BIG DATA EXAM

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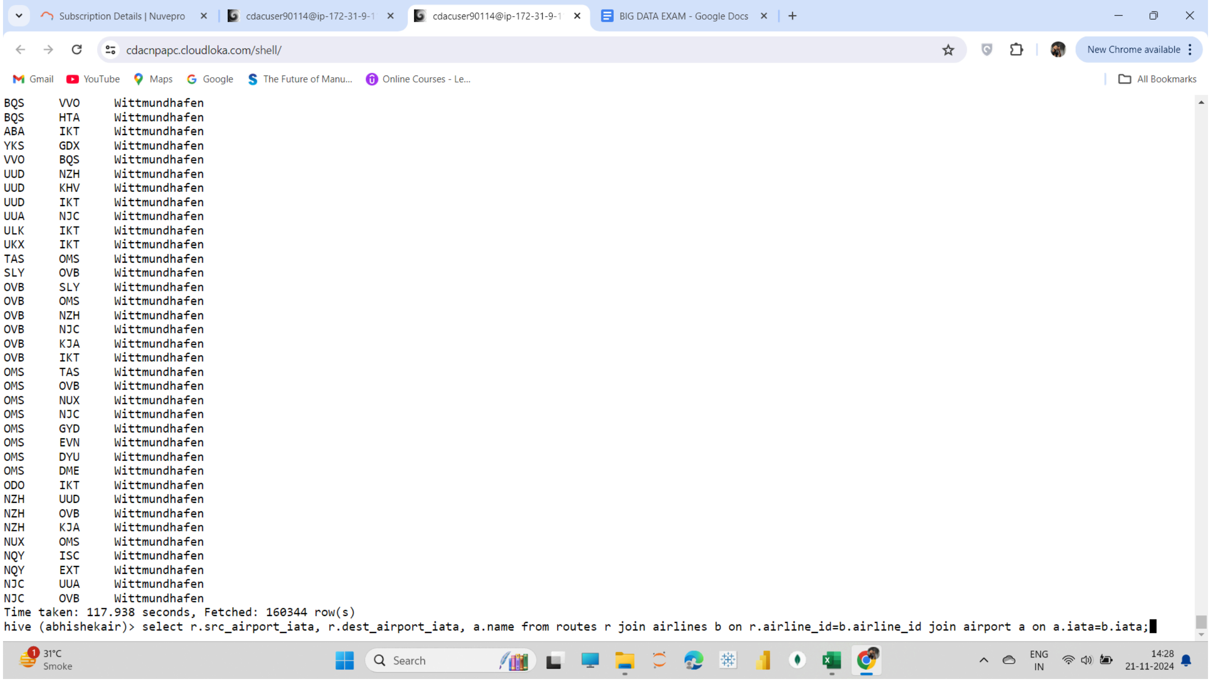
Roll No : 03

#HIVE
Question 1:

```
1.select r.src_airport_iata, r.dest_airport_iata, a.name from
routes r join airlines b on r.airline_id=b.airline_id join airport
a on a.iata=b.iata;
```



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```
BQS     VVO     Wittmundhafen
BQS     HTA     Wittmundhafen
ABA     IKT     Wittmundhafen
YKS     GDX     Wittmundhafen
VVO     BQS     Wittmundhafen
UUD     NZH     Wittmundhafen
UUD     KHV     Wittmundhafen
UUD     IKT     Wittmundhafen
UUA     NJC     Wittmundhafen
ULK     IKT     Wittmundhafen
UKX     IKT     Wittmundhafen
TAS     OMS     Wittmundhafen
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OMS     GYD     Wittmundhafen
OMS     EVN     Wittmundhafen
OMS     DYU     Wittmundhafen
OMS     DME     Wittmundhafen
ODO     IKT     Wittmundhafen
NZH     UUD     Wittmundhafen
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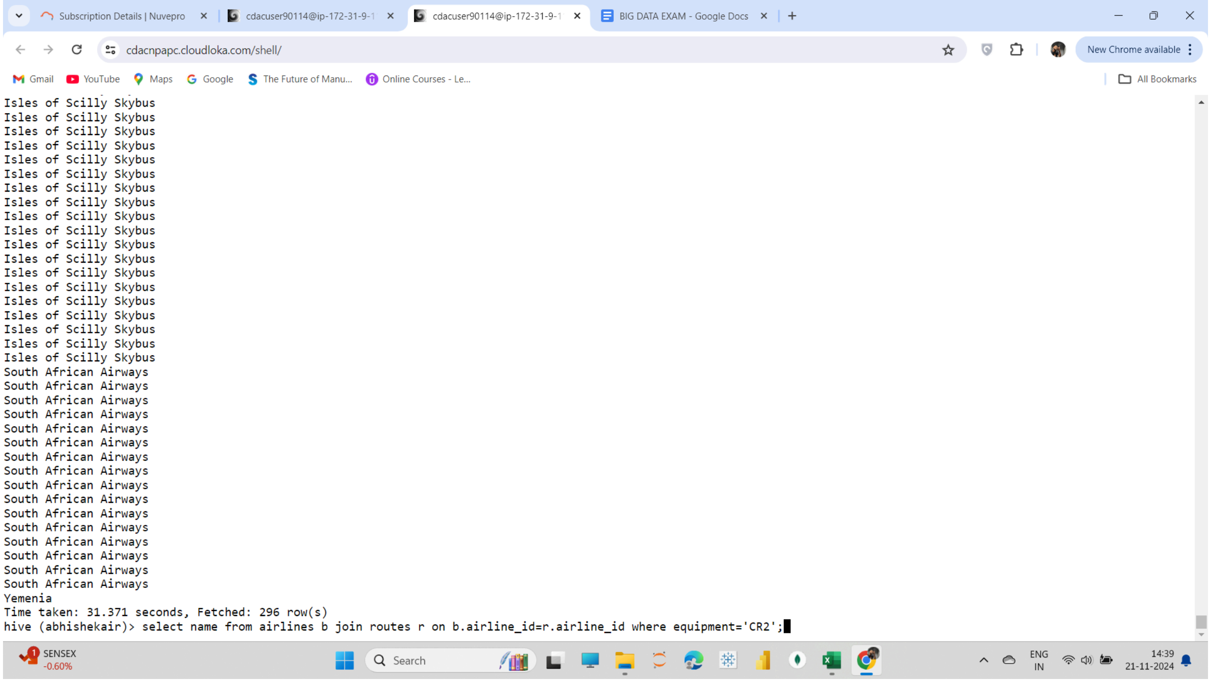
NUX     OMS     Wittmundhafen
NQY     ISC     Wittmundhafen
NQY     EXT     Wittmundhafen
NJC     UUA     Wittmundhafen
NJC     OVB     Wittmundhafen
Time taken: 117.938 seconds, Fetched: 160344 row(s)
hive (abhishekair)> select r.src_airport_iata, r.dest_airport_iata, a.name from routes r join airlines b on r.airline_id=b.airline_id join airport a on a.iata=b.iata;
```

```
2.select name from airlines b join routes r on
b.airline_id=r.airline_id where equipment='CR2';
```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South African Airways
South African Airways
South African Airways
South African Airways
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South African Airways
Yemenia
Time taken: 31.371 seconds, Fetched: 296 row(s)
hive (abhishekair)> select name from airlines b join routes r on b.airline_id=r.airline_id where equipment='CR2';
```

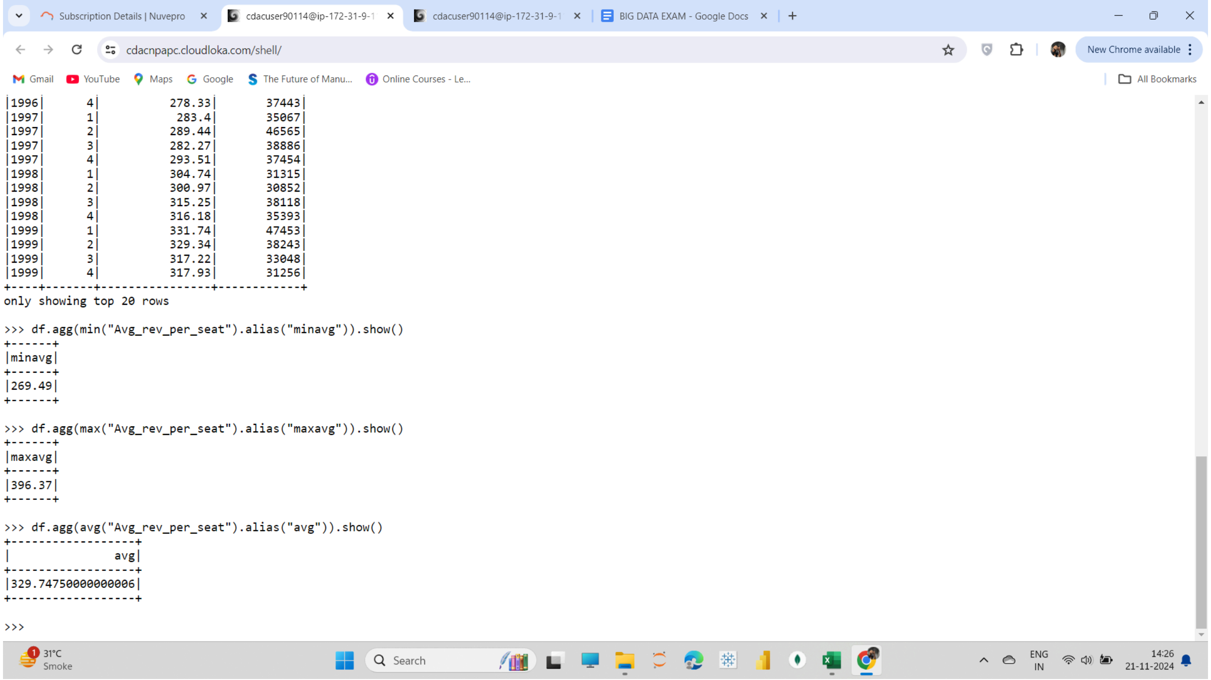
#SPARK

Question 2:

1.df.agg(min("Avg_rev_per_seat").alias("minavg")).show()

df.agg(max("Avg_rev_per_seat").alias("maxavg")).show()

df.agg(avg("Avg_rev_per_seat").alias("avg")).show()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```
|1996|      4|          278.33|       37443|
|1997|      1|           283.4|       35067|
|1997|      2|          289.44|       46565|
|1997|      3|          282.27|       38886|
|1997|      4|          293.51|       37454|
|1998|      1|          304.74|       31315|
|1998|      2|          300.97|       30852|
|1998|      3|          315.25|       38118|
|1998|      4|          316.18|       35393|
|1999|      1|          331.74|       47453|
|1999|      2|          329.34|       38243|
|1999|      3|          317.22|       33048|
|1999|      4|          317.93|       31256|
+----+-------+----------------+------------+
only showing top 20 rows

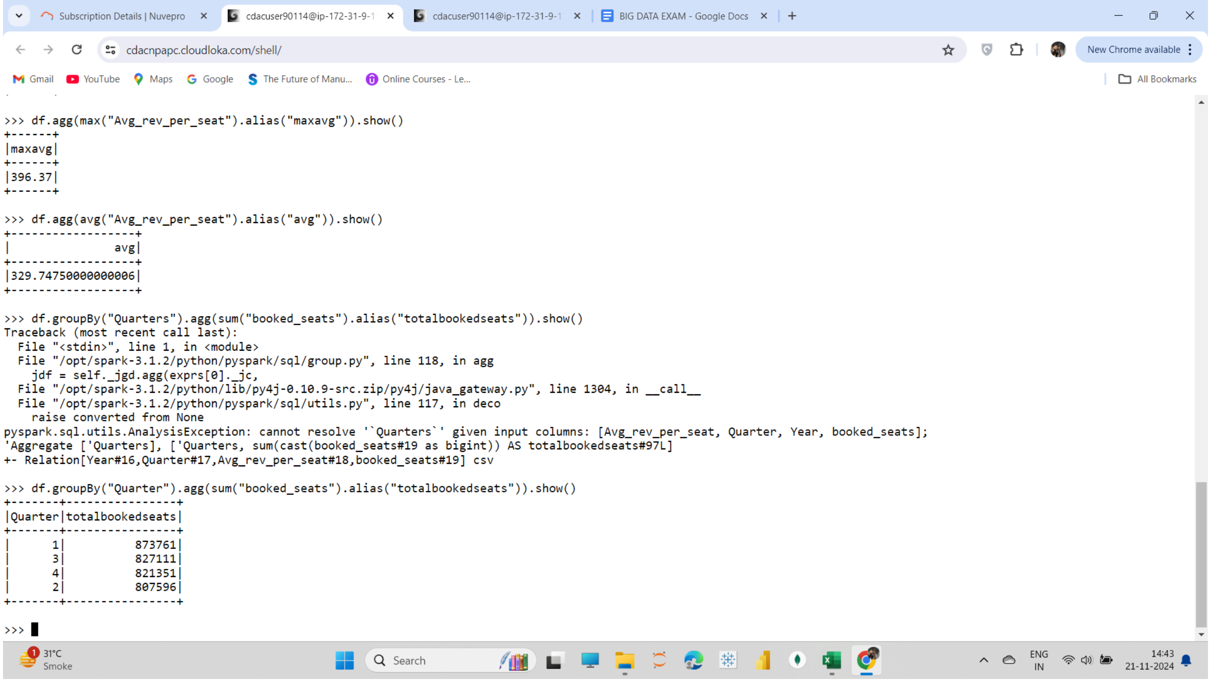
>>> df.agg(min("Avg_rev_per_seat").alias("minavg")).show()
+------+
|minavg|
+------+
|269.49|
+------+

>>> df.agg(max("Avg_rev_per_seat").alias("maxavg")).show()
+------+
|maxavg|
+------+
|396.37|
+------+

>>> df.agg(avg("Avg_rev_per_seat").alias("avg")).show()
+------------------+
|               avg|
+------------------+
|329.74750000000006|
+------------------+

>>>
```

3.df.groupBy("Quarter").agg(sum("booked_seats").alias("totalbooked seats")).show()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```
>>> df.agg(max("Avg_rev_per_seat").alias("maxavg")).show()
+------+
|maxavg|
+------+
|396.37|
+------+

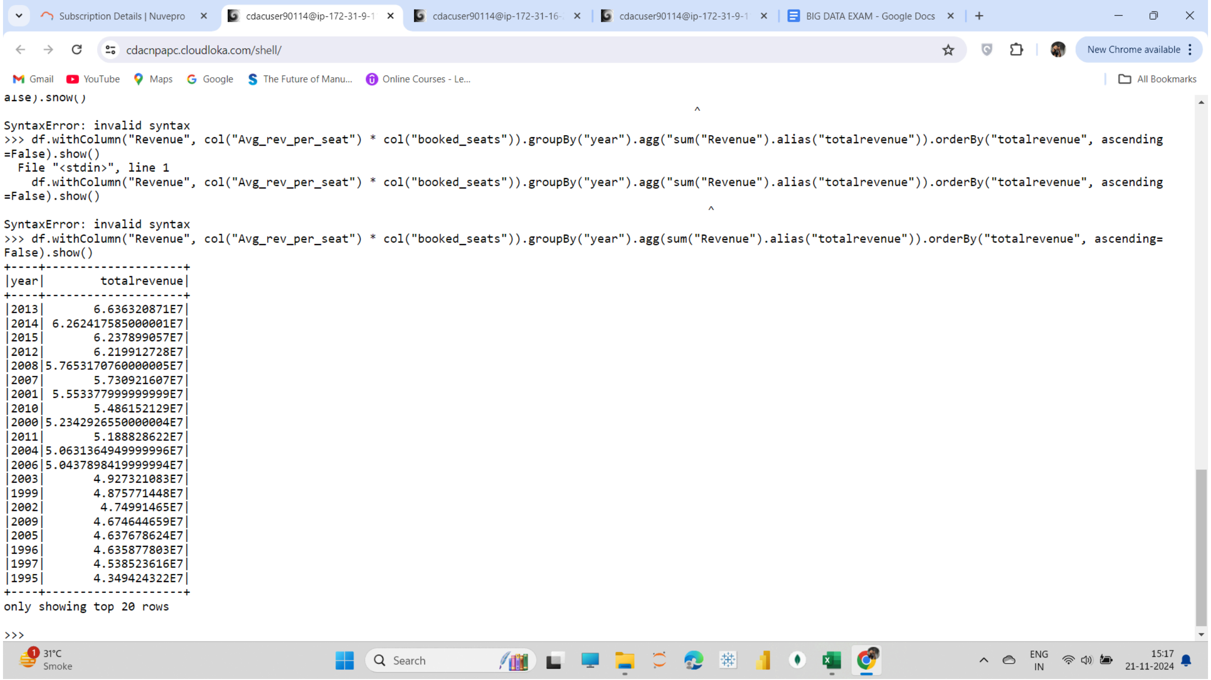
>>> df.agg(avg("Avg_rev_per_seat").alias("avg")).show()
+-----------------+
|              avg|
+-----------------+
|329.74750000000006|
+-----------------+

>>> df.groupBy("Quarters").agg(sum("booked_seats").alias("totalbookedseats")).show()
Traceback (most recent call last):
  File "<stdin>", line 1, in <module>
  File "/opt/spark-3.1.2/python/pyspark/sql/group.py", line 118, in agg
    jdf = self._jgd.agg(exprs[0]._jc,
  File "/opt/spark-3.1.2/python/lib/py4j-0.10.9-src.zip/py4j/java_gateway.py", line 1304, in __call__
  File "/opt/spark-3.1.2/python/pyspark/sql/utils.py", line 117, in deco
    raise converted from None
pyspark.sql.utils.AnalysisException: cannot resolve '`Quarters`' given input columns: [Avg_rev_per_seat, Quarter, Year, booked_seats];
'Aggregate ['Quarters], ['Quarters, sum(cast(booked_seats#19 as bigint)) AS totalbookedseats#97L]
+- Relation[Year#16,Quarter#17,Avg_rev_per_seat#18,booked_seats#19] csv

>>> df.groupBy("Quarter").agg(sum("booked_seats").alias("totalbookedseats")).show()
+-------+----------------+
|Quarter|totalbookedseats|
+-------+----------------+
|      1|          873761|
|      3|          827111|
|      4|          821351|
|      2|          807596|
+-------+----------------+

>>> █
```

5.df.withColumn("Revenue", col("Avg_rev_per_seat") * col("booked_seats")).groupBy("year").agg(sum("Revenue").alias("totalrevenue")).orderBy("totalrevenue", ascending= False).show()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```
alse).show()
                                                                                                     ^
SyntaxError: invalid syntax
>>> df.withColumn("Revenue", col("Avg_rev_per_seat") * col("booked_seats")).groupBy("year").agg("sum("Revenue").alias("totalrevenue")).orderBy("totalrevenue", ascending
=False).show()
  File "<stdin>", line 1
    df.withColumn("Revenue", col("Avg_rev_per_seat") * col("booked_seats")).groupBy("year").agg("sum("Revenue").alias("totalrevenue")).orderBy("totalrevenue", ascending
=False).show()
                                                                                                       ^
SyntaxError: invalid syntax
>>> df.withColumn("Revenue", col("Avg_rev_per_seat") * col("booked_seats")).groupBy("year").agg(sum("Revenue").alias("totalrevenue")).orderBy("totalrevenue", ascending=
False).show()
+----+-------------------+
|year|       totalrevenue|
+----+-------------------+
|2013|       6.636320871E7|
|2014| 6.262417585000001E7|
|2015|       6.237899057E7|
|2012|       6.219912728E7|
|2008|5.7653170760000005E7|
|2007|       5.730921607E7|
|2001| 5.553377999999999E7|
|2010|       5.486152129E7|
|2000|5.2342926550000004E7|
|2011|       5.188828622E7|
|2004|5.0631364949999996E7|
|2006|5.0437898419999994E7|
|2003|       4.927321083E7|
|1999|       4.875771448E7|
|2002|        4.74991465E7|
|2009|       4.674644659E7|
|2005|       4.637678624E7|
|1996|       4.635877803E7|
|1997|       4.538523616E7|
|1995|       4.349424322E7|
+----+-------------------+
only showing top 20 rows

>>>
```

#Question 2(HIVE).

3. Select * from partitioned_routes where trim(upper(src_airport)=”LAX” limit 10);

2. Insert overwrite table partition (src_airport) select r.airline, r.src_airport, r.dest_airport where r.drc_airport=”JFK”;

1. Create table partition

#(SPARK)Question 2:

4.

```
rdd.map(lambda a:a[0].distinct)
```