

MySQL

Table creation in MySQL database:

```
CREATE TABLE flight_input3(s_no integer,  
Year integer, Month LONGTEXT, DayofMonth integer,DayofWeek integer,  
DepTime integer, CRSDepTime integer, ArrTime integer, CRSArrTime integer,  
UniqueCarrier LONGTEXT, FlightNum integer, TailNum LONGTEXT,  
ActualElapsedTime integer, CRSElapsedTime integer,  
AirTime integer, ArrDelay integer,DepDelay integer, Origin LONGTEXT,  
Dest LONGTEXT, Distance integer,TaxiIn integer, TaxiOut integer,  
Cancelled integer, CancellationCode LONGTEXT);
```

Loading of data from local into MySQL table.

```
mysql -u hive -p --local_infile=1 PDA -e "LOAD DATA LOCAL INFILE  
'/home/hduser/Downloads/DelayedFlights.csv' INTO TABLE flight_input3 FIELDS  
TERMINATED BY ','";
```

```
mysql> show databases;  
+-----+  
| Database |  
+-----+  
| information_schema |  
| PDA |  
| amazon |  
| metastore |  
| mysql |  
| performance_schema |  
| sys |  
+-----+  
7 rows in set (0.68 sec)  
  
mysql> use PDA;  
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_PDA |  
+-----+  
| flight_input |  
| flight_input2 |  
| flight_input3 |  
+-----+  
3 rows in set (0.00 sec)  
  
mysql> select count(*) from flight_input3;  
+-----+  
| count(*) |  
+-----+  
| 1044680 |  
+-----+  
1 row in set (4.00 sec)  
  
mysql>
```

Hive

Table creation:

```
CREATE TABLE PDA.flight_input3
(s_no int, Year int, Month string, DayofMonth int, DayofWeek int, DepTime int, CRSDepTime int,
ArrTime int, CRSArrTime int, UniqueCarrier string, FlightNum int, TailNum string, ActualElapsedTime int,
CRSElapsedTime int, AirTime int, ArrDelay int, DepDelay int, Origin string, Dest string, Distance int,
TaxiIn int, axiOut int, Cancelled int, CancellationCode string )
ROW FORMAT SERDE 'org.apache.hadoop.hive.serde2.OpenCSVSerde'
WITH SERDEPROPERTIES (
"separatorChar" = ",", "quoteChar" = "\"")
stored as textfile
tblproperties ("skip.header.line.count"="1");
```

Loading data from MySQL into HDFS:

load data inpath '/flight_input3/flight_input3.csv' overwrite into table flight_input3;

Loading data from HDFS into hive using Sqoop:

```
sqoop import --connect jdbc:mysql://127.0.0.1/PDA --username hive --password admin --table
flight_input3 --target-dir /flight_input3 -m 1;
```

```
hive> show tables;
OK
catable1
catable2
catable3
flight_input
flight_input2
flight_input3
test_hive
test_orc
Time taken: 0.153 seconds, Fetched: 8 row(s)
hive> select count(*) from flight_input3;
WARNING: Hive-on-MR is deprecated in Hive 2 and may not be available in the future versions. Consider using a differen
Query ID = hduser_20190426214926_9b419bb6-aad1-4226-a2fb-e41e3e633ce5
Total jobs = 1
Launching Job 1 out of 1
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_1556311437514_0001, Tracking URL = http://PDA-VirtualBox:8088/proxy/application_1556311437514_0001/
Kill Command = /usr/local/hadoop/bin/hadoop job -kill job_1556311437514_0001
Hadoop job information for Stage-1: number of mappers: 1; number of reducers: 1
2019-04-26 21:50:02,370 Stage-1 map = 0%, reduce = 0%
2019-04-26 21:50:37,708 Stage-1 map = 100%, reduce = 0%, Cumulative CPU 12.08 sec
2019-04-26 21:50:51,419 Stage-1 map = 100%, reduce = 100%, Cumulative CPU 14.6 sec
MapReduce Total cumulative CPU time: 14 seconds 600 msec
Ended Job = job_1556311437514_0001
MapReduce Jobs Launched:
Stage-Stage-1: Map: 1 Reduce: 1 Cumulative CPU: 14.6 sec HDFS Read: 100903190 HDFS Write: 107 SUCCESS
Total MapReduce CPU Time Spent: 14 seconds 600 msec
OK
1044679
Time taken: 86.976 seconds, Fetched: 1 row(s)
hive>
```

Hive Queries:

Query1: Flights that got cancelled maximum number of times during each month.

```
INSERT OVERWRITE LOCAL DIRECTORY '/tmp/hive_Q1'  
ROW FORMAT DELIMITED  
FIELDS TERMINATED BY '\t'  
STORED AS TEXTFILE  
SELECT Month,flightnum,COUNT(cancelled) as t FROM flight_input3  
WHERE cancelled= 1  
GROUP BY Month,flightnum  
ORDER BY t DESC  
LIMIT 10;
```

```
hive> SELECT Month,flightnum,COUNT(cancelled) as t FROM flight_input3  
> WHERE cancelled= 1  
> GROUP BY Month,flightnum  
> ORDER BY t DESC  
> LIMIT 10;
```

```
Total MapReduce CPU Time Spent: 14 seconds 80 msec  
OK  
March      511      163  
January 511      127  
February   511      126  
April      511      124  
February   745      109  
March      494      97  
February   507      97  
February   351      94  
May        511      91  
March      351      90  
Time taken: 94.522 seconds, Fetched: 10 row(s)  
hive>
```

Query2: Flights that remained in air more time during each month.

```
SELECT Month,flightnum, SUM(AirTime) as d FROM flight_input3  
GROUP BY Month, flightnum  
ORDER BY d DESC  
LIMIT 10;
```

```
hive> SELECT Month,flightnum,COUNT(cancelled) as t FROM flight_input3  
> WHERE cancelled= 1  
> GROUP BY Month,flightnum  
> ORDER BY t DESC  
> LIMIT 10;
```

```
Total MapReduce CPU Time Spent: 15 seconds 890 msec
OK
February      15      36622.0
January 73    32027.0
March 73      30565.0
May 15       30274.0
February      73      29979.0
January 15    28429.0
March 267    28036.0
March 15     27811.0
May 73      27487.0
March 1      26820.0
Time taken: 73.654 seconds, Fetched: 10 row(s)
hive>
```

Query 3: Top 20 most visited airports in Unites States

```
INSERT OVERWRITE LOCAL DIRECTORY '/tmp/hive_Q3'
ROW FORMAT DELIMITED
FIELDS TERMINATED BY '\t'
STORED AS TEXTFILE
SELECT dest,COUNT(dest) as p FROM flight_input3
GROUP BY dest
ORDER BY p DESC
LIMIT 20;
```

```
hive> SELECT dest,COUNT(dest) as p FROM flight_input3
> GROUP BY dest
> ORDER BY p DESC
> LIMIT 20;
```

```
Total MapReduce CPU Time Spent: 11 seconds 800 msec
OK
ORD      62367
ATL      50426
DFW      38176
DEN      34154
LAX      32500
EWR      27865
LAS      26640
PHX      26270
SFO      23556
IAH      21985
DTW      20942
LGA      20739
MCO      19166
MSP      16529
SLC      16259
BWI      16188
PHL      16163
BOS      16141
JFK      15789
SEA      14880
Time taken: 69.289 seconds, Fetched: 20 row(s)
hive>
```

Query 4: Top carriers in US airports

```
INSERT OVERWRITE LOCAL DIRECTORY '/tmp/hive_Q4'
ROW FORMAT DELIMITED
FIELDS TERMINATED BY '\t'
STORED AS TEXTFILE
SELECT UniqueCarrier, count(FlightNum) as d FROM flight_input3
GROUP BY UniqueCarrier
ORDER BY d DESC
LIMIT 10;
```

```
hive> SELECT UniqueCarrier, count(FlightNum) as d FROM flight_input3
> GROUP BY UniqueCarrier
> ORDER BY d DESC
> LIMIT 10;
```

```

Total MapReduce CPU Time Spent: 11 seconds 780 msec
OK
WN      213885
AA      102651
MQ      82135
UA      81778
OO      73388
XE      62246
US      53684
DL      48692
NW      48265
CO      44152
Time taken: 71.432 seconds, Fetched: 10 row(s)
hive>

```



PDA_HiveOutputs.zip

MapReduce

BI Query1: Average delay time caused by airline carriers.

```

2019-04-25 19:40:38,175 INFO [pool-4-thread-1] mapred.LocalJobRunner (LocalJobRunner.java:run(325)) - Finishing task: attempt_local1186169858_0001_r_000000_0
2019-04-25 19:40:38,177 INFO [Thread-46] mapred.LocalJobRunner (LocalJobRunner.java:runTasks(456)) - reduce task executor complete.
2019-04-25 19:40:38,821 INFO [main] mapreduce.Job (Job.java:monitorAndPrintJob(1378)) - Job job_local1186169858_0001 completed successfully
2019-04-25 19:40:38,899 INFO [main] mapreduce.Job (Job.java:monitorAndPrintJob(1385)) - Counters: 30

File System Counters
  FILE: Number of bytes read=334676142
  FILE: Number of bytes written=406880246
  FILE: Number of read operations=0
  FILE: Number of large read operations=0
  FILE: Number of write operations=0

Map-Reduce Framework
  Map input records=7009728
  Map output records=3231406
  Map output bytes=64628120
  Map output materialized bytes=71090938
  Input split bytes=78
  Combine input records=0
  Combine output records=0
  Reduce input groups=20
  Reduce shuffle bytes=71090938
  Reduce input records=3231406
  Reduce output records=20
  Spilled Records=9694218
  Shuffled Maps=1
  Failed Shuffles=0
  Merged Map outputs=1
  GC time elapsed (ms)=685
  Total committed heap usage (bytes)=382869504

Shuffle Errors
  BAD_ID=0
  CONNECTION=0
  IO_ERROR=0
  WRONG_LENGTH=0
  WRONG_MAP=0
  WRONG_REDUCE=0

File Input Format Counters
  Bytes Read=0
File Output Format Counters
  Bytes Written=0

```

Input- Extracted from MySQL database through MapR by programmatically accessing MySQL.

```
mysql> select * from flight_input limit 40;
```

| airline | delay |
|---------|-------|
| "WN" | 8 |
| "WN" | 19 |
| "WN" | 8 |
| "WN" | -4 |
| "WN" | 34 |
| "WN" | 25 |
| "WN" | 67 |
| "WN" | -1 |
| "WN" | 2 |
| "WN" | 6 |
| "WN" | 6 |
| "WN" | 94 |
| "WN" | -4 |
| "WN" | 0 |
| "WN" | 2 |
| "WN" | 9 |
| "WN" | 27 |
| "WN" | 9 |
| "WN" | 28 |
| "WN" | 51 |
| "WN" | 1 |
| "WN" | 32 |
| "WN" | 20 |
| "WN" | 9 |
| "WN" | 1 |
| "WN" | 25 |
| "WN" | 87 |
| "WN" | 29 |
| "WN" | 1 |
| "WN" | 4 |
| "WN" | 82 |
| "WN" | 3 |
| "WN" | 2 |
| "WN" | 12 |
| "WN" | 19 |
| "WN" | 39 |
| "WN" | 1 |
| "WN" | 82 |
| "WN" | 22 |

Output - MapR output generated in Hbase through MapR program.

```
hbase(main):008:0> scan 'flight'
```

| ROW | COLUMN+CELL |
|------|---|
| "9E" | column=airline:delay, timestamp=1556217629944, value=@?\x1F6g\xFF\xD2] |
| "AA" | column=airline:delay, timestamp=1556217629944, value=@?\xD3\xB5\xDD\xE9\x055 |
| "AQ" | column=airline:delay, timestamp=1556217629944, value=@%\$\x89:\x16\x0B\xA4 |
| "AS" | column=airline:delay, timestamp=1556217629944, value=@8X\x0F\x0E\xD1\x0Ai |
| "B6" | column=airline:delay, timestamp=1556217629944, value=@C\xD8v\x1D\x00C~ |
| "CO" | column=airline:delay, timestamp=1556217629944, value=@:\xAB\x83\$m\x10A |
| "DL" | column=airline:delay, timestamp=1556217629944, value=@7\xD0o\xAF\x18\x98\xD1 |
| "EV" | column=airline:delay, timestamp=1556217629944, value=@?\x91\xB13\x12\xDA\xA6 |
| "F9" | column=airline:delay, timestamp=1556217629944, value=@1}\xC3A\xF0*\xBF |
| "FL" | column=airline:delay, timestamp=1556217629944, value=@<\xD9\x9E\x8B\xEFM% |
| "HA" | column=airline:delay, timestamp=1556217629944, value=@0y\xD7\x91e\xE2\x0A |
| "MQ" | column=airline:delay, timestamp=1556217629944, value=@>/\xFF\x8E)\xEA\xC9 |
| "NW" | column=airline:delay, timestamp=1556217629944, value=@:\xFF\x08\x8Cv\xB1\xC1 |
| "OH" | column=airline:delay, timestamp=1556217629944, value=@4\xAC0\x86\xA9\x17l |
| "OO" | column=airline:delay, timestamp=1556217629944, value=@<\x8Df8a\xB3\xBF |
| "UA" | column=airline:delay, timestamp=1556217629944, value=@@>\xB9\x16V[\x13\xB0 |
| "US" | column=airline:delay, timestamp=1556217629944, value=@7\x11E\xFF\x9A+: |
| "WN" | column=airline:delay, timestamp=1556217629944, value=@2\xA6>\x0F\xD1\x8E> |
| "XE" | column=airline:delay, timestamp=1556217629944, value=@@>\xFA\xE2\x10V\x04\xEB |
| "YV" | column=airline:delay, timestamp=1556217629944, value=@?b\xE8\xAA9\xAC\xAD |

20 row(s) in 0.3790 seconds

Java Files

MySqlRecordReader.j
ava
MySqlInputSplit.java
MySqlInputFormat.jav
a
DBInputWritable.java
AveragePair.java
AverageDelayReduce
r.java
AverageDelayMappe
r.java
AverageDelayDriver.j
ava
AverageDelayCombin
er.java



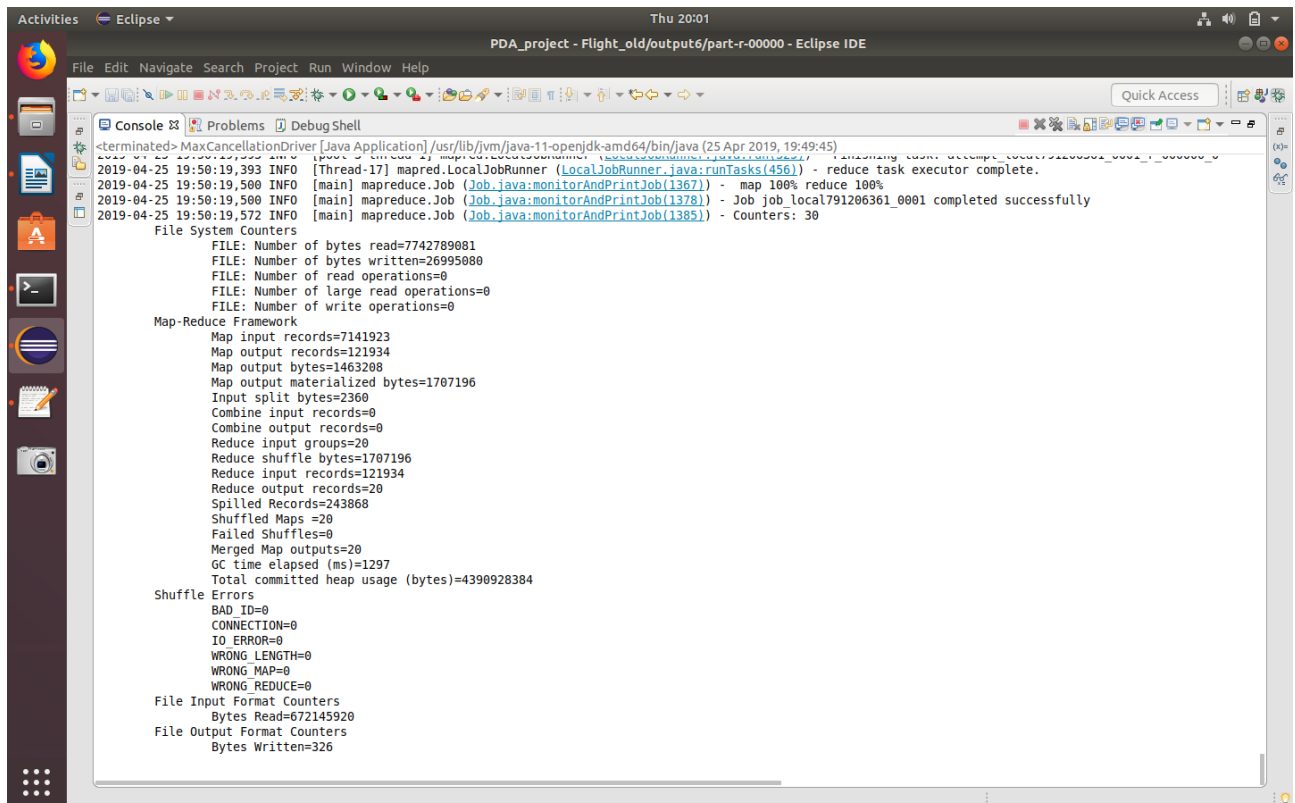
Average Delay output - Query 2.zip

BI Query2: Maximum number of flights that got cancelled in each route.

| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R |
|------|-------|------------|-----------|---------|------------|---------|------------|---------------|-----------|---------|-------------------|----------------|---------|----------|----------|--------|------|
| Year | Month | DayofMonth | DayOfWeek | DepTime | CRSDepTime | ArrTime | CRSArrTime | UniqueCarrier | FlightNum | TailNum | ActualElapsedTime | CRSElapsedTime | AirTime | ArrDelay | DepDelay | Origin | Dest |
| 2006 | 1 | 11 | 3 | 743 | 745 | 1024 | 1018 | US | 343 | N657AW | 281 | 273 | 223 | 6 | -2 | ATL | PHX |
| 2006 | 1 | 11 | 3 | 1053 | 1053 | 1313 | 1318 | US | 613 | N834AW | 260 | 265 | 214 | -5 | 0 | ATL | PHX |
| 2006 | 1 | 11 | 3 | 1915 | 1915 | 2110 | 2133 | US | 617 | N605AW | 235 | 258 | 220 | -23 | 0 | ATL | PHX |
| 2006 | 1 | 11 | 3 | 1753 | 1755 | 1925 | 1933 | US | 300 | N312AW | 152 | 158 | 126 | -8 | -2 | AUS | PHX |
| 2006 | 1 | 11 | 3 | 824 | 832 | 1015 | 1015 | US | 765 | N309AW | 171 | 163 | 132 | 0 | -8 | AUS | PHX |
| 2006 | 1 | 11 | 3 | 627 | 630 | 834 | 832 | US | 295 | N733UW | 127 | 122 | 108 | 2 | -3 | BDL | CLT |
| 2006 | 1 | 11 | 3 | 825 | 820 | 1041 | 1021 | US | 349 | N177UW | 136 | 121 | 111 | 20 | 5 | BDL | CLT |
| 2006 | 1 | 11 | 3 | 942 | 945 | 1155 | 1148 | US | 356 | N404US | 133 | 123 | 121 | 7 | -3 | BDL | CLT |
| 2006 | 1 | 11 | 3 | 1239 | 1245 | 1438 | 1445 | US | 775 | N722UW | 119 | 120 | 103 | -7 | -6 | BDL | CLT |
| 2006 | 1 | 11 | 3 | 1642 | 1645 | 1841 | 1845 | US | 1002 | N104UW | 119 | 120 | 105 | -4 | -3 | BDL | CLT |
| 2006 | 1 | 11 | 3 | 1836 | 1835 | NA | 2035 | US | 1103 | N425US | NA | 120 | NA | NA | 1 | BDL | CLT |
| 2006 | 1 | 11 | 3 | NA | 1725 | NA | 1845 | US | 69 | 0 | NA | 80 | NA | NA | NA | BDL | DCA |
| 2006 | 1 | 11 | 3 | 613 | 620 | 738 | 743 | US | 1159 | N162UW | 85 | 83 | 69 | -5 | -7 | BDL | DCA |
| 2006 | 1 | 11 | 3 | 1125 | 1125 | 1242 | 1245 | US | 1249 | N782AU | 77 | 80 | 68 | -3 | 0 | BDL | DCA |
| 2006 | 1 | 11 | 3 | 2045 | 2045 | 2205 | 2200 | US | 1680 | N814MD | 80 | 75 | 58 | 5 | 0 | BDL | DCA |
| 2006 | 1 | 11 | 3 | 1342 | 1340 | 1509 | 1455 | US | 1681 | N808MD | 87 | 75 | 73 | 14 | 2 | BDL | DCA |
| 2006 | 1 | 11 | 3 | 1752 | 1540 | 1923 | 1654 | US | 127 | N105UW | 91 | 74 | 69 | 149 | 132 | BDL | PHL |
| 2006 | 1 | 11 | 3 | 724 | 730 | 843 | 845 | US | 277 | N525AU | 79 | 75 | 54 | -2 | -6 | BDL | PHL |
| 2006 | 1 | 11 | 3 | 1153 | 1145 | 1324 | 1259 | US | 637 | N702UW | 91 | 74 | 50 | 25 | 8 | BDL | PHL |
| 2006 | 1 | 11 | 3 | 528 | 525 | 640 | 640 | US | 1658 | N807MD | 72 | 75 | 52 | 0 | 3 | BDL | PHL |
| 2006 | 1 | 11 | 3 | 630 | 630 | 950 | 1021 | US | 419 | N665AW | 320 | 351 | 287 | -31 | 0 | BDL | PHX |
| 2006 | 1 | 11 | 3 | 1515 | 1520 | 1651 | 1650 | US | 1607 | N813MA | 96 | 90 | 77 | 1 | -5 | BDL | PIT |
| 2006 | 1 | 11 | 3 | 557 | 605 | 805 | 818 | US | 78 | N577US | 68 | 73 | 52 | -13 | -8 | BNA | CLT |
| 2006 | 1 | 11 | 3 | 806 | 810 | 1035 | 1020 | US | 218 | N514AU | 89 | 70 | 68 | 15 | -4 | BNA | CLT |
| 2006 | 1 | 11 | 3 | 1828 | 1830 | 2035 | 2041 | US | 918 | N335US | 67 | 71 | 52 | -6 | -2 | BNA | CLT |
| 2006 | 1 | 11 | 3 | 910 | 640 | NA | 915 | US | 1650 | N821MD | NA | 95 | NA | NA | 150 | BNA | DCA |
| 2006 | 1 | 11 | 3 | 725 | 725 | 1015 | 1021 | US | 1636 | N822MD | 110 | 116 | 82 | -6 | 0 | BNA | PHL |
| 2006 | 1 | 11 | 3 | 1555 | 1600 | 1751 | 1806 | US | 678 | N659AW | 116 | 126 | 101 | -15 | -5 | BOI | PHX |
| 2006 | 1 | 11 | 3 | 657 | 700 | 902 | 905 | US | 856 | N837AW | 125 | 125 | 99 | -3 | -3 | BOI | PHX |
| 2006 | 1 | 11 | 3 | 1056 | 1100 | 1329 | 1317 | US | 53 | N723UW | 153 | 137 | 127 | 12 | -4 | BOS | CLT |
| 2006 | 1 | 11 | 3 | 1406 | 1415 | 1632 | 1633 | US | 191 | N751UW | 146 | 138 | 124 | -1 | -9 | BOS | CLT |
| 2006 | 1 | 11 | 3 | 1222 | 1230 | 1438 | 1447 | US | 257 | N749UW | 136 | 137 | 119 | -9 | -8 | BOS | CLT |
| 2006 | 1 | 11 | 3 | 742 | 745 | 1003 | 1009 | US | 329 | N624AU | 141 | 144 | 117 | -6 | -3 | BOS | CLT |
| 2006 | 1 | 11 | 3 | 610 | 615 | 824 | 834 | US | 561 | N632AU | 134 | 139 | 117 | -10 | -5 | BOS | CLT |
| 2006 | 1 | 11 | 3 | 1851 | 1835 | 2116 | 2100 | US | 882 | N621AU | 145 | 145 | 107 | 16 | 16 | BOS | CLT |
| 2006 | 1 | 11 | 3 | 947 | 955 | 1238 | 1215 | US | 1115 | N334US | 171 | 140 | 151 | 23 | -8 | BOS | CLT |
| 2006 | 1 | 11 | 3 | 1545 | 1550 | 1812 | 1814 | US | 1183 | N525AU | 147 | 144 | 126 | -2 | -5 | BOS | CLT |

Output:

| | | | |
|----|----|-----------|-----|
| 1 | AA | OGGtoDFW | 261 |
| 2 | AQ | LIHtoHNL | 146 |
| 3 | AS | SEAtoLAX | 104 |
| 4 | B6 | BOSToJFK | 56 |
| 5 | CO | AUStoIAH | 93 |
| 6 | DL | ATLtoCHS | 252 |
| 7 | EV | ATLtoCRW | 111 |
| 8 | F9 | DENtoSNA | 30 |
| 9 | FL | MLIttoATL | 67 |
| 10 | HA | HNLtoLIH | 45 |
| 11 | MQ | DFWtoXNA | 207 |
| 12 | NW | MSPtoORD | 138 |
| 13 | OH | RDUtoLGA | 153 |
| 14 | OO | DENtoMTJ | 165 |
| 15 | TZ | LAXtoOGG | 52 |
| 16 | UA | ORDtoPHL | 278 |
| 17 | US | BOSToPHL | 179 |
| 18 | WN | LAXtoOAK | 457 |
| 19 | XE | ACKtoEWR | 165 |
| 20 | YV | KOAttoHNL | 140 |



```
<terminated> MaxCancellationDriver [Java Application] /usr/lib/jvm/java-11-openjdk-amd64/bin/java (25 Apr 2019, 19:49:45)
2019-04-25 19:50:19,393 INFO [Thread-17] mapred.LocalJobRunner (LocalJobRunner.java:runTasks(456)) - reduce task executor complete.
2019-04-25 19:50:19,500 INFO [main] mapreduce.Job (Job.java:monitorAndPrintJob(1367)) - map 100% reduce 100%
2019-04-25 19:50:19,500 INFO [main] mapreduce.Job (Job.java:monitorAndPrintJob(1378)) - Job job_local791206361_0001 completed successfully
2019-04-25 19:50:19,572 INFO [main] mapreduce.Job (Job.java:monitorAndPrintJob(1385)) - Counters: 30

File System Counters
  FILE: Number of bytes read=7742789081
  FILE: Number of bytes written=26995080
  FILE: Number of read operations=0
  FILE: Number of large read operations=0
  FILE: Number of write operations=0

Map-Reduce Framework
  Map input records=7141923
  Map output records=121934
  Map output bytes=1463208
  Map output materialized bytes=1707196
  Input split bytes=2360
  Combine input records=0
  Combine output records=0
  Reduce input groups=20
  Reduce shuffle bytes=1707196
  Reduce input records=121934
  Reduce output records=20
  Spilled Records=243868
  Shuffled Maps =20
  Failed Shuffles=0
  Merged Map outputs=20
  GC time elapsed (ms)=1297
  Total committed heap usage (bytes)=4390928384

Shuffle Errors
  BAD_ID=0
  CONNECTION=0
  IO_ERROR=0
  WRONG_LENGTH=0
  WRONG_MAP=0
  WRONG_REDUCE=0

File Input Format Counters
  Bytes Read=672145920
File Output Format Counters
  Bytes Written=326
```

Java Files



MaxCancellationRedu
cer.java



MaxCancellationMap
per.java



MaxCancellationDrive
r.java



Maximum Cancellation output - Query1.zip