

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

```
SELECT a.atm_id
      ,a.atm_manufacturer
      ,b.atm_location
      ,count(d.trans_id) AS transaction_count
      ,count(d.atm_status)
FROM etl.atm a
      ,etl.loc b
      ,etl.FACT_ATM_TRANS d
WHERE d.atm_status = 'Inactive'
      AND d.atm_prim_id = a.atm_prim_id
      AND b.location_id = d.location_id
GROUP BY a.atm_id
      ,a.atm_manufacturer
      ,b.atm_location
ORDER BY transaction_count DESC limit 10
```

Query results

Table details

Query 1068

Completed, started on February 06, 2022 at 15:08:48

ELAPSED TIME: 00 m 02 s

Execution

Data

Visualize

Rows returned (10)

Export

Q Search rows

atm_id	atm_manufacturer	atm_location	transaction_count	count
85	Diebold Nixdorf	Skive	44043	44043
27	NCR	Århus	33982	33982
98	NCR	Vejgaard	33725	33725
60	NCR	Storcenter indg. A	32183	32183
110	Diebold Nixdorf	Nykøbing Mors	30883	30883
26	NCR	Farsø	27361	27361
50	NCR	Aarhus	23416	23416
61	NCR	Skelagervej 15	20773	20773
40	Diebold Nixdorf	Spar København og Tønder	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

```
SELECT c.weather_main
      ,c.total_transaction_count
      ,NVL(d.inactive_count::INT, 0) AS total_inactive_count
      ,round(100.0000 * total_inactive_count / c.total_transaction_count, 4) AS inactive_count_percent
FROM (
  SELECT a.weather_main
        ,count(a.trans_id) AS total_transaction_count
  FROM etl.FACT_ATM_TRANS a
  WHERE a.weather_main != ' '
  GROUP BY a.weather_main
) c
LEFT OUTER JOIN (
  SELECT b.weather_main
        ,count(b.atm_status) AS inactive_count
  FROM etl.FACT_ATM_TRANS b
  WHERE b.atm_status = 'Inactive'
        AND b.weather_main != ' '
  GROUP BY b.weather_main
) d ON c.weather_main = d.weather_main
GROUP BY c.weather_main
      ,c.total_transaction_count
      ,total_inactive_count
ORDER BY inactive_count_percent DESC;
```

Query results					Table details				
Query 1104					Execution Data Visualize				
Completed, started on February 06, 2022 at 15:12:24 ELAPSED TIME: 00 m 02 s									
Rows returned (10)					Export				
Search rows					< 1 > ⌕				
weather_main	total_transaction_count	total_inactive_count	inactive_count_percent						
Snow	23405	4813	20.5640						
Fog	18174	3729	20.5183						
Clouds	1181901	194027	16.4165						
Rain	545135	86017	15.7790						
Clear	543949	85531	15.7241						
Mist	82801	12864	15.5360						
Thunderstorm	2549	361	14.1624						
Drizzle	62530	8670	13.8653						
TORNADO	38	1	2.6316						
Haze	3	0	0.0000						


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

```
SELECT a.atm_id
      ,a.atm_manufacturer
      ,b.atm_location
      ,count(d.trans_id) AS transaction_count
FROM etl.atm a
      ,etl.loc b
      ,etl.FACT_ATM_TRANS d
WHERE d.atm_prim_id = a.atm_prim_id
      AND b.location_id = d.location_id
GROUP BY a.atm_id
      ,a.atm_manufacturer
      ,b.atm_location
ORDER BY transaction_count DESC limit 10
```

Query 1153 🔗					Execution	Data	Visualize
Completed, started on February 06, 2022 at 15:15:29							
ELAPSED TIME: 00 m 02 s							
Rows returned (10)					Export ▼		
<input type="text" value="Search rows"/>					< 1 > ⚙️		
atm_id	atm_manufacturer	atm_location	transaction_count				
87	NCR	Svenstrup	55380				
20	NCR	Bispensgade	54211				
92	NCR	NÅfÅ_rresundby	53794				
46	Diebold Nixdorf	Hobro	53378				
11	NCR	Abildgaard	53198				
85	Diebold Nixdorf	Skive	44043				
39	NCR	Frederikshavn	43767				
1	NCR	NÅfÅstved	42787				
16	NCR	Skagen	42732				
23	Diebold Nixdorf	BrÅfÅ_nderslev	42493				

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

```
SELECT c.year
      ,c.month
      ,c.transaction_count
      ,d.inactive_count
      ,CAST(trunc(100.0 * d.inactive_count / c.transaction_count, 2) AS NUMERIC(10, 4)) AS inactive_count_percent
FROM (
  SELECT a.year
        ,a.month
        ,count(b.trans_id) AS transaction_count
  FROM etl.DATE a
        ,etl.FACT_ATM_TRANS b
  WHERE a.date_id = b.date_id
  GROUP BY a.month
        ,a.year
) c LEFT JOIN (
  SELECT a.year
        ,a.month
        ,count(b.atm_status) AS inactive_count
  FROM etl.DATE a
        ,etl.FACT_ATM_TRANS b
  WHERE a.date_id = b.date_id
        AND b.atm_status = 'Inactive'
  GROUP BY a.month
        ,a.year
) d ON c.year = d.year
    AND c.month = d.month
ORDER BY c.year
      ,c.month;
```

Query 1169 🔗					Execution	Data	Visualize
<div>  Completed, started on February 06, 2022 at 15:16:35 ELAPSED TIME: 00 m 02 s </div>							
Rows returned (12)					Export ▼		
<input type="text" value="Search rows"/>					< 1 2 > ⚙️		
year	month	transaction_count	inactive_count	inactive_count_percent			
2017	01	197905	38613	19.5100			
2017	02	194481	36181	18.6000			
2017	03	221213	38646	17.4700			
2017	04	212000	34223	16.1400			
2017	05	209637	28831	13.7500			
2017	06	190630	24343	12.7600			
2017	07	198545	34612	17.4300			
2017	08	210036	39854	18.9700			
2017	09	227365	39778	17.4900			
2017	10	209727	33996	16.2000			

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

```
SELECT a.atm_id
      ,a.atm_manufacturer
      ,b.atm_location
      ,sum(d.transaction_amount) AS total_transaction_amount
FROM etl.atm a
      ,etl.loc b
      ,etl.FACT_ATM_TRANS d
WHERE d.atm_prim_id = a.atm_prim_id
      AND b.location_id = d.location_id
GROUP BY a.atm_id
      ,a.atm_manufacturer
      ,b.atm_location
ORDER BY total_transaction_amount DESC limit 10
```

Query 1182
Execution
Data
Visualize

Completed, started on February 06, 2022 at 15:17:51
ELAPSED TIME: 00 m 02 s

Rows returned (10)
Export

Search rows

atm_id	atm_manufacturer	atm_location	total_transaction_amount
87	NCR	Svenstrup	277097637
20	NCR	Bispensgade	271008803
46	Diebold Nixdorf	Hobro	268289882
92	NCR	NÅfÅ, resundby	267379103
11	NCR	Abildgaard	265639616
85	Diebold Nixdorf	Skive	220677013
39	NCR	Frederikshavn	219812287
16	NCR	Skagen	214127315
1	NCR	NÅfÅ, stved	213721117
23	Diebold Nixdorf	BrÅfÅ, nderslev	212883099

6. Number of failed ATM transactions across various card types

```
SELECT a.card_type
      ,a.transaction_count
      ,b.inactive_count
      ,round(100.0000 * b.inactive_count / a.transaction_count, 4) AS inactive_count_percent
FROM (
      SELECT c.card_type
            ,count(d.trans_id) AS transaction_count
      FROM etl.card c
            ,etl.FACT_ATM_TRANS d
      WHERE c.card_type_id = d.card_type_id
      GROUP BY c.card_type
    ) a
LEFT JOIN (
      SELECT c.card_type
            ,count(d.atm_status) AS inactive_count
      FROM etl.card c
            ,etl.FACT_ATM_TRANS d
      WHERE c.card_type_id = d.card_type_id
            AND d.atm_status = 'Inactive'
      GROUP BY c.card_type
    ) b ON a.card_type = b.card_type
ORDER BY inactive_count_percent DESC;
```

Query [1200](#)

Execution

Data

Visualize

Completed, started on February 06, 2022 at 15:19:36

ELAPSED TIME: 00 m 02 s

Rows returned (12)

Export

Search rows

1
2

card_type	transaction_count	inactive_count	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
HÃfÃ\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
HÃfÃ\vekort	8459	1208	14.2806
Visa Dankort	427840	60547	14.1518

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_id, a.atm_manufacturer, b.atm_location,
CASE c.weekday
WHEN 'Monday'
THEN '0'
WHEN 'Tuesday'
THEN '0'
WHEN 'Wednesday'
THEN '0'
WHEN 'Thursday'
THEN '0'
WHEN 'Friday'
THEN '0'
ELSE '1'
END AS weekend_flag,
count(d.trans_id) as total_transaction_count
from etl.atm a, etl.loc b, etl.date c, etl.FACT_ATM_TRANS d
where d.atm_prim_id = a.atm_prim_id
and b.location_id = d.location_id
and c.date_id = d.date_id
group by a.atm_id, a.atm_manufacturer, b.atm_location, weekend_flag
order by a.atm_id asc, weekend_flag asc
limit 10
```

Query 1211 [🔗](#)

Completed, started on February 06, 2022 at 15:20:29
ELAPSED TIME: 00 m 02 s

Execution Data Visualize

Rows returned (10) Export ▼

Q Search rows < 1 > ⚙

atm_id	atm_manufacturer	atm_location	weekend_flag	total_transaction_count
1	NCR	NÅfÅstved	0	30750
1	NCR	NÅfÅstved	1	12037
10	NCR	Bryggen Vejle	0	10876
10	NCR	Bryggen Vejle	1	4064
100	NCR	Aalborg Hallen	0	1677
100	NCR	Aalborg Hallen	1	590
101	NCR	Aarhus	0	9278
101	NCR	Aarhus	1	3640
102	NCR	Aalborg Storcenter Afd	0	13512
102	NCR	Storvorde	0	24705

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

```
SELECT atm_id,
atm_manufacturer,
atm_location,
weekday,
total_transaction_count
FROM (
select atm_id,
atm_manufacturer,
atm_location,
weekday,
total_transaction_count,
max(total_transaction_count) over (partition by atm_id) as max_version
from (SELECT a.atm_id, a.atm_manufacturer, b.atm_location, c.weekday,
count(d.trans_id) as total_transaction_count
from etl.atm a, etl.loc b, etl.date c, etl.FACT_ATM_TRANS d
where d.atm_prim_id = a.atm_prim_id
and b.location_id = d.location_id
and b.atm_location = 'Vejgaard'
and c.date_id = d.date_id
group by a.atm_id, a.atm_manufacturer, b.atm_location, c.weekday) c
) t
where total_transaction_count = max_version;
```

Query [1224](#)

Execution

Data

Visualize

Completed, started on February 06, 2022 at 15:21:28

ELAPSED TIME: 00 m 02 s

Rows returned (2)

Export

Q Search rows

< 1 > ⚙

atm_id	atm_manufacturer	atm_location	weekday	total_transaction_count
98	NCR	Vejgaard	Thursday	5110
103	Diebold Nixdorf	Vejgaard	Wednesday	3197