

## 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_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 rs_schema3.fact_atm_trans f, rs_schema3.dim_atm a,
rs_schema3.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 January 06, 2024 at 02:01:02  
ELAPSED TIME: 00 m 10 s




Rows returned (10) Export ▼

Search rows

| atm_number ▼ | atm_manufacturer ▼ | location ▼                | total_transaction_count ▼ | inactive_transaction_count ▼ | count_percent |
|--------------|--------------------|---------------------------|---------------------------|------------------------------|---------------|
| 16           | NCR                | Skive                     | 44043                     | 44043                        | 100           |
| 12           | NCR                | ÅföcesterÅfÅ<br>¥ Duus    | 33982                     | 33982                        | 100           |
| 2            | NCR                | Vejgaard                  | 33725                     | 33725                        | 100           |
| 88           | NCR                | Storcenter<br>indg. A     | 32183                     | 32183                        | 100           |
| 30           | NCR                | NykÅfÅ, bing<br>Mors      | 30883                     | 30883                        | 100           |
| 52           | NCR                | FarsÅfÅ,                  | 27361                     | 27361                        | 100           |
| 50           | NCR                | Aarhus                    | 23416                     | 23416                        | 100           |
| 29           | NCR                | Skelagervej 15            | 20773                     | 20773                        | 100           |
| 42           | NCR                | Vinderup                  | 20148                     | 20148                        | 100           |
| 102          | NCR                | Aalborg<br>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 rs_schema3.fact_atm_trans f where f.weather_main != " group by f.weather_main order by inactive_count_percent desc limit 10;
```

| <div>  Completed, started on January 06, 2024 at 02:21:52<br/>           ELAPSED TIME: 00 m 17 s         </div> |                           |                  |                          | Execution  | Data | Visualize |
|--|---------------------------|------------------|--------------------------|--|------|-----------|
| Rows returned (10) <div>Export ▼</div>   |                           |                  |                          |  |      |           |
| <div>  Search rows         </div>   |                           |                  |                          | <div>           &lt; 1 &gt;            </div> |      |           |
| 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 rs_schema3.fact_atm_trans f, rs_schema3.dim_atm a, rs_schema3.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;
```

Query [203348](#)

Execution

Data

Visualize

Completed, started on January 06, 2024 at 12:03:23

ELAPSED TIME: 00 m 14 s

Rows returned (10)

Export

Q Search rows

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| atm_number | atm_manufacturer | location            | total_transaction_count |
|------------|------------------|---------------------|-------------------------|
| 39         | NCR              | Svenstrup           | 55380                   |
| 20         | NCR              | Bispensgade         | 54211                   |
| 10         | NCR              | NÃfÃ, rresundby     | 53794                   |
| 24         | NCR              | Hobro               | 53378                   |
| 45         | NCR              | Abildgaard          | 53198                   |
| 16         | NCR              | Skive               | 44043                   |
| 36         | NCR              | Intern HjÃfÃ, rring | 43767                   |
| 1          | NCR              | NÃfÃ'stved          | 42787                   |
| 41         | Diebold Nixdorf  | Skagen              | 42732                   |
| 48         | Diebold Nixdorf  | BrÃfÃ, 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 rs_schema3.fact_atm_trans f inner join rs_schema3.dim_date d on f.date_id = d.date_id group by d.year, d.month order by d.year, d.month
```

Query [203413](#)

Execution

Data

Visualize

Completed, started on January 06, 2024 at 12:08:56

ELAPSED TIME: 00 m 13 s

Rows returned (12)

Export

Search rows

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| 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                |

## 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 rs_schema3.fact_atm_trans f, rs_schema3.dim_atm a,
rs_schema3.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_amount desc
limit 10;

```

Query [203482](#)

Execution

Data

Visualize

Completed, started on January 06, 2024 at 12:15:37  
ELAPSED TIME: 00 m 08 s

Rows returned (10)

Export

Search rows

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| atm_number | atm_manufacturer | location            | total_transaction_amount |
|------------|------------------|---------------------|--------------------------|
| 39         | NCR              | Svenstrup           | 277097637                |
| 20         | NCR              | Bispensgade         | 271008803                |
| 24         | NCR              | Hobro               | 268289882                |
| 10         | NCR              | NÅfÅ, rresundby     | 267379103                |
| 45         | NCR              | Abildgaard          | 265639616                |
| 16         | NCR              | Skive               | 220677013                |
| 36         | NCR              | Intern HjÅfÅ, rring | 219812287                |
| 41         | Diebold Nixdorf  | Skagen              | 214127315                |
| 1          | NCR              | NÅfÅ, stved         | 213721117                |
| 48         | Diebold Nixdorf  | BrÅfÅ, nderslev     | 212883099                |

## 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 rs_schema3.fact_atm_trans f, rs_schema3.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;
```

Query results

Table details

Query 203577

Execution

Data

Visualize

Completed, started on January 06, 2024 at 12:24:47

ELAPSED TIME: 00 m 13 s

Rows returned (10)

Export

Search rows

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| card_type            | total_transaction_count | inactive_count | inactive_count_percent |
|----------------------|-------------------------|----------------|------------------------|
| Mastercard - on-us   | 458226                  | 86000          | 18.7600                |
| VISA                 | 170828                  | 30713          | 17.9700                |
| Dankort - on-us      | 143813                  | 24680          | 17.1600                |
| CIRRUS               | 17362                   | 2953           | 17.0000                |
| HÃfÃ\vekort - on-us  | 62487                   | 10331          | 16.5300                |
| Dankort              | 28581                   | 4557           | 15.9400                |
| MasterCard           | 400507                  | 63482          | 15.8500                |
| Visa Dankort - on-us | 748805                  | 112972         | 15.0800                |
| HÃfÃ\vekort          | 8459                    | 1208           | 14.2800                |
| Visa Dankort         | 427840                  | 60547          | 14.1500                |

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 rs_schema3.fact_atm_trans f, rs_schema3.dim_atm a, rs_schema3.dim_location l, rs_schema3.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;
```

Query results

Table details

Query [203625](#)

Execution

Data

Visualize

Completed, started on January 06, 2024 at 12:28:33

ELAPSED TIME: 00 m 13 s

Rows returned (10)

Export

Search rows

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| atm_number | atm_manufacturer | location       | weekend_flag | total_transaction_count |
|------------|------------------|----------------|--------------|-------------------------|
| 1          | NCR              | NÃfÃ'stved     | 0            | 32711                   |
| 1          | NCR              | NÃfÃ'stved     | 1            | 10076                   |
| 10         | NCR              | NÃfÃ,rresundby | 0            | 41667                   |
| 10         | NCR              | NÃfÃ,rresundby | 1            | 12127                   |
| 100        | NCR              | Intern Skive   | 0            | 17812                   |
| 100        | NCR              | Intern Skive   | 1            | 1                       |
| 100        | NCR              | Skive Lobby    | 0            | 7788                    |
| 100        | NCR              | Skive Lobby    | 1            | 3146                    |
| 101        | NCR              | Bryggen Vejle  | 0            | 11693                   |
| 101        | NCR              | Bryggen Vejle  | 1            | 3247                    |

## 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 rs_schema3.fact_atm_trans f inner join rs_schema3.dim_atm a on
f.atm_id = a.atm_id inner join rs_schema3.dim_location l on a.atm_location_id = l.location_id
inner join rs_schema3.dim_date d on f.date_id = d.date_id where l.location = 'Vejgaard' and
d.weekday in ( select d.weekday from rs_schema3.fact_atm_trans f inner join
rs_schema3.dim_date d on f.date_id = d.date_id inner join rs_schema3.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) desc limit 1 ) group by a.atm_number, a.atm_manufacturer, l.location,
d.weekday order by total_transaction_count;
```

Query results

Table details

Query [203683](#)

Execution

Data

Visualize

Completed, started on January 06, 2024 at 12:34:30

ELAPSED TIME: 00 m 24 s

Rows returned (2)

Export

Search rows

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

-----The End-----