Solving analytical queries on Redshift Cluster

Here, you have to write the query used for solving the question and the screenshots of the table which is outputted after the query is run on the AWS Redshift Query editor UI.

1. **Top 10 ATMs where most transactions are in the 'inactive' state**

<Query>

```
select top 10 a.atm_number,a.atm_manufacturer,l.location,count(trans_id) as
total_transaction_count,count(trans_id) as inactive_count
from atmTransData.dim_atm a join
atmTransData.dim_location l on l.location_id=a.atm_location_id
join atmTransData.fact_atm_trans f on a.atm_id=f.atm_id
where atm_status='Inactive' group by a.atm_number,a.atm_manufacturer,l.location order by
inactive_count desc;
```

<Screenshot of the resultant table>

Query 785

Execution | Data | Visualize

Completed, started on August 02, 2022 at 16:44:20
ELAPSED TIME: 00 m 07 s

Rows returned (10)

Export

Search rows

1

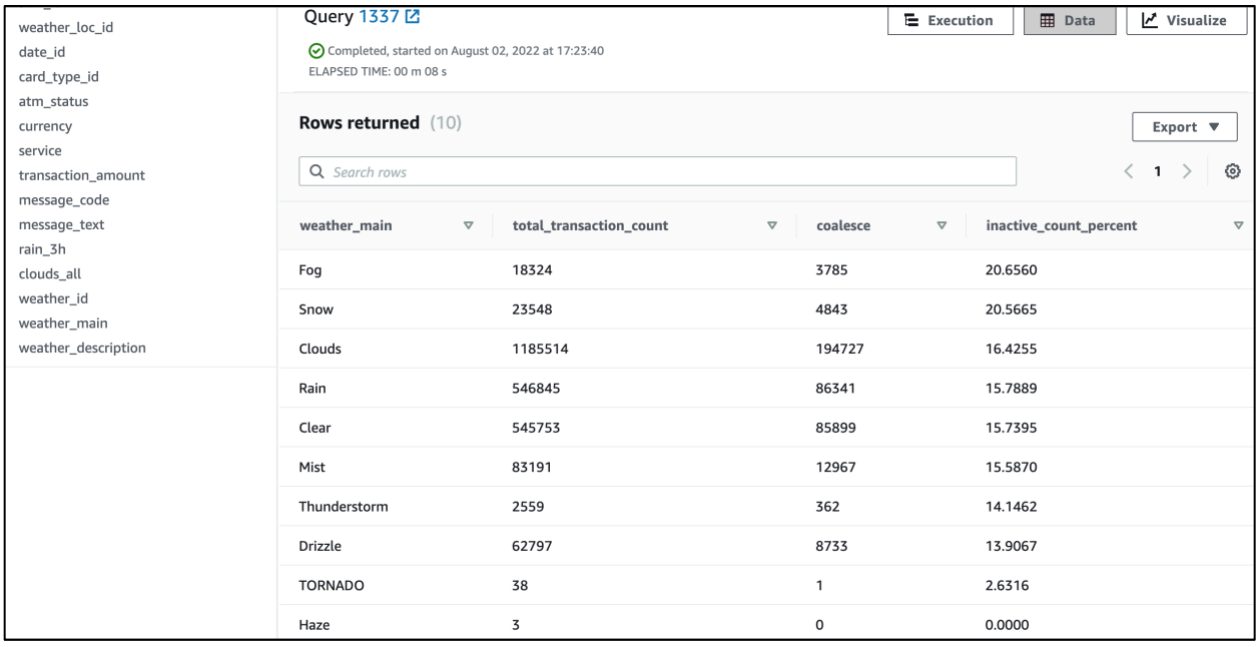
atm_number	atm_manufacturer	location	total_transaction_count	inactive_count
16	NCR	Skive	44043	44043
12	NCR	ÃƒËœsterÃƒÂ¥ Duus	33982	33982
2	NCR	Vejgaard	33725	33725
88	NCR	Storcenter indg. A	32183	32183
30	NCR	NykÃƒÂ¸bing Mors	30883	30883
52	NCR	FarsÃƒÂ¸	27361	27361
50	NCR	Aarhus	23416	23416
29	NCR	Skelagervej 15	20773	20773
81	NCR	Spar KÃƒÂ¸bmand TornhÃƒÂ¸j	20148	20148
102	NCR	Aalborg Storcenter Afd	18297	18297

2. **Number of ATM failures corresponding to the different weather conditions recorded at the time of the transactions**

<Query>

```
select F.weather_main,count(F.trans_id) as total_transaction_count,nvl(inactive_count,0) ,
nvl(round(((inactive_count*100.0)/total_transaction_count),4),0) as inactive_count_percent from
atmtransdata.fact_atm_trans F
left outer join (select count(trans_id) as inactive_count,weather_main from
atmtransdata.fact_atm_trans where atm_status='Inactive' group by weather_main)I
on I.weather_main=F.weather_main
group by F.weather_main,inactive_count order by inactive_count_percent desc;
```

<Screenshot of the resultant table>



3. **Top 10 ATMs with the most number of transactions throughout the year**

<Query>

```
select top 10 atm_number,atm_manufacturer,location,count(trans_id) as
total_transaction_count
from atmtransdata.dim_atm a join atmtransdata.fact_atm_trans f on a.atm_id=f.atm_id
join atmtransdata.dim_location l on a.atm_location_id=l.location_id
group by atm_number,atm_manufacturer,location order by total_transaction_count desc;
```

<Screenshot of the resultant table>

Query 1876

Execution | Data | Visualize

Completed, started on August 02, 2022 at 18:14:32
ELAPSED TIME: 00 m 02 s

Rows returned (10)

Export

Search rows

1

atm_number	atm_manufacturer	location	total_transaction_count
39	NCR	Svenstrup	55380
20	NCR	Bispensgade	54211
10	NCR	NÃƒÂ¸rresundby	53794
24	NCR	Hobro	53378
45	NCR	Abildgaard	53198
16	NCR	Skive	44043
40	Diebold Nixdorf	Frederikshavn	43767
1	NCR	NÃƒÂ¦stved	42787
41	Diebold Nixdorf	Skagen	42732
48	Diebold Nixdorf	BrÃƒÂ¸nderslev	42493

4. **Number of overall ATM transactions going inactive per month for each month**

<Query>

```
select D.year,D.month, count(F.trans_id) as total_transaction_count,nvl(inactive_count,0) ,
nvl(round(((inactive_count*100.0)/total_transaction_count),4),0) as inactive_count_percent from
atmtransdata.dim_date D join
atmtransdata.fact_atm_trans F on F.date_id=D.date_id join
(select count(trans_id) as inactive_count,month from atmtransdata.fact_atm_trans f
 join atmtransdata.dim_date d on d.date_id=f.date_id where atm_status='Inactive' group by
month)I
 on I.month=D.month
group by D.month,D.year,inactive_count order by D.month;
```

<Screenshot of the resultant table>

Rows returned (12)

Export

Search rows

1 2

year	month	total_transaction_count	coalesce	inactive_count_percent
2017	April	218865	41830	19.1122
2017	August	217218	36713	16.9015
2017	December	197048	20476	10.3914
2017	February	182659	36656	20.0680
2017	January	180195	35953	19.9523
2017	July	227682	38139	16.7510
2017	June	225166	36789	16.3386
2017	March	209586	41046	19.5843
2017	May	222418	37679	16.9406
2017	November	193967	21684	11.1792

5. **Top 10 ATMs with the highest total withdrawn amount throughout the year**

<Query>

```
select top 10 a.atm_number,a.atm_manufacturer,l.location,sum(transaction_amount) as
total_transaction_amount
from atmTransData.dim_atm a join
atmTransData.dim_location l on l.location_id=a.atm_location_id
join atmTransData.fact_atm_trans f on a.atm_id=f.atm_id
group by a.atm_number,a.atm_manufacturer,l.location order by total_transaction_amount desc;
```

<Screenshot of the resultant table>

Query 3569

Execution | Data | Visualize

Completed, started on August 02, 2022 at 21:00:46
ELAPSED TIME: 00 m 08 s

Rows returned (10)

Export

Search rows

1

atm_number	atm_manufacturer	location	total_transaction_amount
39	NCR	Svenstrup	277097637
20	NCR	Bispensgade	271008803
24	NCR	Hobro	268289882
10	NCR	NÃƒÂ¸rresundby	267379103
45	NCR	Abildgaard	265639616
16	NCR	Skive	220677013
40	Diebold Nixdorf	Frederikshavn	219812287
41	Diebold Nixdorf	Skagen	214127315
1	NCR	NÃƒÂ¦stved	213721117
48	Diebold Nixdorf	BrÃƒÂ¸nderslev	212883099

6. Number of failed ATM transactions across various card types

<Query>

```
select C.card_type, count(F.trans_id) as total_transaction_count,nvl(inactive_count,0) ,
nvl(round(((inactive_count*100.0)/total_transaction_count),4),0) as inactive_count_percent from
atmtransdata.dim_card_type C join
atmtransdata.fact_atm_trans F on F.card_type_id=C.card_type_id join
(select count(trans_id) as inactive_count,card_type from atmtransdata.fact_atm_trans f
 join atmtransdata.dim_card_type c on c.card_type_id=f.card_type_id where
atm_status='Inactive' group by card_type)I
 on I.card_type=C.card_type
group by C.card_type,inactive_count order by inactive_count_percent desc;
```

<Screenshot of the resultant table>

Rows returned (12)

Export

Search rows

1

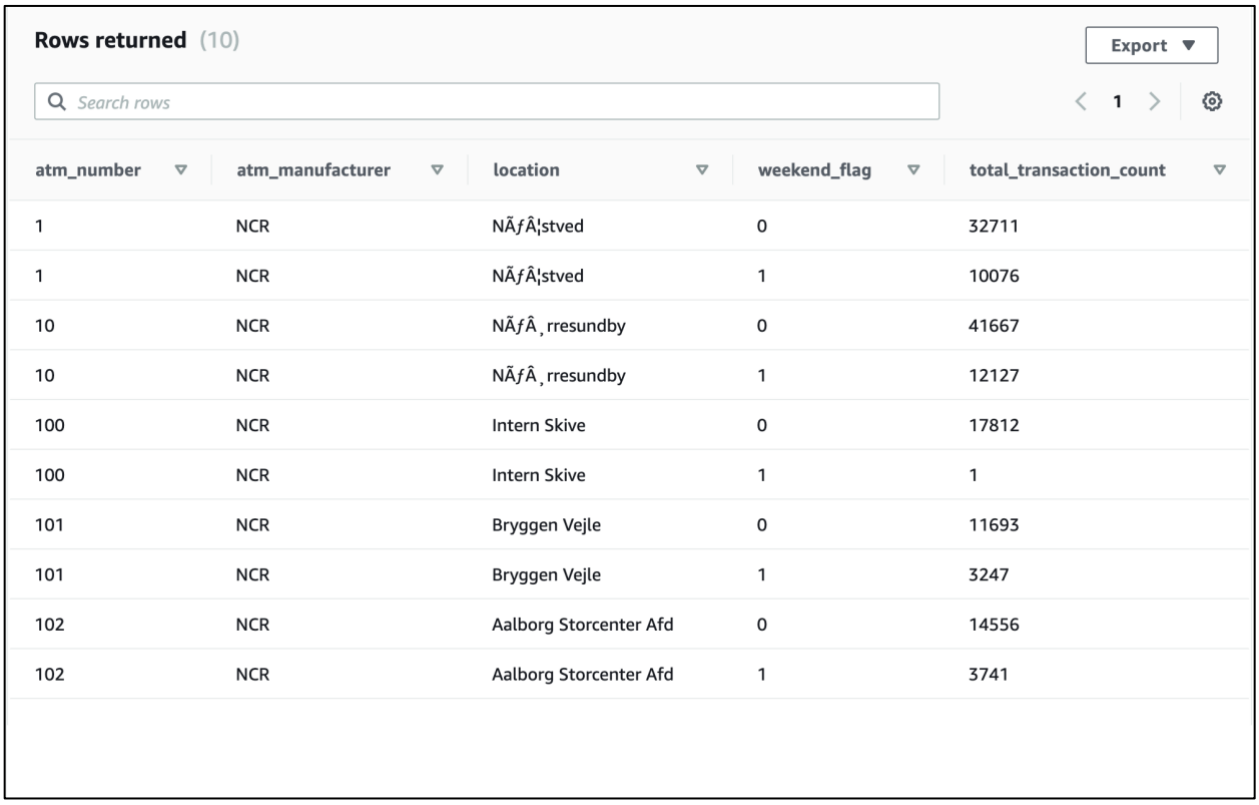
card_type	total_transaction_count	coalesce	inactive_count_percent
Mastercard - on-us	458226	86000	18.7680
VISA	170828	30713	17.9789
Dankort - on-us	143813	24680	17.1612
CIRRUS	17362	2953	17.0084
HÃƒÂ¦vekort - on-us	62487	10331	16.5330
Dankort	28581	4557	15.9442
MasterCard	400507	63482	15.8504
Visa Dankort - on-us	748805	112972	15.0870
HÃƒÂ¦vekort	8459	1208	14.2806
Visa Dankort	427840	60547	14.1518
VisaPlus	1134	150	13.2275
Maestro	530	65	12.2642

7. **Number of transactions happening on an ATM on weekdays and on weekends throughout the year. Order this by the ATM_number, ATM_manufacturer, location, weekend_flag and then total_transaction_count**

<Query>

```
select top 10 A.atm_number,A.atm_manufacturer,L.location,W.weekend_flag,count(trans_id) as
total_transaction_count
from atmtransdata.fact_atm_trans F join
(select date_id,
case when weekday in ('Sunday','Saturday') then '1'
else '0'
end as weekend_flag from atmtransdata.dim_date) W on W.date_id=F.date_id
join atmtransdata.dim_atm A on F.atm_id=A.atm_id
join atmtransdata.dim_location L on A.atm_location_id=L.location_id
group by A.atm_number,A.atm_manufacturer,L.location,W.weekend_flag
order by A.atm_number,W.weekend_flag;
```

<Screenshot of the resultant table>



Rows returned (10)

Export

Search rows

1

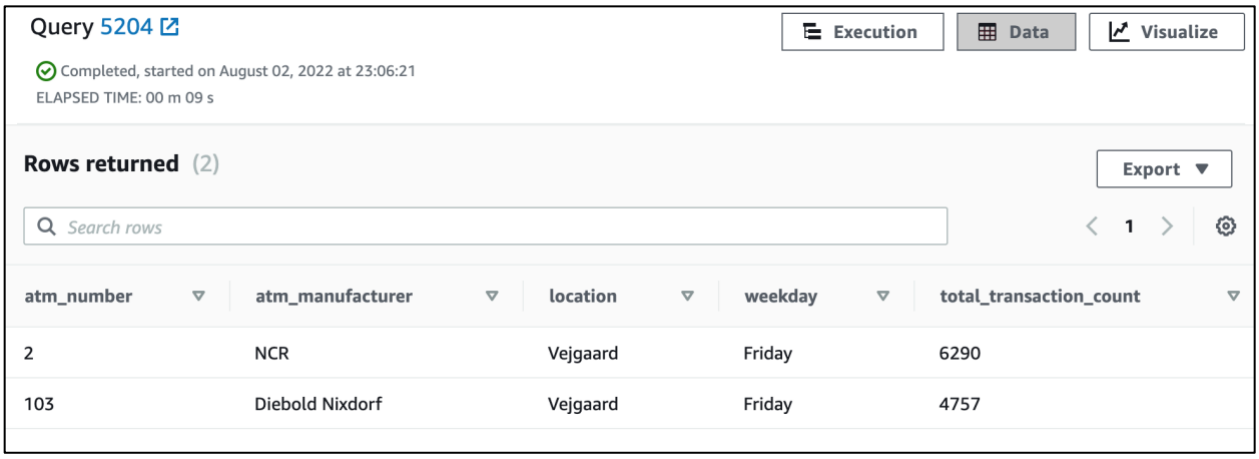
atm_number	atm_manufacturer	location	weekend_flag	total_transaction_count
1	NCR	NÃƒÂ¦stved	0	32711
1	NCR	NÃƒÂ¦stved	1	10076
10	NCR	NÃƒÂ¸rresundby	0	41667
10	NCR	NÃƒÂ¸rresundby	1	12127
100	NCR	Intern Skive	0	17812
100	NCR	Intern Skive	1	1
101	NCR	Bryggen Vejle	0	11693
101	NCR	Bryggen Vejle	1	3247
102	NCR	Aalborg Storcenter Afd	0	14556
102	NCR	Aalborg Storcenter Afd	1	3741

8. **Most active day in each ATMs from location "Vejgaard"**

<Query>

```
select F.atm_number,F.atm_manufacturer,F.location ,min(F.weekday)as weekday
,max(transaction_count) as total_transaction_count from
(select A.atm_number,A.atm_manufacturer,count(F.trans_id) as
transaction_count,weekday,L.location
 from atmtransdata.fact_atm_trans F
join atmtransdata.dim_date D on D.date_id=F.date_id
join atmtransdata.dim_location L on F.weather_loc_id=L.location_id
join atmtransdata.dim_atm A on A.atm_id=F.atm_id
where L.location='Vejgaard' group by A.atm_number,atm_manufacturer,location,weekday order
by transaction_count desc) F
group by F.atm_number,F.atm_manufacturer,F.location;
```

<Screenshot of the resultant table>



atm_number	atm_manufacturer	location	weekday	total_transaction_count
2	NCR	Vejgaard	Friday	6290
103	Diebold Nixdorf	Vejgaard	Friday	4757