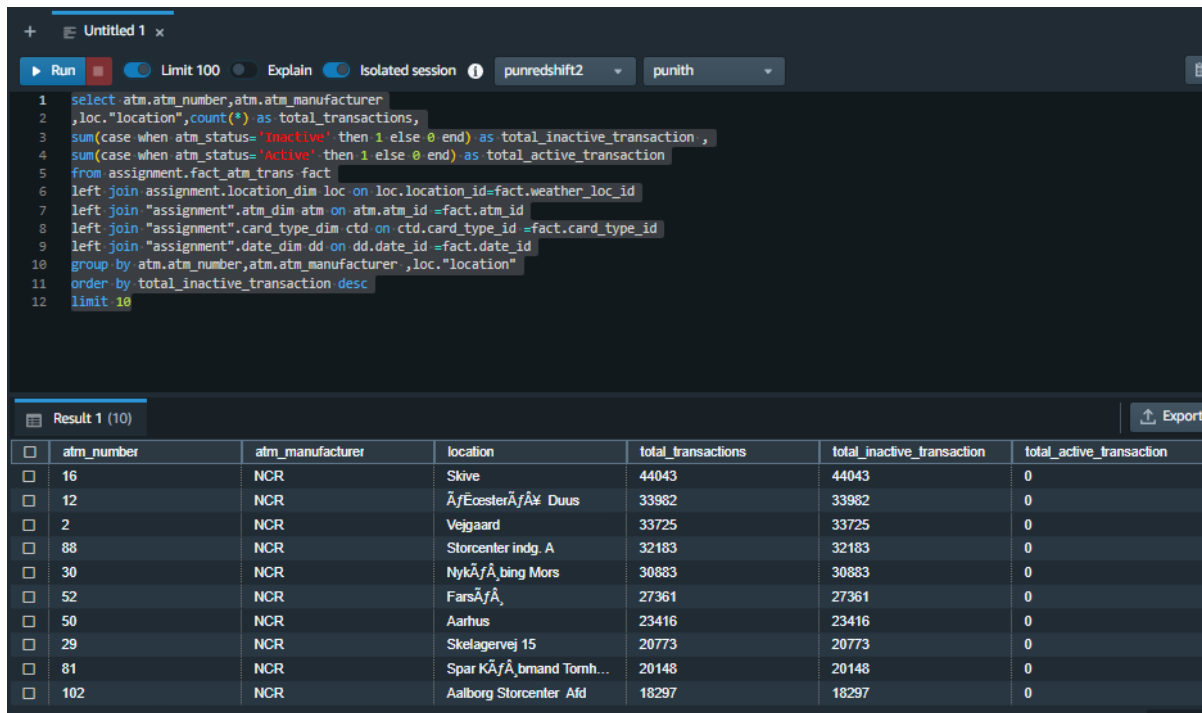


Solving analytical queries on Redshift Cluster

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

Query : select atm.atm_number,atm.atm_manufacturer ,loc."location",count(*) as total_transactions, sum(case when atm_status='Inactive' then 1 else 0 end) as total_inactive_transaction , sum(case when atm_status='Active' then 1 else 0 end) as total_active_transaction from assignment.fact_atm_trans fact left join assignment.location_dim loc on loc.location_id=fact.weather_loc_id left join "assignment".atm_dim atm on atm.atm_id =fact.atm_id left join "assignment".card_type_dim ctd on ctd.card_type_id =fact.card_type_id left join "assignment".date_dim dd on dd.date_id =fact.date_id group by atm.atm_number,atm.atm_manufacturer ,loc."location" order by total_inactive_transaction desc limit 10

Screenshot :



The screenshot shows a SQL query execution interface with a dark theme. The query is displayed in a text area, and the results are shown in a table below. The table has 7 columns: atm_number, atm_manufacturer, location, total_transactions, total_inactive_transaction, and total_active_transaction. The results are sorted by total_inactive_transaction in descending order, showing the top 10 ATMs.

atm_number	atm_manufacturer	location	total_transactions	total_inactive_transaction	total_active_transaction
16	NCR	Skive	44043	44043	0
12	NCR	Århus	33982	33982	0
2	NCR	Vejgaard	33725	33725	0
88	NCR	Storcenter indg. A	32183	32183	0
30	NCR	Nykøbing Mors	30883	30883	0
52	NCR	Farsø	27361	27361	0
50	NCR	Aarhus	23416	23416	0
29	NCR	Skelagervej 15	20773	20773	0
81	NCR	Spar Kålbmand Torh...	20148	20148	0
102	NCR	Aalborg Storcenter Afd	18297	18297	0

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

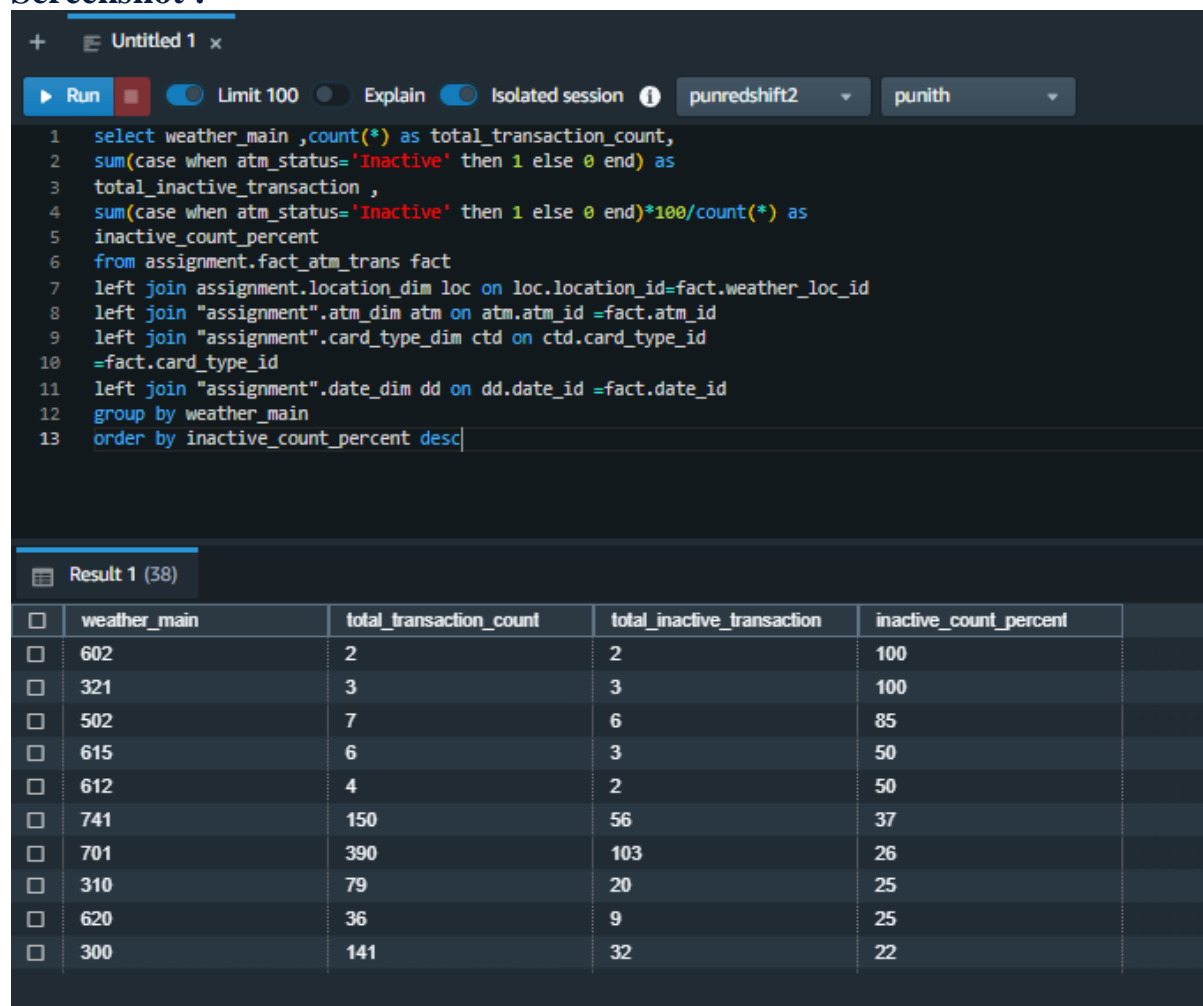
Query : select weather_main ,count(*) as total_transaction_count, sum(case when atm_status='Inactive' then 1 else 0 end) as total_inactive_transaction , sum(case when atm_status='Inactive' then 1 else 0 end)*100/count(*) as inactive_count_percent

```

from assignment.fact_atm_trans fact
left join assignment.location_dim loc on loc.location_id=fact.weather_loc_id
left join "assignment".atm_dim atm on atm.atm_id =fact.atm_id
left join "assignment".card_type_dim ctd on ctd.card_type_id
=fact.card_type_id
left join "assignment".date_dim dd on dd.date_id =fact.date_id
group by weather_main
order by inactive_count_percent desc

```

Screenshot :



The screenshot shows a SQL query editor with a query that calculates the total transaction count, total inactive transaction count, and inactive count percent for each weather main category. The results are displayed in a table below the query.

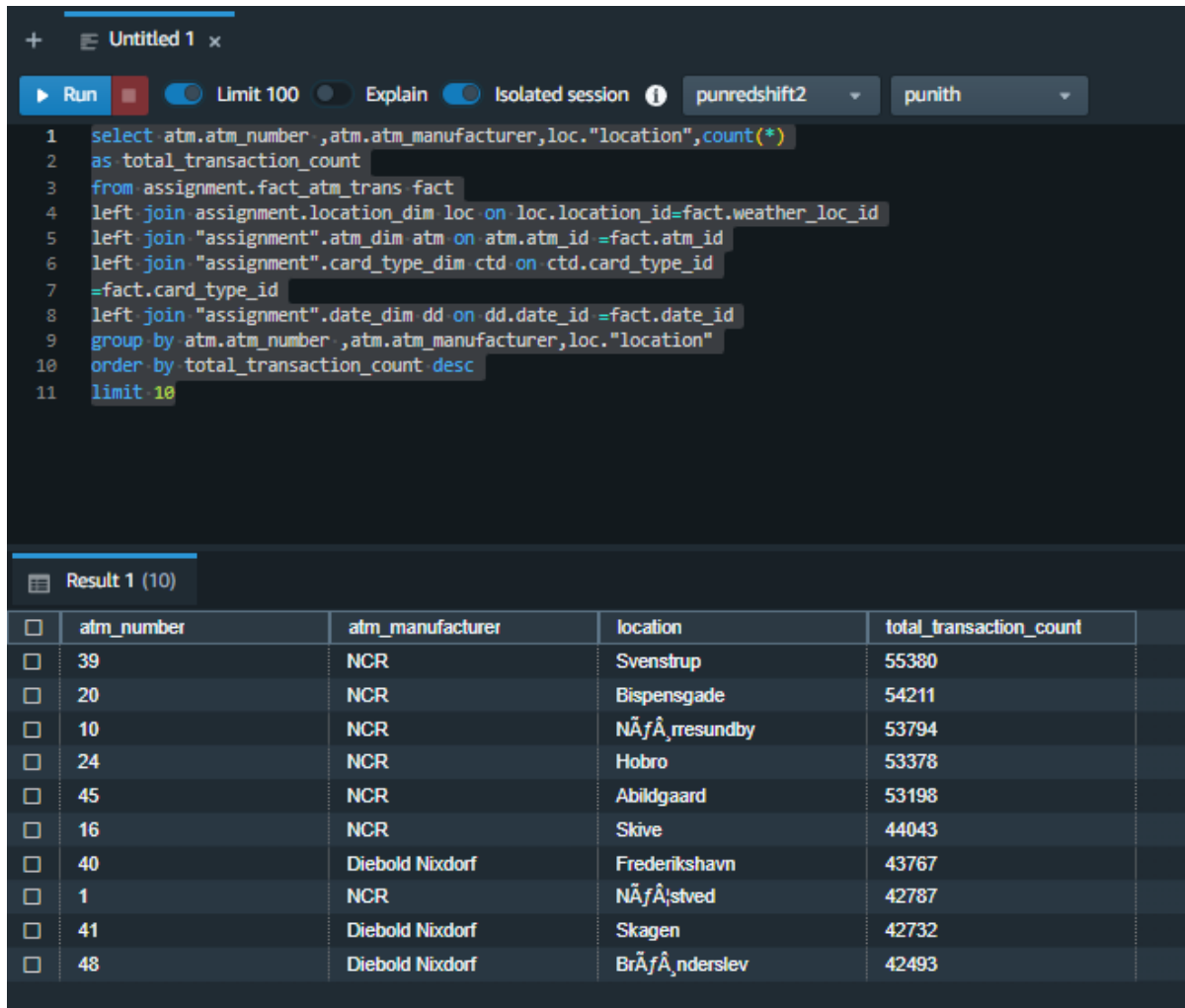
weather_main	total_transaction_count	total_inactive_transaction	inactive_count_percent
602	2	2	100
321	3	3	100
502	7	6	85
615	6	3	50
612	4	2	50
741	150	56	37
701	390	103	26
310	79	20	25
620	36	9	25
300	141	32	22

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

Query : select atm.atm_number ,atm.atm_manufacturer,loc."location",count(*)
as total_transaction_count
from assignment.fact_atm_trans fact
left join assignment.location_dim loc on loc.location_id=fact.weather_loc_id
left join "assignment".atm_dim atm on atm.atm_id =fact.atm_id
left join "assignment".card_type_dim ctd on ctd.card_type_id

```
=fact.card_type_id
left join "assignment".date_dim dd on dd.date_id =fact.date_id
group by atm.atm_number ,atm.atm_manufacturer,loc."location"
order by total_transaction_count desc
limit 10
```

Screenshot :



The screenshot shows a SQL query editor with a query and its results. The query is as follows:

```
1 select atm.atm_number ,atm.atm_manufacturer,loc."location",count(*)
2 as total_transaction_count
3 from assignment.fact_atm_trans fact
4 left join assignment.location_dim loc on loc.location_id=fact.weather_loc_id
5 left join "assignment".atm_dim atm on atm.atm_id =fact.atm_id
6 left join "assignment".card_type_dim ctd on ctd.card_type_id
7 =fact.card_type_id
8 left join "assignment".date_dim dd on dd.date_id =fact.date_id
9 group by atm.atm_number ,atm.atm_manufacturer,loc."location"
10 order by total_transaction_count desc
11 limit 10
```

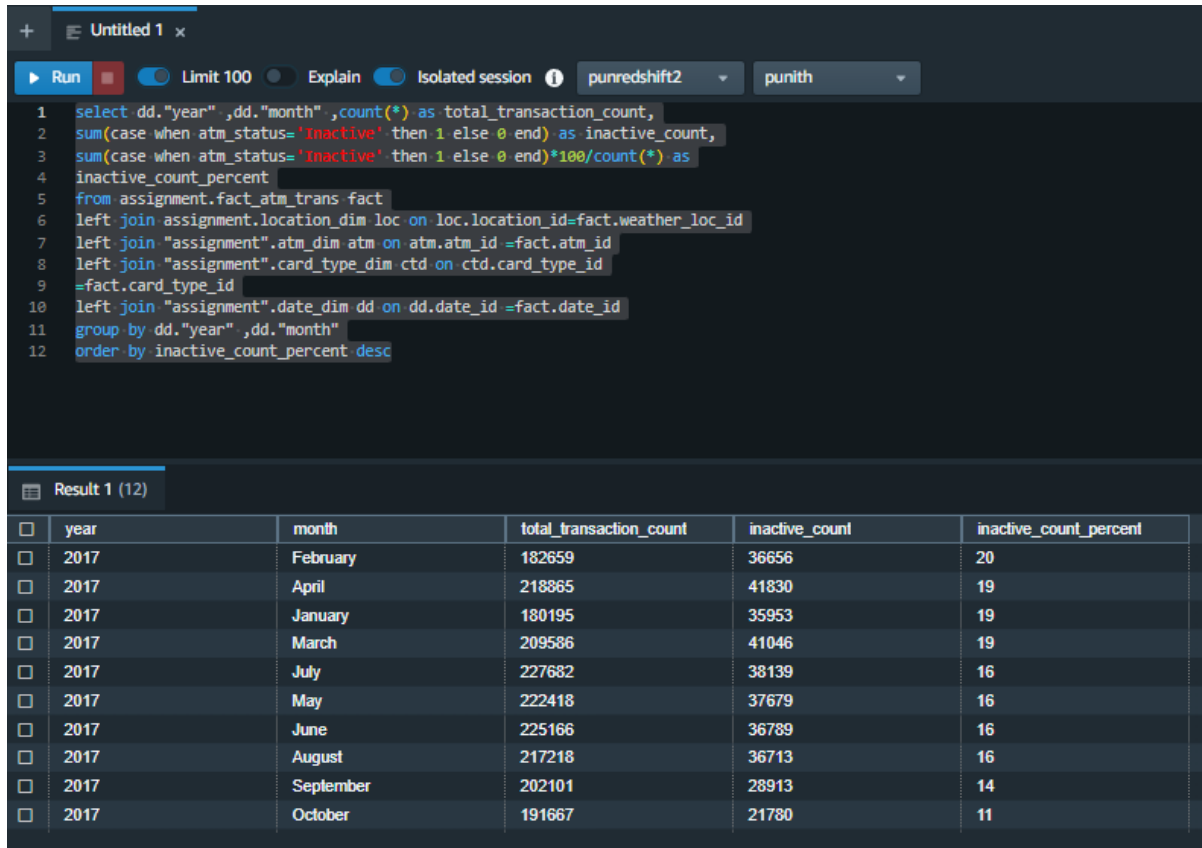
The results are displayed in a table with 5 columns: atm_number, atm_manufacturer, location, and total_transaction_count. The table shows the top 10 results.

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

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

Query : select dd."year" ,dd."month" ,count(*) as total_transaction_count,
sum(case when atm_status='Inactive' then 1 else 0 end) as inactive_count,
sum(case when atm_status='Inactive' then 1 else 0 end)*100/count(*) as
inactive_count_percent
from assignment.fact_atm_trans fact
left join assignment.location_dim loc on loc.location_id=fact.weather_loc_id
left join "assignment".atm_dim atm on atm.atm_id =fact.atm_id
left join "assignment".card_type_dim ctd on ctd.card_type_id

```
=fact.card_type_id
left join "assignment".date_dim dd on dd.date_id =fact.date_id
group by dd."year" ,dd."month"
order by inactive_count_percent desc
Screenshot :
```



The screenshot shows a SQL query editor with a query and its results. The query is as follows:

```
1 select dd."year" ,dd."month" ,count(*) as total_transaction_count,
2 sum(case when atm_status='Inactive' then 1 else 0 end) as inactive_count,
3 sum(case when atm_status='Inactive' then 1 else 0 end)*100/count(*) as
4 inactive_count_percent
5 from assignment.fact_atm_trans fact
6 left join assignment.location_dim loc on loc.location_id=fact.weather_loc_id
7 left join "assignment".atm_dim atm on atm.atm_id =fact.atm_id
8 left join "assignment".card_type_dim ctd on ctd.card_type_id
9 =fact.card_type_id
10 left join "assignment".date_dim dd on dd.date_id =fact.date_id
11 group by dd."year" ,dd."month"
12 order by inactive_count_percent desc
```

The results are displayed in a table with 6 columns: year, month, total_transaction_count, inactive_count, and inactive_count_percent. The table shows data for the year 2017, grouped by month.

year	month	total_transaction_count	inactive_count	inactive_count_percent
2017	February	182659	36656	20
2017	April	218865	41830	19
2017	January	180195	35953	19
2017	March	209586	41046	19
2017	July	227682	38139	16
2017	May	222418	37679	16
2017	June	225166	36789	16
2017	August	217218	36713	16
2017	September	202101	28913	14
2017	October	191667	21780	11

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

Query : select atm.atm_number ,atm.atm_manufacturer ,loc."location"
, sum(transaction_amount) as total_transaction_amount
from assignment.fact_atm_trans fact
left join assignment.location_dim loc on loc.location_id=fact.weather_loc_id
left join "assignment".atm_dim atm on atm.atm_id =fact.atm_id
left join "assignment".card_type_dim ctd on ctd.card_type_id
=fact.card_type_id
left join "assignment".date_dim dd on dd.date_id =fact.date_id
group by atm.atm_number ,atm.atm_manufacturer ,loc."location"
order by total_transaction_amount desc
limit 10

Screenshot :

+
Untitled 1 x

Run
Limit 100
Explain
Isolated session
punredshift2
punith

```

1 select atm.atm_number ,atm.atm_manufacturer ,loc."location"
2 ,sum(transaction_amount) as total_transaction_amount
3 from assignment.fact_atm_trans fact
4 left join assignment.location_dim loc on loc.location_id=fact.weather_loc_id
5 left join "assignment".atm_dim atm on atm.atm_id =fact.atm_id
6 left join "assignment".card_type_dim ctd on ctd.card_type_id
7 =fact.card_type_id
8 left join "assignment".date_dim dd on dd.date_id =fact.date_id
9 group by atm.atm_number ,atm.atm_manufacturer ,loc."location"
10 order by total_transaction_amount desc
11 limit 10

```

Result 1 (10)

	atm_number	atm_manufacturer	location	total_transaction_amount
<input type="checkbox"/>	39	NCR	Svenstrup	277097637
<input type="checkbox"/>	20	NCR	Bispensgade	271008803
<input type="checkbox"/>	24	NCR	Hobro	268289882
<input type="checkbox"/>	10	NCR	NÃfÃresundby	267379103
<input type="checkbox"/>	45	NCR	Abildgaard	265639616
<input type="checkbox"/>	16	NCR	Skive	220677013
<input type="checkbox"/>	40	Diebold Nixdorf	Frederikshavn	219812287
<input type="checkbox"/>	41	Diebold Nixdorf	Skagen	214127315
<input type="checkbox"/>	1	NCR	NÃfÃstved	213721117
<input type="checkbox"/>	48	Diebold Nixdorf	BrÃfÃnderslev	212883099

6. Number of failed ATM transactions across various card types

Query : select ctd.card_type,count(*) as total_transaction_count,
sum(case when atm_status='Inactive' then 1 else 0 end) as inactive_count,
sum(case when atm_status='Inactive' then 1 else 0 end)*100/count(*) as
inactive_count_percent
from assignment.fact_atm_trans fact
left join assignment.location_dim loc on loc.location_id=fact.weather_loc_id
left join "assignment".atm_dim atm on atm.atm_id =fact.atm_id
left join "assignment".card_type_dim ctd on ctd.card_type_id
=fact.card_type_id
left join "assignment".date_dim dd on dd.date_id =fact.date_id
group by ctd.card_type
order by inactive_count_percent desc

Screenshot :

+
Untitled 1
x

Run
Limit 100
Explain
Isolated session
punredshift2
punith

```

1 select ctd.card_type,count(*) as total_transaction_count,
2 sum(case when atm_status='inactive' then 1 else 0 end) as inactive_count,
3 sum(case when atm_status='inactive' then 1 else 0 end)*100/count(*) as
4 inactive_count_percent
5 from assignment.fact_atm_trans fact
6 left join assignment.location_dim loc on loc.location_id=fact.weather_loc_id
7 left join "assignment".atm_dim atm on atm.atm_id =fact.atm_id
8 left join "assignment".card_type_dim ctd on ctd.card_type_id
9 =fact.card_type_id
10 left join "assignment".date_dim dd on dd.date_id =fact.date_id
11 group by ctd.card_type
12 order by inactive_count_percent desc

```

Result 1 (12)

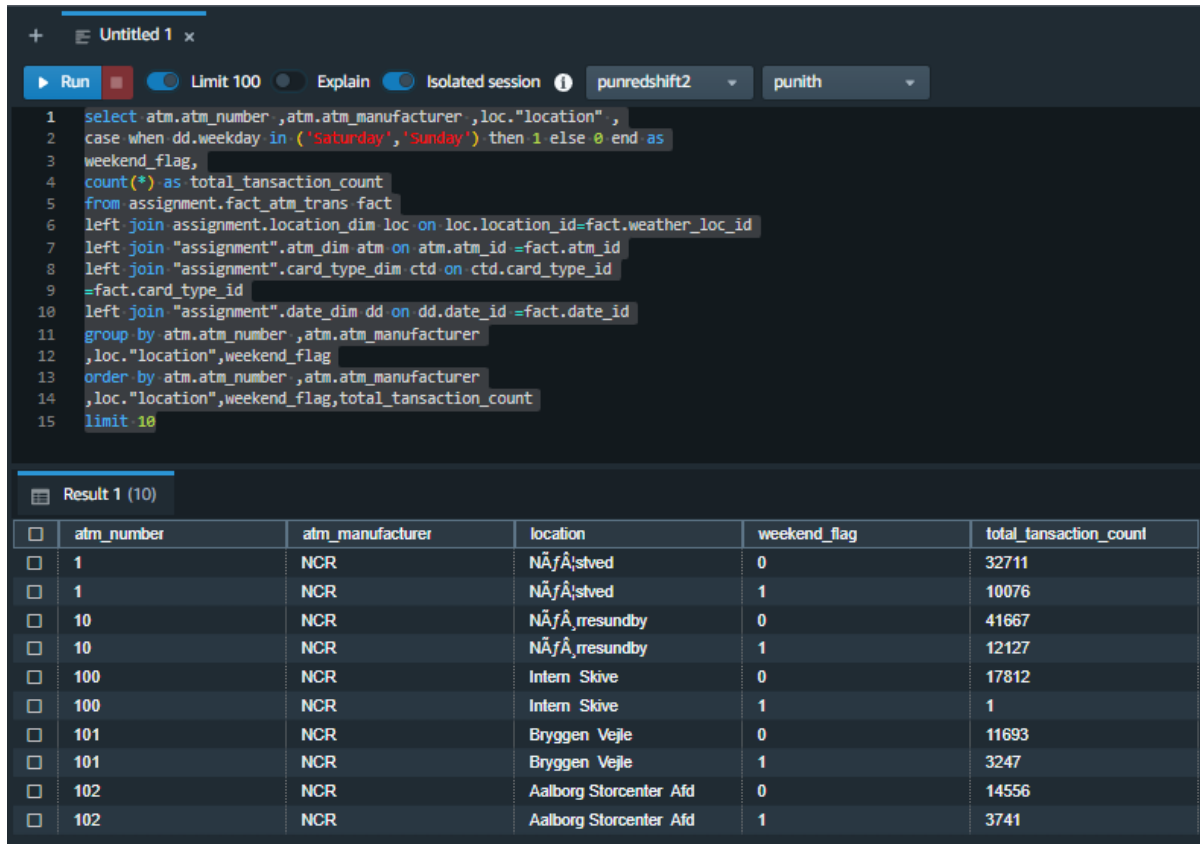
card_type	total_transaction_count	inactive_count	inactive_count_percent
Mastercard - on-us	458226	86000	18
VISA	170828	30713	17
Dankort - on-us	143813	24680	17
CIRRUS	17362	2953	17
HÃ¶fÃ¶vekort - on-us	62487	10331	16
Dankort	28581	4557	15
MasterCard	400507	63482	15
Visa Dankort - on-us	748805	112972	15
HÃ¶fÃ¶vekort	8459	1208	14
Visa Dankort	427840	60547	14

7. Top 10 records with the number of transactions ordered by the ATM_number, ATM_manufacturer, location, weekend_flag and then total_transaction_count, on weekdays and on weekends throughout the year

Query : select atm.atm_number ,atm.atm_manufacturer ,loc."location" ,
case when dd.weekday in ('Saturday','Sunday') then 1 else 0 end as
weekend_flag,
count(*) as total_tansaction_count
from assignment.fact_atm_trans fact
left join assignment.location_dim loc on loc.location_id=fact.weather_loc_id
left join "assignment".atm_dim atm on atm.atm_id =fact.atm_id
left join "assignment".card_type_dim ctd on ctd.card_type_id
=fact.card_type_id
left join "assignment".date_dim dd on dd.date_id =fact.date_id
group by atm.atm_number ,atm.atm_manufacturer

```
,loc."location",weekend_flag
order by atm.atm_number ,atm.atm_manufacturer
,loc."location",weekend_flag,total_tansaction_count
limit 10
```

Screenshot :



The screenshot shows a SQL IDE window titled 'Untitled 1'. The query is as follows:

```
1 select atm.atm_number ,atm.atm_manufacturer ,loc."location" ,
2 case when dd.weekday in ('Saturday','Sunday') then 1 else 0 end as
3 weekend_flag,
4 count(*) as total_tansaction_count
5 from assignment.fact_atm_trans fact
6 left join assignment.location_dim loc on loc.location_id=fact.weather_loc_id
7 left join "assignment".atm_dim atm on atm.atm_id =fact.atm_id
8 left join "assignment".card_type_dim ctd on ctd.card_type_id
9 =fact.card_type_id
10 left join "assignment".date_dim dd on dd.date_id =fact.date_id
11 group by atm.atm_number ,atm.atm_manufacturer
12 ,loc."location",weekend_flag
13 order by atm.atm_number ,atm.atm_manufacturer
14 ,loc."location",weekend_flag,total_tansaction_count
15 limit 10
```

The results are displayed in a table with 10 rows and 5 columns:

atm_number	atm_manufacturer	location	weekend_flag	total_tansaction_count
1	NCR	NÅfÅstved	0	32711
1	NCR	NÅfÅstved	1	10076
10	NCR	NÅfÅresundby	0	41667
10	NCR	NÅfÅresundby	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 atm_number,atm_manufacturer ,"location",weekday
,total_transaction_count
from (
select atm.atm_number,atm.atm_manufacturer ,loc."location",dd.weekday
,count(*) as total_transaction_count,
row_number() over (partition by atm_number order by count(*) desc) as
row_num
from assignment.fact_atm_trans fact
left join assignment.location_dim loc on loc.location_id=fact.weather_loc_id
left join "assignment".atm_dim atm on atm.atm_id =fact.atm_id
left join "assignment".card_type_dim ctd on ctd.card_type_id
=fact.card_type_id
left join "assignment".date_dim dd on dd.date_id =fact.date_id
where "location"='Vejgaard'

group by atm.atm_number,atm.atm_manufacturer ,loc."location",dd.weekday
) a where row_num=1

Screenshot :

+
 Untitled 1 x

Run

Limit 100

Explain

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```

1 select atm_number,atm_manufacturer ,"location",weekday
2 ,total_transaction_count
3 from (
4 select atm.atm_number,atm.atm_manufacturer ,loc."location",dd.weekday
5 ,count(*) as total_transaction_count,
6 row_number() over (partition by atm_number order by count(*) desc) as
7 row_num
8 from assignment.fact_atm_trans fact
9 left join assignment.location_dim loc on loc.location_id=fact.weather_loc_id
10 left join "assignment".atm_dim atm on atm.atm_id =fact.atm_id
11 left join "assignment".card_type_dim ctd on ctd.card_type_id
12 =fact.card_type_id
13 left join "assignment".date_dim dd on dd.date_id =fact.date_id
14 where "location"='Veijgaard'
15 group by atm.atm_number,atm.atm_manufacturer ,loc."location",dd.weekday
16 ) a where row_num=1
    
```

Result 1 (2)

	atm_number	atm_manufacturer	location	weekday	total_transaction_count
<input type="checkbox"/>	103	Diebold Nixdorf	Veijgaard	Friday	4757
<input type="checkbox"/>	2	NCR	Veijgaard	Friday	6290