5.5     N       Asia/Calcutta
2998    Bilaspur        Bilaspur        India   PAB     VABI    21.9884 82.110983       899.0   5.5     N       Asia/Calcutta
2999    Bhuj    Bhuj    India   BHJ     VABJ    23.287828       69.670147       268.0   5.5     N       Asia/Calcutta
3000    Belgaum Belgaum India   IXG     VABM    15.859286       74.618292       2487.0  5.5     N       Asia/Calcutta
3001    Vadodara        Baroda  India   BDQ     VABO    22.336164       73.226289       129.0   5.5     N       Asia/Calcutta
3002    Bhopal  Bhopal  India   BHO     VABP    23.287467       77.337375       1719.0  5.5     N       Asia/Calcutta
Time taken: 0.249 seconds, Fetched: 10 row(s)
hive> 
```

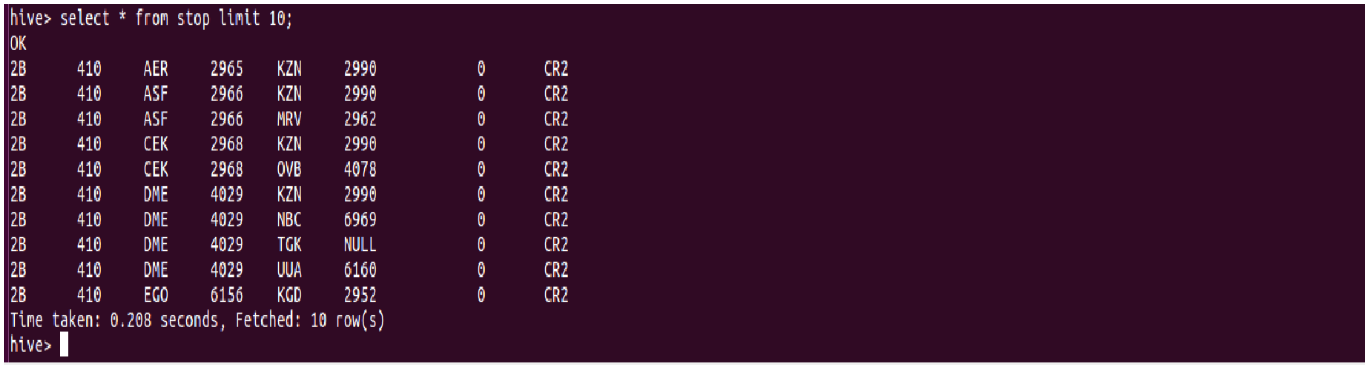
b) **Find the list of Airlines having zero stops**

create table stop as select * from routes where route_stops LIKE '%0';



```
hive> create table stop as select * from routes where route_stops LIKE '%0';
WARNING: Hive-on-MR is deprecated in Hive 2 and may not be available in the future versions. Consider using a different execution engine (i.e. spark, tez) or using
 Hive 1.X releases.
Query ID = komal_20200622175407_870e720c-b67a-4088-a625-819fa68671e6
Total jobs = 3
Launching Job 1 out of 3
Number of reduce tasks is set to 0 since there's no reduce operator
Starting Job = job_1588147351813_0022, Tracking URL = http://komal:8088/proxy/application_1588147351813_0022/
Kill Command = /home/komal/hadoop-2.7.3/bin/hadoop job  -kill job_1588147351813_0022
Hadoop job information for Stage-1: number of mappers: 1; number of reducers: 0
2020-06-22 17:54:17,770 Stage-1 map = 0%,  reduce = 0%
2020-06-22 17:54:26,478 Stage-1 map = 100%,  reduce = 0%, Cumulative CPU 2.76 sec
MapReduce Total cumulative CPU time: 2 seconds 760 msec
Ended Job = job_1588147351813_0022
Stage-4 is selected by condition resolver.
Stage-3 is filtered out by condition resolver.
Stage-5 is filtered out by condition resolver.
Moving data to directory hdfs://localhost:9000/user/hive/warehouse/hive_projects.db/.hive-staging_hive_2020-06-22_17-54-07_307_6130414784412129547-1/-ext-10002
Moving data to directory hdfs://localhost:9000/user/hive/warehouse/hive_projects.db/stop
MapReduce Jobs Launched:
Stage-Stage-1: Map: 1   Cumulative CPU: 2.76 sec   HDFS Read: 2380962 HDFS Write: 2307569 SUCCESS
Total MapReduce CPU Time Spent: 2 seconds 760 msec
OK
Time taken: 21.12 seconds
hive>
```

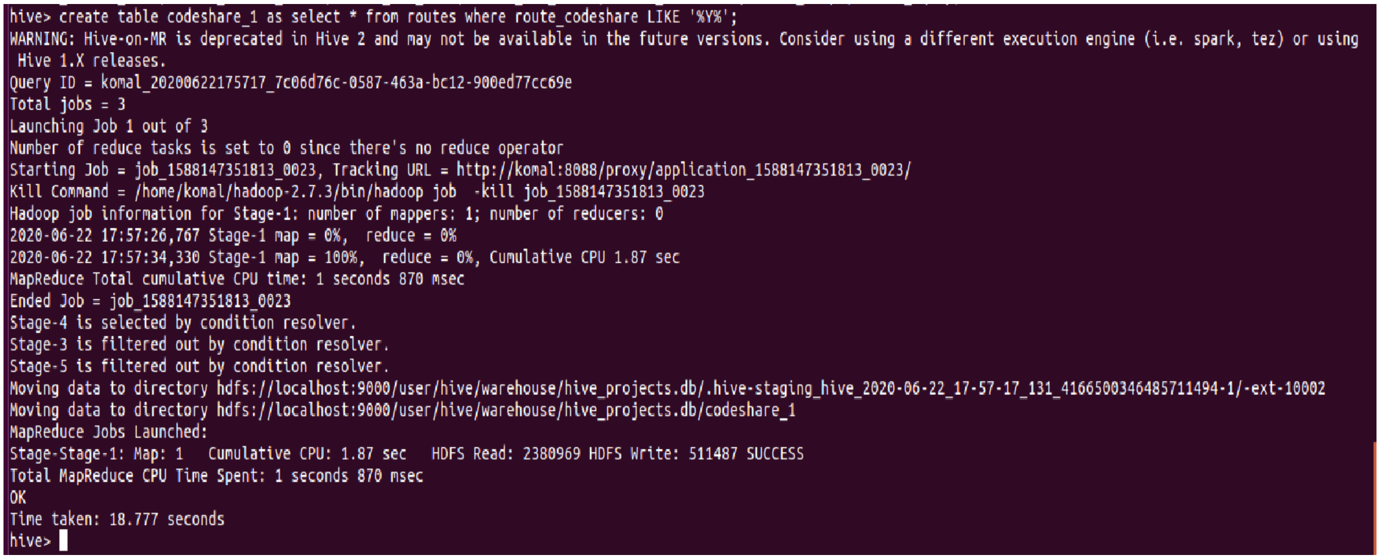
select * from stop limit 10;



```
hive> select * from stop limit 10;
OK
2B      410     AER     2965    KZN     2990            0       CR2
2B      410     ASF     2966    KZN     2990            0       CR2
2B      410     ASF     2966    MRV     2962            0       CR2
2B      410     CEK     2968    KZN     2990            0       CR2
2B      410     CEK     2968    OVB     4078            0       CR2
2B      410     DME     4029    KZN     2990            0       CR2
2B      410     DME     4029    NBC     6969            0       CR2
2B      410     DME     4029    TGK     NULL            0       CR2
2B      410     DME     4029    UUA     6160            0       CR2
2B      410     EGO     6156    KGD     2952            0       CR2
Time taken: 0.208 seconds, Fetched: 10 row(s)
hive>
```

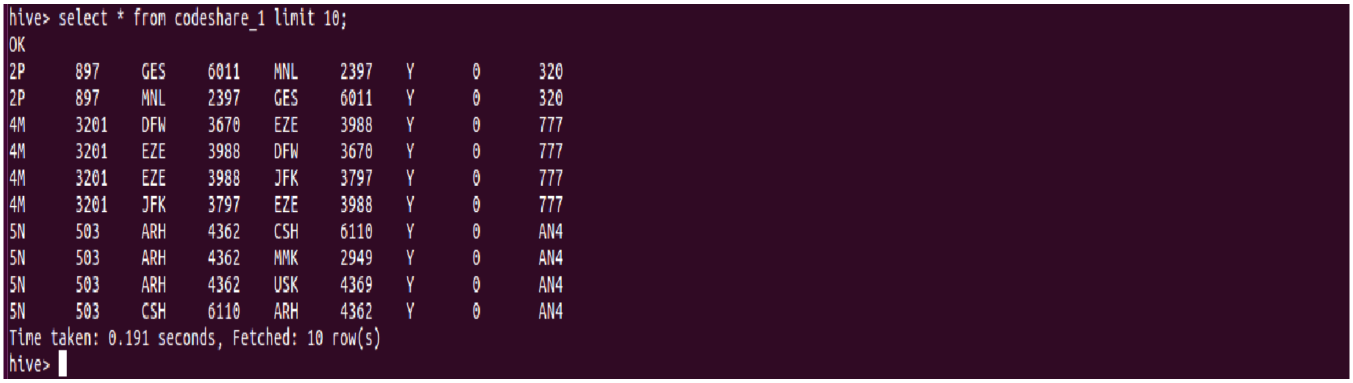
c) List of Airlines operating with code share

create table codeshare_1 as select * from routes where route_codeshare LIKE '%Y%';



```
hive> create table codeshare_1 as select * from routes where route_codeshare LIKE '%Y%';
WARNING: Hive-on-MR is deprecated in Hive 2 and may not be available in the future versions. Consider using a different execution engine (i.e. spark, tez) or using
 Hive 1.X releases.
Query ID = komal_20200622175717_7c06d76c-0587-463a-bc12-900ed77cc69e
Total jobs = 3
Launching Job 1 out of 3
Number of reduce tasks is set to 0 since there's no reduce operator
Starting Job = job_1588147351813_0023, Tracking URL = http://komal:8088/proxy/application_1588147351813_0023/
Kill Command = /home/komal/hadoop-2.7.3/bin/hadoop job  -kill job_1588147351813_0023
Hadoop job information for Stage-1: number of mappers: 1; number of reducers: 0
2020-06-22 17:57:26,767 Stage-1 map = 0%,  reduce = 0%
2020-06-22 17:57:34,330 Stage-1 map = 100%,  reduce = 0%, Cumulative CPU 1.87 sec
MapReduce Total cumulative CPU time: 1 seconds 870 msec
Ended Job = job_1588147351813_0023
Stage-4 is selected by condition resolver.
Stage-3 is filtered out by condition resolver.
Stage-5 is filtered out by condition resolver.
Moving data to directory hdfs://localhost:9000/user/hive/warehouse/hive_projects.db/.hive-staging_hive_2020-06-22_17-57-17_131_4166500346485711494-1/-ext-10002
Moving data to directory hdfs://localhost:9000/user/hive/warehouse/hive_projects.db/codeshare_1
MapReduce Jobs Launched:
Stage-Stage-1: Map: 1   Cumulative CPU: 1.87 sec   HDFS Read: 2380969 HDFS Write: 511487 SUCCESS
Total MapReduce CPU Time Spent: 1 seconds 870 msec
OK
Time taken: 18.777 seconds
hive>
```

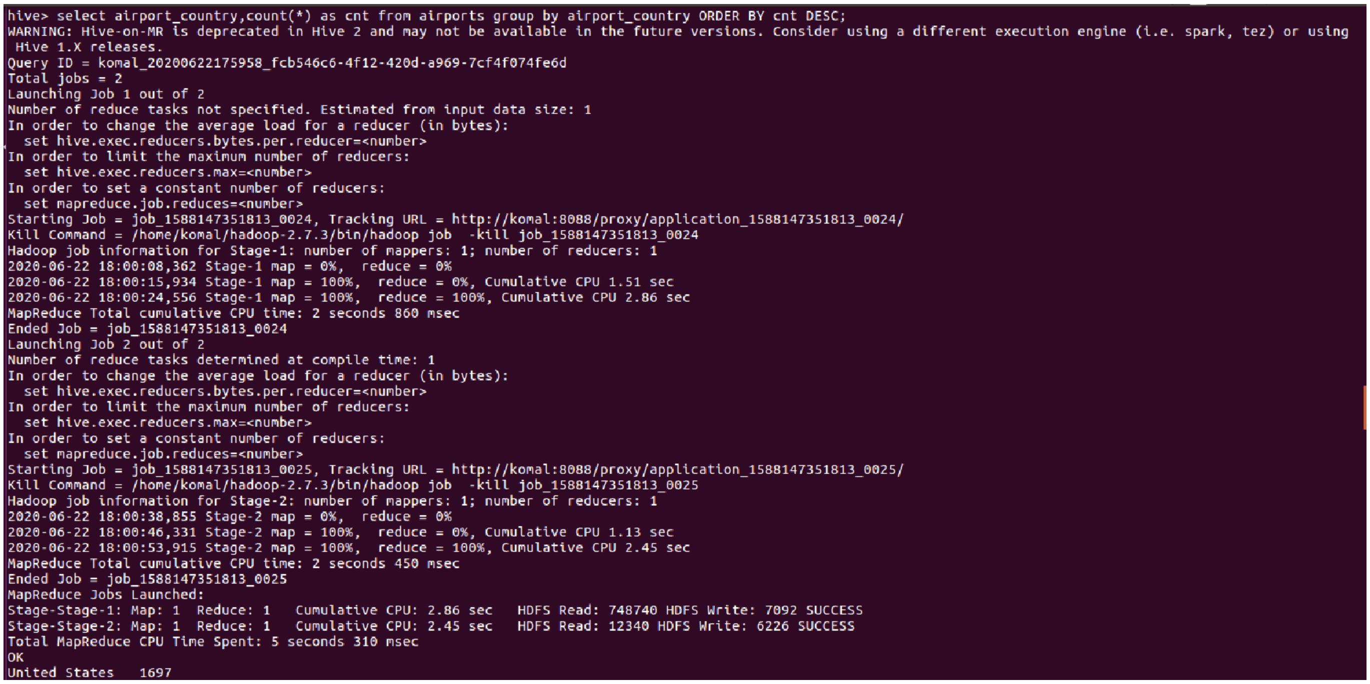
select * from codeshare_1 limit 10;



```
hive> select * from codeshare_1 limit 10;
OK
2P      897     GES     6011    MNL     2397    Y       0       320
2P      897     MNL     2397    GES     6011    Y       0       320
4M      3201    DFW     3670    EZE     3988    Y       0       777
4M      3201    EZE     3988    DFW     3670    Y       0       777
4M      3201    EZE     3988    JFK     3797    Y       0       777
4M      3201    JFK     3797    EZE     3988    Y       0       777
5N      503     ARH     4362    CSH     6110    Y       0       AN4
5N      503     ARH     4362    MMK     2949    Y       0       AN4
5N      503     ARH     4362    USK     4369    Y       0       AN4
5N      503     CSH     6110    ARH     4362    Y       0       AN4
Time taken: 0.191 seconds, Fetched: 10 row(s)
hive>
```

d) Which country (or) territory having highest Airports

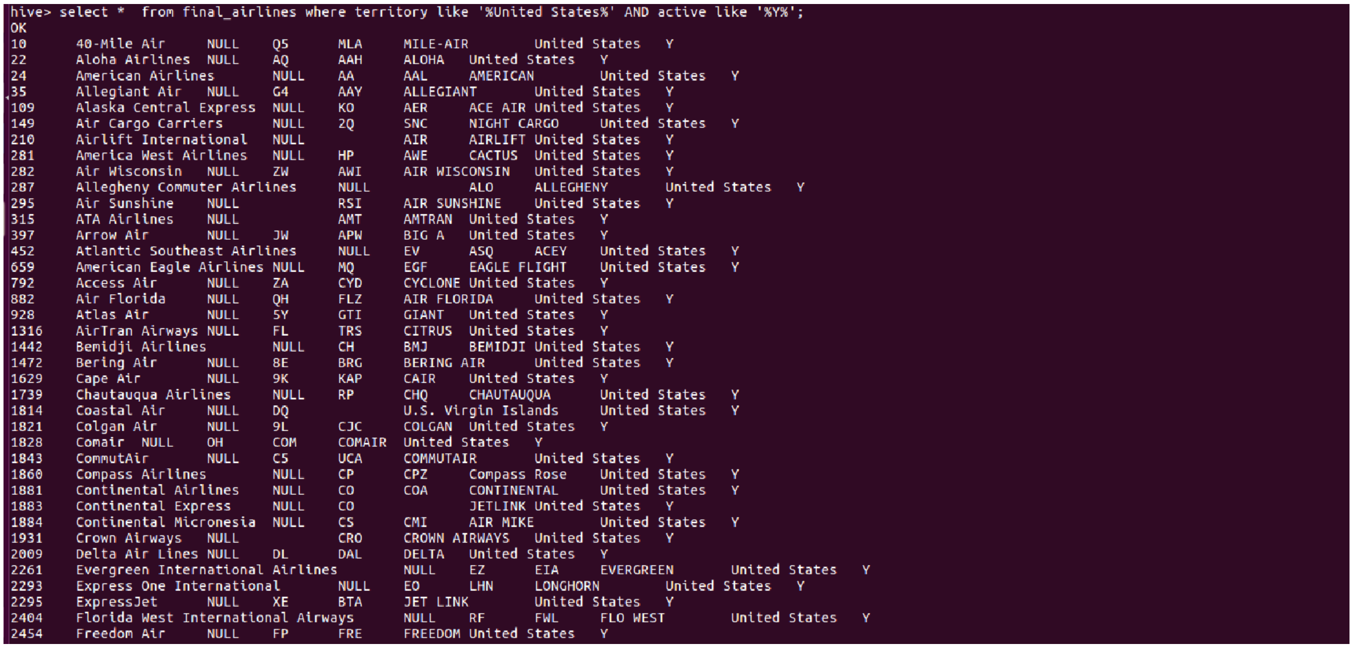
select airport_country,count(*) as cnt from airports group by airport_country ORDER BY cnt DESC;



```
hive> select airport_country,count(*) as cnt from airports group by airport_country ORDER BY cnt DESC;
WARNING: Hive-on-MR is deprecated in Hive 2 and may not be available in the future versions. Consider using a different execution engine (i.e. spark, tez) or using
 Hive 1.X releases.
Query ID = komal_20200622175958_fcb546c6-4f12-420d-a969-7cf4f074fe6d
Total jobs = 2
Launching Job 1 out of 2
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_1588147351813_0024, Tracking URL = http://komal:8088/proxy/application_1588147351813_0024/
Kill Command = /home/komal/hadoop-2.7.3/bin/hadoop job  -kill job_1588147351813_0024
Hadoop job information for Stage-1: number of mappers: 1; number of reducers: 1
2020-06-22 18:00:08,362 Stage-1 map = 0%,  reduce = 0%
2020-06-22 18:00:15,934 Stage-1 map = 100%,  reduce = 0%, Cumulative CPU 1.51 sec
2020-06-22 18:00:24,556 Stage-1 map = 100%,  reduce = 100%, Cumulative CPU 2.86 sec
MapReduce Total cumulative CPU time: 2 seconds 860 msec
Ended Job = job_1588147351813_0024
Launching Job 2 out of 2
Number of reduce tasks determined at compile time: 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_1588147351813_0025, Tracking URL = http://komal:8088/proxy/application_1588147351813_0025/
Kill Command = /home/komal/hadoop-2.7.3/bin/hadoop job  -kill job_1588147351813_0025
Hadoop job information for Stage-2: number of mappers: 1; number of reducers: 1
2020-06-22 18:00:38,855 Stage-2 map = 0%,  reduce = 0%
2020-06-22 18:00:46,331 Stage-2 map = 100%,  reduce = 0%, Cumulative CPU 1.13 sec
2020-06-22 18:00:53,915 Stage-2 map = 100%,  reduce = 100%, Cumulative CPU 2.45 sec
MapReduce Total cumulative CPU time: 2 seconds 450 msec
Ended Job = job_1588147351813_0025
MapReduce Jobs Launched:
Stage-Stage-1: Map: 1  Reduce: 1   Cumulative CPU: 2.86 sec   HDFS Read: 748740 HDFS Write: 7092 SUCCESS
Stage-Stage-2: Map: 1  Reduce: 1   Cumulative CPU: 2.45 sec   HDFS Read: 12340 HDFS Write: 6226 SUCCESS
Total MapReduce CPU Time Spent: 5 seconds 310 msec
OK
United States   1697
```

e) Find the list of Active Airlines in United state

select * from final_airlines where territory like '%United States%' AND active like '%Y%';



```
hive> select *  from final_airlines where territory like '%United States%' AND active like '%Y%';
OK
10      40-Mile Air     NULL    Q5      MLA     MILE-AIR        United States   Y
22      Aloha Airlines  NULL    AQ      AAH     ALOHA   United States   Y
24      American Airlines       NULL    AA      AAL     AMERICAN        United States   Y
35      Allegiant Air   NULL    G4      AAY     ALLEGIANT       United States   Y
109     Alaska Central Express  NULL    KO      AER     ACE AIR United States   Y
149     Air Cargo Carriers      NULL    2Q      SNC     NIGHT CARGO     United States   Y
210     Airlift International   NULL            AIR     AIRLIFT United States   Y
281     America West Airlines   NULL    HP      AWE     CACTUS  United States   Y
282     Air Wisconsin   NULL    ZW      AWI     AIR WISCONSIN   United States   Y
287     Allegheny Commuter Airlines     NULL            ALO     ALLEGHENY       United States   Y
295     Air Sunshine    NULL            RSI     AIR SUNSHINE    United States   Y
315     ATA Airlines    NULL            AMT     AMTRAN  United States   Y
397     Arrow Air       NULL    JW      APW     BIG A   United States   Y
452     Atlantic Southeast Airlines     NULL    EV      ASQ     ACEY    United States   Y
659     American Eagle Airlines NULL    MQ      EGF     EAGLE FLIGHT    United States   Y
792     Access Air      NULL    ZA      CYD     CYCLONE United States   Y
882     Air Florida     NULL    QH      FLZ     AIR FLORIDA     United States   Y
928     Atlas Air       NULL    5Y      GTI     GIANT   United States   Y
1316    AirTran Airways NULL    FL      TRS     CITRUS  United States   Y
1442    Bemidji Airlines        NULL    CH      BMJ     BEMIDJI United States   Y
1472    Bering Air      NULL    8E      BRG     BERING AIR      United States   Y
1629    Cape Air        NULL    9K      KAP     CAIR    United States   Y
1739    Chautauqua Airlines     NULL    RP      CHQ     CHAUTAUQUA      United States   Y
1814    Coastal Air     NULL    DQ              U.S. Virgin Islands     United States   Y
1821    Colgan Air      NULL    9L      CJC     COLGAN  United States   Y
1828    Comair  NULL    OH      COM     COMAIR  United States   Y
1843    CommutAir       NULL    C5      UCA     COMMUTAIR       United States   Y
1860    Compass Airlines        NULL    CP      CPZ     Compass Rose    United States   Y
1881    Continental Airlines    NULL    CO      COA     CONTINENTAL     United States   Y
1883    Continental Express     NULL    CO              JETLINK United States   Y
1884    Continental Micronesia  NULL    CS      CMI     AIR MIKE        United States   Y
1931    Crown Airways   NULL            CRO     CROWN AIRWAYS   United States   Y
2009    Delta Air Lines NULL    DL      DAL     DELTA   United States   Y
2261    Evergreen International Airlines        NULL    EZ      EIA     EVERGREEN       United States   Y
2293    Express One International       NULL    EO      LHN     LONGHORN        United States   Y
2295    ExpressJet      NULL    XE      BTA     JET LINK        United States   Y
2404    Florida West International Airways      NULL    RF      FWL     FLO WEST        United States   Y
2454    Freedom Air     NULL    FP      FRE     FREEDOM United States   Y
```