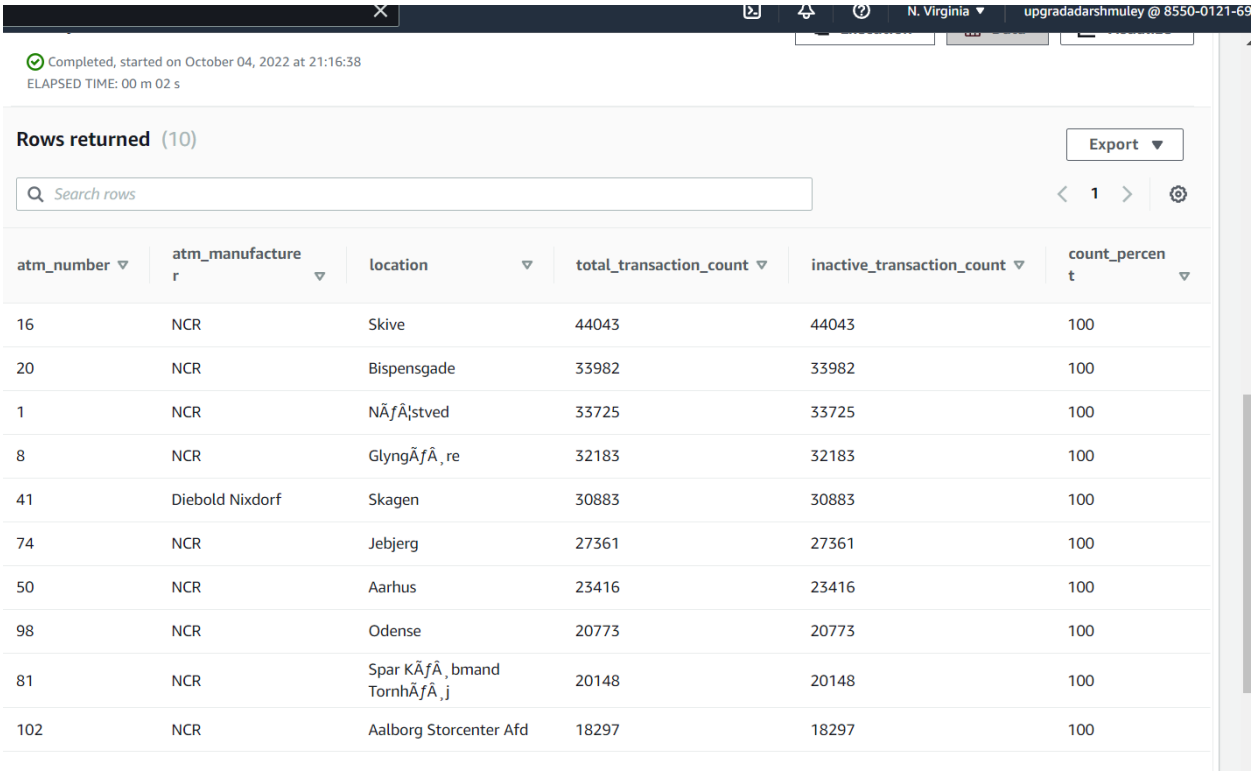
Solving analytical queries on Redshift Cluster

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

```
select a.atm_number, a.atm_manufacturer, l.location, count(trans_id) as
total_transaction_count,
sum(case when atm_status = 'Inactive' then 1 else 0 end) as inactive_transaction_count,
(inactive_transaction_count/total_transaction_count)*100 as count_percent from
atm_data.fact_atm_trans f, atm_data.dim_atm a, atm_data.dim_location l where f.atm_id =
a.atm_id and a.atm_location_id = l.location_id
group by a.atm_number, a.atm_manufacturer, l.location having count_percent > 50
order by inactive_transaction_count desc limit 10;
```



Completed, started on October 04, 2022 at 21:16:38
ELAPSED TIME: 00 m 02 s

Rows returned (10)

Export

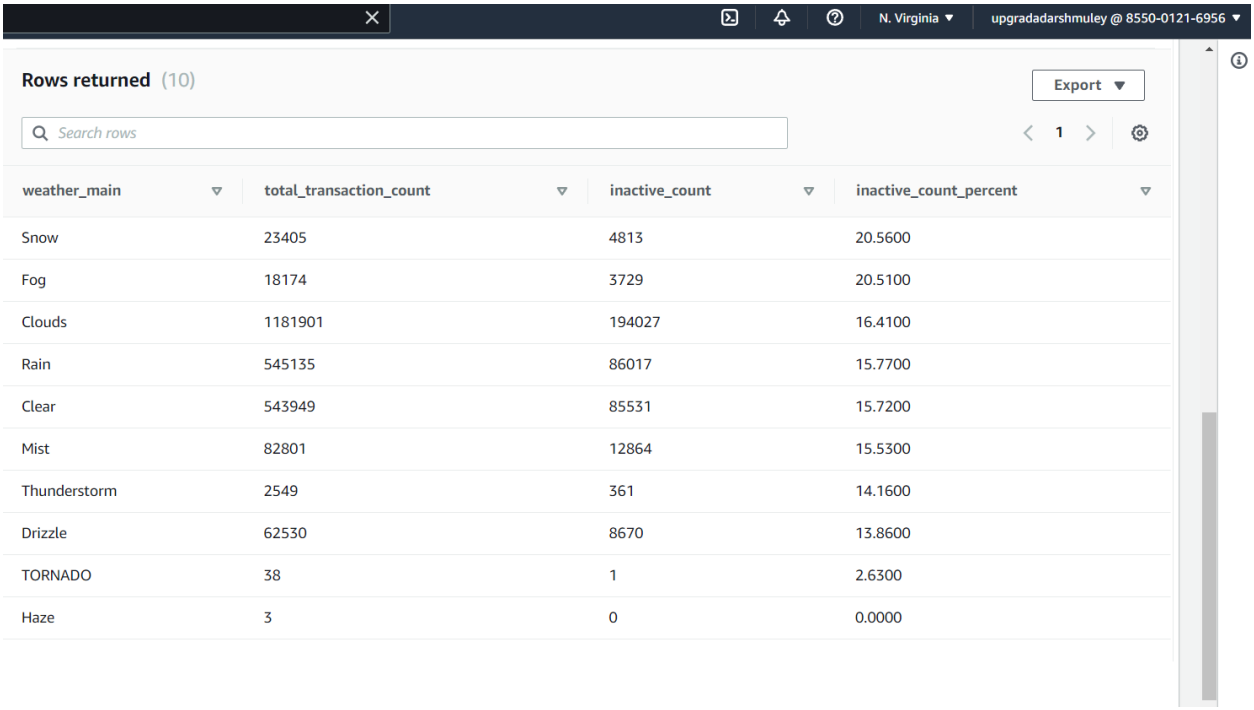
Search rows

1

atm_number	atm_manufacturer	location	total_transaction_count	inactive_transaction_count	count_percent
16	NCR	Skive	44043	44043	100
20	NCR	Bispensgade	33982	33982	100
1	NCR	NÃƒÂ¦stved	33725	33725	100
8	NCR	GlyngÃƒÂ¸re	32183	32183	100
41	Diebold Nixdorf	Skagen	30883	30883	100
74	NCR	Jebjerg	27361	27361	100
50	NCR	Aarhus	23416	23416	100
98	NCR	Odense	20773	20773	100
81	NCR	Spar KÃƒÂ¸bmand TornhÃƒÂ¸j	20148	20148	100
102	NCR	Aalborg Storcenter Afd	18297	18297	100

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

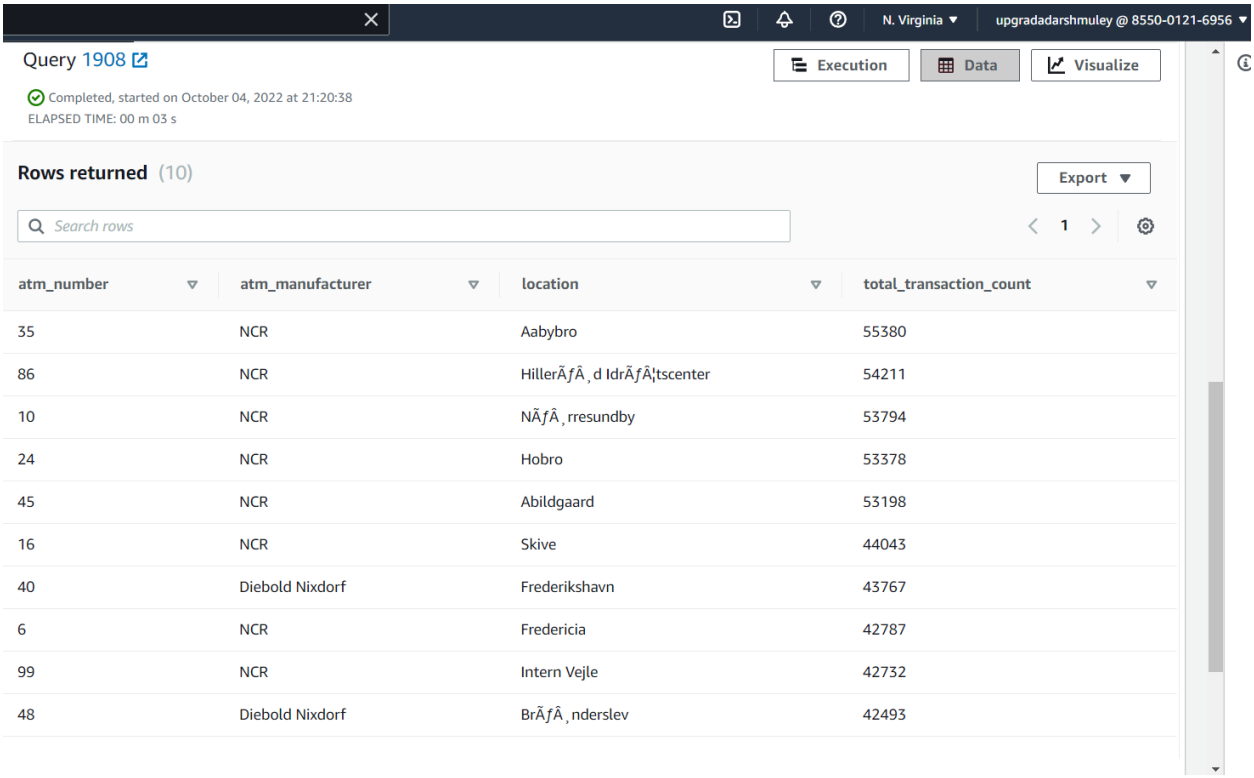
```
select f.weather_main,
count(trans_id) as total_transaction_count,
sum(case when atm_status = 'Inactive' then 1 else 0 end) as inactive_count, case when
coalesce(inactive_count, 0) = 0 then 0.0000
else trunc((cast(inactive_count as numeric(10,4))/total_transaction_count)*100, 2) end as
inactive_count_percent
from atm_data.fact_atm_trans f where f.weather_main != '' group by f.weather_main
order by inactive_count_percent desc limit 10;
```



weather_main	total_transaction_count	inactive_count	inactive_count_percent
Snow	23405	4813	20.5600
Fog	18174	3729	20.5100
Clouds	1181901	194027	16.4100
Rain	545135	86017	15.7700
Clear	543949	85531	15.7200
Mist	82801	12864	15.5300
Thunderstorm	2549	361	14.1600
Drizzle	62530	8670	13.8600
TORNADO	38	1	2.6300
Haze	3	0	0.0000

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

```
select a.atm_number, a.atm_manufacturer, l.location, count(trans_id) as total_transaction_count
from atm_data.fact_atm_trans f, atm_data.dim_atm a, atm_data.dim_location l where f.atm_id =
a.atm_id and a.atm_location_id = l.location_id
group by a.atm_number, a.atm_manufacturer, l.location order by total_transaction_count desc
limit 10;
```



N. Virginia | upgradadarshmuley @ 8550-0121-6956

Query 1908

Execution | Data | Visualize

Completed, started on October 04, 2022 at 21:20:38
ELAPSED TIME: 00 m 03 s

Rows returned (10)

Export

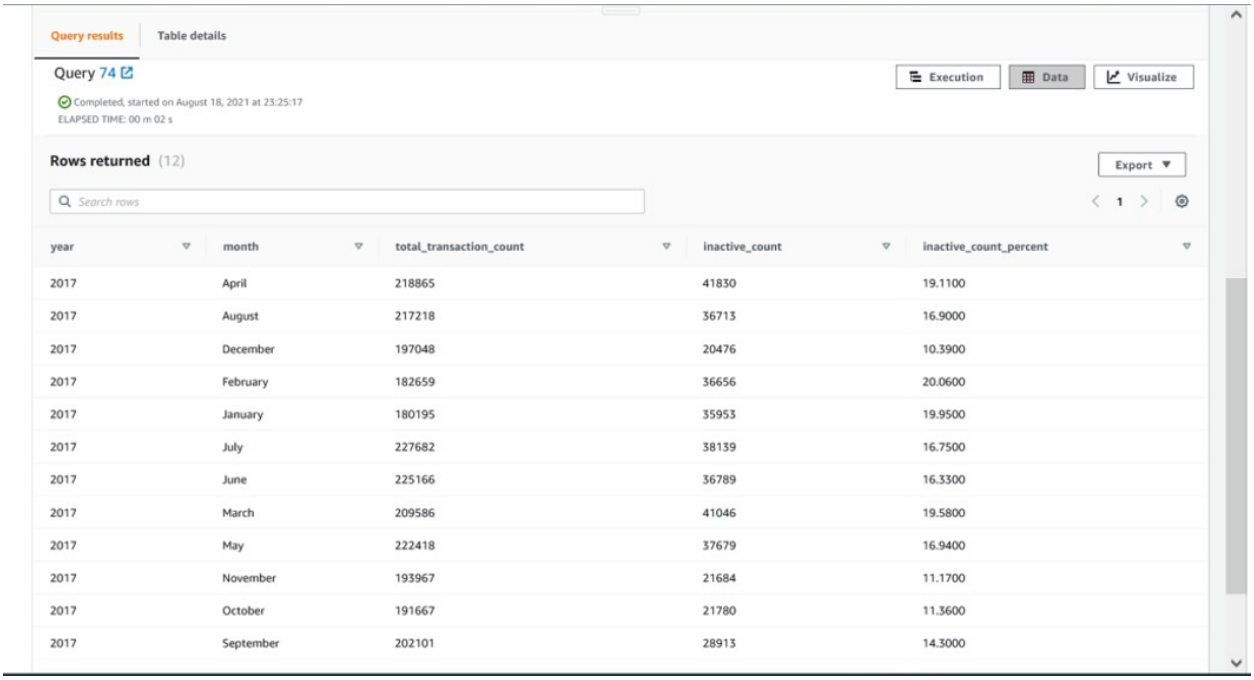
Search rows

1

atm_number	atm_manufacturer	location	total_transaction_count
35	NCR	Aabybro	55380
86	NCR	HillerÃƒÂ¸d IdrÃƒÂ¦tscenter	54211
10	NCR	NÃƒÂ¸rresundby	53794
24	NCR	Hobro	53378
45	NCR	Abildgaard	53198
16	NCR	Skive	44043
40	Diebold Nixdorf	Frederikshavn	43767
6	NCR	Fredericia	42787
99	NCR	Intern Vejle	42732
48	Diebold Nixdorf	BrÃƒÂ¸nderslev	42493

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

```
select d.year, d.month,
count(trans_id) as total_transaction_count,
sum(case when atm_status = 'Inactive' then 1 else 0 end) as inactive_count, case when
coalesce(inactive_count, 0) = 0 then 0.0000
else trunc((cast(inactive_count as numeric(10,4))/total_transaction_count)*100, 2) end as
inactive_count_percent
from atm_data.fact_atm_trans f inner join atm_data.dim_date d on f.date_id = d.date_id
group by d.year, d.month order by d.year, d.month
```



Query results | Table details

Query 74

Completed, started on August 18, 2021 at 23:25:17
ELAPSED TIME: 00 m 02 s

Execution | Data | Visualize

Rows returned (12)

Export

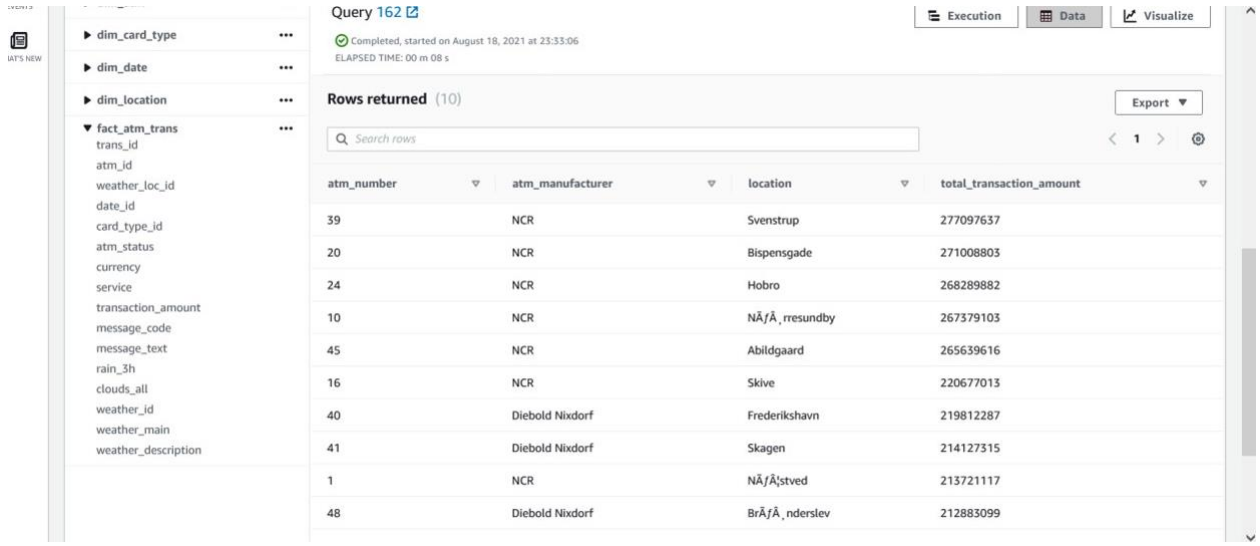
Search rows

1

year	month	total_transaction_count	inactive_count	inactive_count_percent
2017	April	218865	41830	19.1100
2017	August	217218	36713	16.9000
2017	December	197048	20476	10.3900
2017	February	182659	36656	20.0600
2017	January	180195	35953	19.9500
2017	July	227682	38139	16.7500
2017	June	225166	36789	16.3300
2017	March	209586	41046	19.5800
2017	May	222418	37679	16.9400
2017	November	193967	21684	11.1700
2017	October	191667	21780	11.3600
2017	September	202101	28913	14.3000

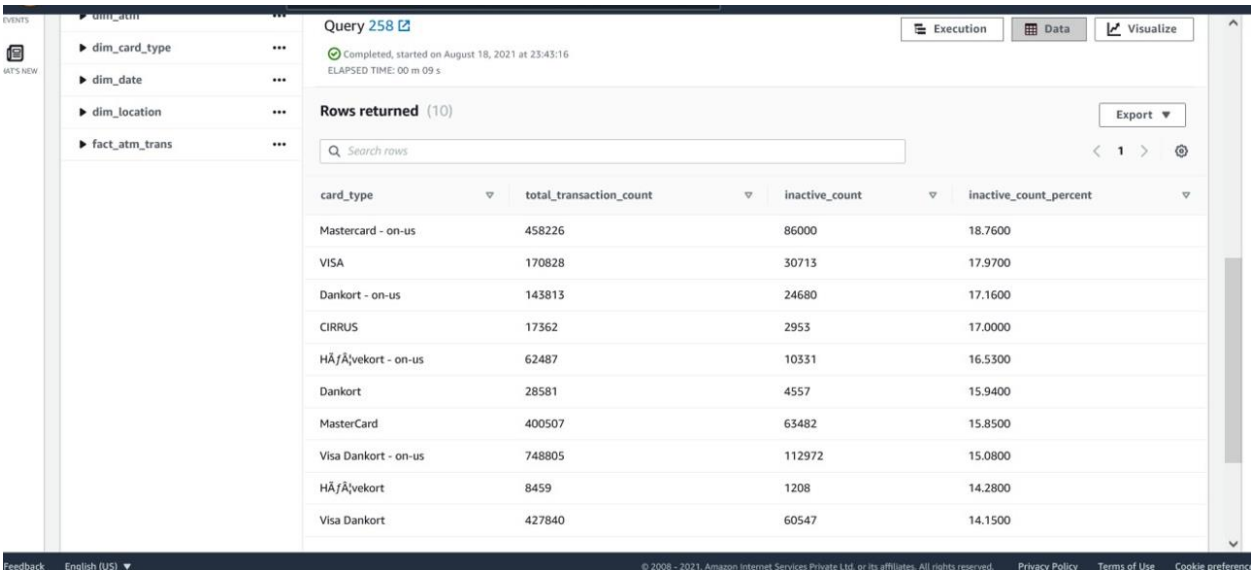
5. **Top 10 ATMs with the highest total withdrawn amount throughout the year**

```
select a.atm_number, a.atm_manufacturer,
l.location,sum(transaction_amount) as
total_transaction_amount
from atm_data.fact_atm_trans f, atm_data.dim_atm a, atm_data.dim_location l
where f.atm_id = a.atm_id and a.atm_location_id = l.location_id
group by a.atm_number, a.atm_manufacturer,
l.locationorder by total_transaction_amount desc
limit 10;
```



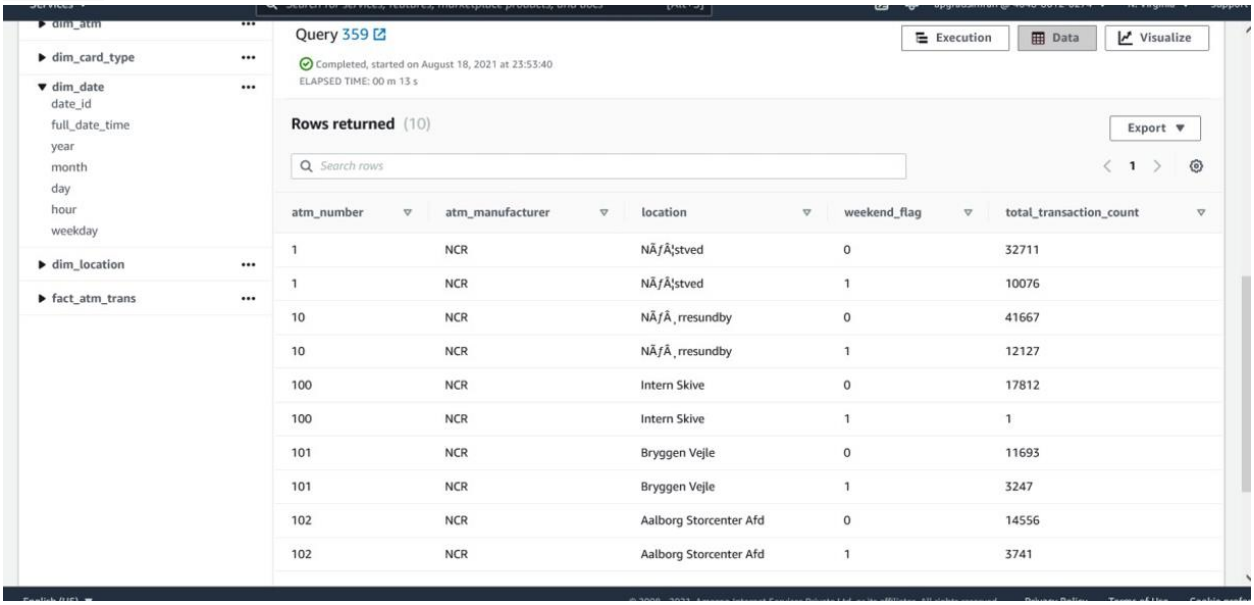
6. **Number of failed ATM transactions across various card types**

```
select ct.card_type,
count(trans_id) as total_transaction_count,
sum(case when atm_status = 'Inactive' then 1 else 0 end) as inactive_count,
case when coalesce(inactive_count, 0) = 0 then 0.0000
else trunc((cast(inactive_count as
numeric(10,4))/total_transaction_count)*100, 2)
end as inactive_count_percent
from atm_data.fact_atm_trans f, atm_data.dim_card_type ct
where f.card_type_id = ct.card_type_id
group by ct.card_type
order by inactive_count_percent desc
limit 10;
```



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**

```
select a.atm_number, a.atm_manufacturer, l.location,
case when d.weekday in ('Saturday','Sunday') then 1 else 0 end as
weekend_flag,
count(trans_id) as total_transaction_count
from atm_data.fact_atm_trans f, atm_data.dim_atm a, atm_data.dim_location l,
atm_data.dim_date d
where f.atm_id = a.atm_id and a.atm_location_id = l.location_id and
f.date_id
= d.date_id
group by a.atm_number, a.atm_manufacturer, l.location, weekend_flag
order by a.atm_number, a.atm_manufacturer, l.location, weekend_flag,
total_transaction_count
limit 10;
```



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

```
select a.atm_number, a.atm_manufacturer, l.location,
d.weekday,count(trans_id) as total_transaction_count
from atm_data.fact_atm_trans f inner join atm_data.dim_atm a on f.atm_id =
a.atm_id
inner join atm_data.dim_location l on a.atm_location_id =
l.location_idinner join atm_data.dim_date d on f.date_id = d.date_id
where l.location = 'Vejgaard' and d.weekday
in(    select d.weekday
       from atm_data.fact_atm_trans f inner join atm_data.dim_date d
       on f.date_id = d.date_id
       inner join atm_data.dim_location l on f.weather_loc_id = l.location_id
       where l.location = 'Vejgaard'
       group by d.weekday
       order by count(f.trans_id)
       desclimit 1 )
group by a.atm_number, a.atm_manufacturer, l.location, d.weekday
order by total_transaction_count;
```