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HIVE

Question 1

1.

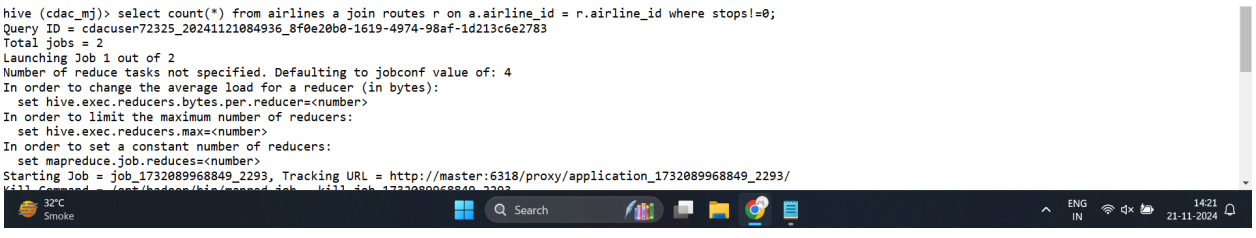
select a.name from airport a join routes r on r.src_airport_id=a.airport_id join routes on r.dest.airport_id=a.airport_id;

2.

select equipment from routes r join airline a on a.airline_id= r.airline_id where a.stops=max(stops)

3.

select count(*) from airline a join routes r on a.airline_id = r.airlie_id where stops!=0;



```
  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_1732089968849_2296, Tracking URL = http://master:6318/proxy/application_1732089968849_2296/
Kill Command = /opt/hadoop/bin/mapred job  -kill job_1732089968849_2296
Hadoop job information for Stage-2: number of mappers: 2; number of reducers: 1
2024-11-21 08:50:17,410 Stage-2 map = 0%,  reduce = 0%
2024-11-21 08:50:22,539 Stage-2 map = 50%,  reduce = 0%, Cumulative CPU 2.55 sec
2024-11-21 08:50:24,602 Stage-2 map = 100%,  reduce = 0%, Cumulative CPU 5.13 sec
2024-11-21 08:50:29,717 Stage-2 map = 100%,  reduce = 100%, Cumulative CPU 8.33 sec
MapReduce Total cumulative CPU time: 8 seconds 330 msec
Ended Job = job_1732089968849_2296
MapReduce Jobs Launched:
Stage-Stage-1: Map: 2  Reduce: 4   Cumulative CPU: 27.02 sec   HDFS Read: 2727222 HDFS Write: 456 SUCCESS
Stage-Stage-2: Map: 2  Reduce: 1   Cumulative CPU: 8.33 sec   HDFS Read: 11122 HDFS Write: 102 SUCCESS
Total MapReduce CPU Time Spent: 35 seconds 350 msec
OK
11
Time taken: 55.374 seconds, Fetched: 1 row(s)
hive (cdac_mj)>
             >
             >
             >
             >
             >
             >
             >
```

Question 2

1.
create table source_id (airline string , airline_id int, src_airport_id int , dest_airport_iata String ,dest_airport_id int , codeshare string , stops int equipment string) partitioned by (src_airport_iata string)

```
hive (cdac_mj)> create table source_id (airline string , airline_id int, src_airport_id int , dest_airport_iata String ,dest_airport_id int , codeshare string , stops i
nt, equipment string) partitioned by (src_airport_iata string);
OK
Time taken: 0.154 seconds
hive (cdac_mj)> set hive.exec.dynamic.partition.mode=nonstrict;
hive (cdac_mj)>
             > set hive.exec.dynamic.partition=true;
hive (cdac_mj)> insert into table source_id  partitioned(src_airport_iata) airline , airline_id ,src_airport_iata, src_airport_id, dest_airport_iata, dest_airport_id ,
codeshaer, stops , equipment from routes;
NoViableAltException(225@[])
        at org.apache.hadoop.hive.ql.parse.HiveParser.regularBody(HiveParser.java:39572)
        at org.apache.hadoop.hive.ql.parse.HiveParser.queryStatementExpressionBody(HiveParser.java:38900)
        at org.apache.hadoop.hive.ql.parse.HiveParser.queryStatementExpression(HiveParser.java:38788)
        at org.apache.hadoop.hive.ql.parse.HiveParser.execStatement(HiveParser.java:2396)
        at org.apache.hadoop.hive.ql.parse.HiveParser.statement(HiveParser.java:1420)
        at org.apache.hadoop.hive.ql.parse.ParseDriver.parse(ParseDriver.java:220)
        at org.apache.hadoop.hive.ql.parse.ParseUtils.parse(ParseUtils.java:74)
        at org.apache.hadoop.hive.ql.parse.ParseUtils.parse(ParseUtils.java:67)
        at org.apache.hadoop.hive.ql.Driver.compile(Driver.java:616)
        at org.apache.hadoop.hive.ql.Driver.compileInternal(Driver.java:1826)
        at org.apache.hadoop.hive.ql.Driver.compileAndRespond(Driver.java:1773)
```


```
insert into table source_id select * from routes;
```

2.
`insert into table source_id partitioned(src_airport_iata)` (airline , airline_id, src_airport_id , dest_airport_iata ,dest_airport_id , codeshare , stops, equipment) from routes where `src_airport_iata='JFK';`

3.

insert into table source_id partitioned(src_airport_iata)(airline , airline_id, src_airport_id , dest_airport_iata ,dest_airport_id , codeshare , stops, equipment) from routes where src_airport_iata='LAX';

4.

source_id.getPartitionis()

Spark

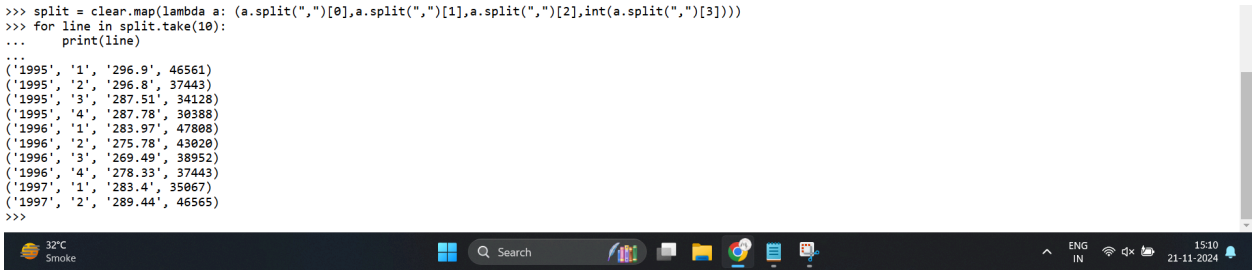
```
data=sc.textFile("/user/cdacuser72325/airlines1.csv")

data.count()

header =data.first()

clear = data.filter(lambda a : a!=header)

for line in clear.take(10):
        print(line)
```

Question 1:

1.

2.

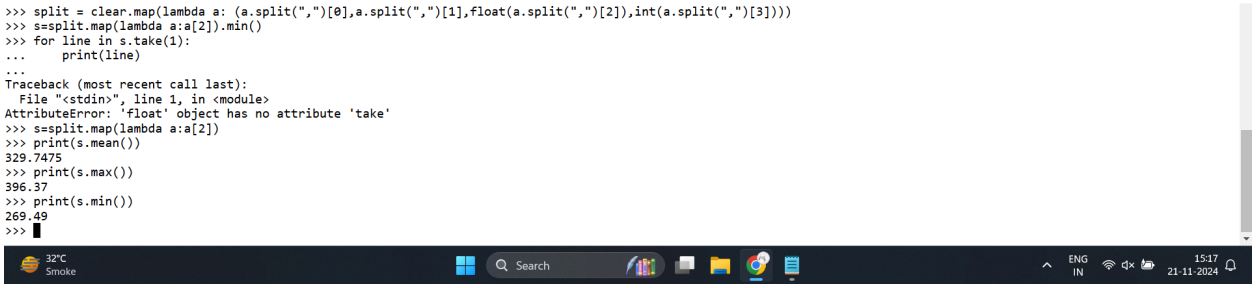
```
split = clear.map(lambda a:
(a.split(",")[0],a.split(",")[1],a.split(",")[2],int(a.split(",")[3])
))
>>> for line in split.take(10):
...     print(line)
```



Question 2

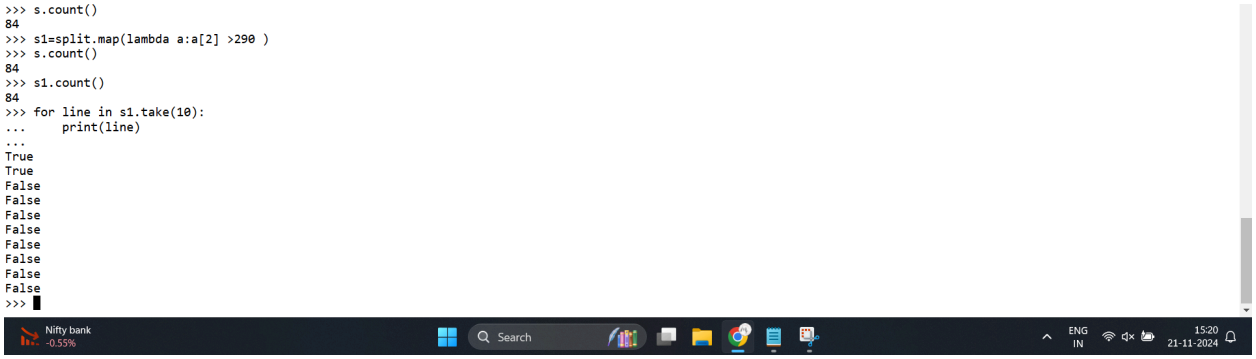
1.

```
s=split.map(lambda a:a[2])
>>> print(s.mean())
329.7475
>>> print(s.max())
396.37
>>> print(s.min())
269.49
```



2.

```
>>> s1=split.map(lambda a:a[2] >290 )
>>> s.count()
84
>>> s1.count()
84
```



3.

```
>>> split = clear.map(lambda a:
(a.split(",")[0],int(a.split(",")[3])))
>>> for line in split.take(10):
```

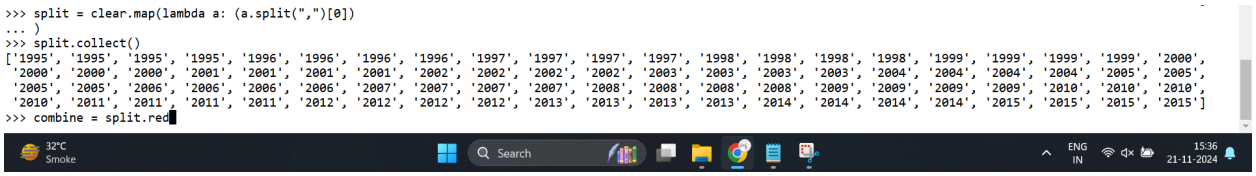
```
...     print(line)
...
('1995', 46561)
('1995', 37443)
('1995', 34128)
('1995', 30388)
('1996', 47808)
('1996', 43020)
>>> for line in reduce.collect():
...     print(line)
...
('1995', 148520)
('2002', 152195)
('2003', 156153)
('2004', 164800)
('2007', 176299)
('2010', 163741)
('2011', 142647)
('2012', 166076)
('2013', 173676)
('2014', 159823)
('2015', 165438)
('1996', 167223)
('1997', 157972)
('1998', 135678)
('1999', 150000)
('2000', 154376)
('2001', 173598)
('2005', 150610)
```

```
>>> split = clear.map(lambda a: (a.split(",")[0],int(a.split(",")[3])))
>>> for line in split.take(10):
...     print(line)
...
('1995', 46561)
('1995', 37443)
('1995', 34128)
('1995', 30388)
('1996', 47808)
('1996', 43020)
('1996', 38952)
('1996', 37443)
('1997', 35067)
('1997', 46565)
>>> reduce = split.reduceByKey(lambda a,b a+b)
  File "<stdin>", line 1
    reduce = split.reduceByKey(lambda a,b a+b)
                                         ^
SyntaxError: invalid syntax
>>> reduce = split.reduceByKey(lambda a,b: a+b)
>>> for line in reduce.take(10):
...     print(line)
...
('1995', 148520)
('2002', 152195)
('2003', 156153)
('2004', 164800)
('2007', 176299)
('2010', 163741)
('2011', 142647)
('2012', 166076)
('2013', 173676)
('2014', 159823)
```



```
>>> for line in reduce.collect():
...     print(line)
...
('1995', 148520)
('2002', 152195)
('2003', 156153)
('2004', 164800)
('2007', 176299)
('2010', 163741)
('2011', 142647)
('2012', 166076)
('2013', 173676)
('2014', 159823)
('2015', 165438)
('1996', 167223)
('1997', 157972)
('1998', 135678)
('1999', 150000)
('2000', 154376)
('2001', 173598)
('2005', 150610)
('2006', 153789)
('2008', 166897)
('2009', 150308)
>>>
```

4.




```
reduce =split.reduceBykey(lambda a,b :a+b)

for line in reduce.collect():
      print(line)
```

Output :

1995
1996
1997
1998
1999
.....
2014

5.

```
split =clear.map(lambda a:
a.split(“,”)[0],float(a.split(“,”)[2]),int(a.split(“,”)[3]))

Revenue =split.map(lambda x: x[2] * x[3])

reduce =revenue.reduceByKey(lambda a,b : a+b)


For line in reduce.collect():
      print(line)
```