# **ETL Project : ATM Transactions**

### **Redshift Analytical Queries**

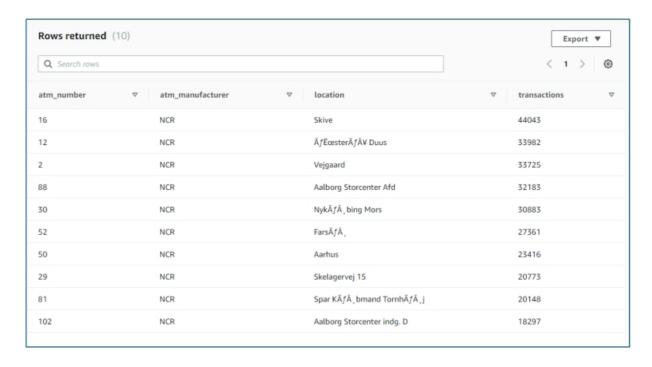
#### 1. Top 10 ATMs where most transactions are in the 'inactive' state

#### Query:

SELECT atm\_number, atm\_manufacturer, location, COUNT(trans\_id) AS transactions
FROM atm\_trans.fact\_atm\_trans T
INNER JOIN atm\_trans.dim\_atm A ON T.atm\_id = A.atm\_id
INNER JOIN atm\_trans.dim\_location L ON A.atm\_location\_id = L.location\_id
WHERE atm\_status = 'Inactive'
GROUP BY atm\_number, atm\_manufacturer, location
ORDER BY transactions DESC

#### Result:

LIMIT 10;



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

Query:

```
WITH weather_atm_failure AS
 SELECT
   weather main,
   COUNT(trans_id) AS transactions,
   SUM(CASE WHEN atm status='Inactive' THEN 1 ELSE 0 END) AS
inactive count
 FROM
   atm trans.fact atm trans
 WHERE
   weather main != "
 GROUP BY
   weather main
)
SELECT
 ROUND(CAST(inactive count AS numeric(10,2)) / transactions * 100, 2) AS
inactive_count_percent
FROM
 weather_atm_failure
ORDER BY
 inactive count percent DESC;
```

Rows returned (1	Export ▼  < 1 > ⊚			
weather_main	▽ transactions	▽ inactive_count	▽ inactive_count_percent	▽
Snow	23405	4813	20.56	
Fog	18174	3729	20.52	
Clouds	1181901	194027	16.42	
Rain	545135	86017	15.78	
Clear	543949	85531	15.72	
Mist	82801	12864	15.54	
Thunderstorm	2549	361	14.16	
Drizzle	62530	8670	13.87	
TORNADO	38	1	2.63	
Haze	3	0	0.00	

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

```
Query:
```

```
SELECT
 atm number,
 atm_manufacturer,
 location,
 COUNT(trans_id) AS transactions
FROM
 atm\_trans.fact\_atm\_trans\,T
INNER JOIN
 atm_trans.dim_atm A ON T.atm_id = A.atm_id
INNER JOIN
 atm_trans.dim_location L ON A.atm_location_id = L.location_id
GROUPBY
 atm_number,
 atm_manufacturer,
 location
ORDER BY
 transactions DESC
LIMIT 10;
```

Rows returned (1	0)				Export	▼ 1
Q Search rows		< 1 > @				
atm_number	$\nabla$	atm_manufacturer	▽	location	∇ transactions	∇
39		NCR		Svenstrup	55380	
20		NCR		Bispensgade	54211	
10		NCR		$N\tilde{A}f\tilde{A}$ , rresundby	53794	
24		NCR		Hobro	53378	
45		NCR		Abildgaard	53198	
16		NCR		Skive	44043	
40		Diebold Nixdorf		Frederikshavn	43767	
1		NCR		NÃ∱¦stved	42787	
41		Diebold Nixdorf		Skagen	42732	
48		Diebold Nixdorf		$Br\bar{A}f\bar{A}$ , nderslev	42493	

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

```
Query:
       WITH monthwise atm failure AS (
        SELECT
          month,
          COUNT(F.trans id) AS transactions,
          SUM(CASE WHEN F.atm_status='Inactive' THEN 1 ELSE 0 END) AS
       inactive count
        FROM
          atm\_trans.fact\_atm\_transF
          atm trans.dim date D ON F.date id = D.date id
        GROUP BY
          D.month
       )
       SELECT
        ROUND(CAST(inactive count AS numeric(10,2)) / transactions * 100, 2) AS
       inactive count percent
       FROM
        monthwise_atm_failure
       ORDER BY
        inactive_count_percent DESC;
```

Rows returne	ed (12)							Export	*
Q Search rows							< 1	2 >	1
month	$\nabla$	transactions	▽	inactive_count	$\nabla$	inactive_count_percent			
February		182659		36656		20.07			
January		180195		35953		19.95			
March		209586		41046		19.58			
April		218865		41830		19.11			
May		222418		37679		16.94			
August		217218		36713		16.90			
July		227682		38139		16.75			
lune		225166		36789		16.34			
September		202101		28913		14.31			
October		191667		21780		11.36			

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

```
Query:
```

```
SELECT
 atm number,
 atm manufacturer,
 location,
 SUM(transaction_amount) AS total_transaction_amount
FROM
 atm\_trans.fact\_atm\_trans\ T
INNER JOIN
 atm trans.dim atm A ON T.atm id = A.atm id
INNER JOIN
 atm_trans.dim_location L ON A.atm_location_id = L.location_id
GROUPBY
 atm number,
 atm_manufacturer,
 location
ORDER BY
 total_transaction_amount DESC
LIMIT
 10;
```

Rows returned	Export ▼					
Q. Search rows						
atm_number	▼ atm_manufacturer	∇ location	▼ total_transaction_amount	▽		
39	NCR	Svenstrup	277097637			
20	NCR	Bispensgade	271008803			
24	NCR	Hobro	268289882			
10	NCR	$N\tilde{A}f\tilde{A}$ , rresundby	267379103			
45	NCR	Abildgaard	265639616			
16	NCR	Skive	220677013			
40	Diebold Nixdorf	Frederikshavn	219812287			
41	Diebold Nixdorf	Skagen	214127315			
1	NCR	NÃ∫¦stved	213721117			
48	Diebold Nixdorf	$Br\tilde{A}f\hat{A}$ , $nderslev$	212883099			

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

```
Query:
       WITH card type failure AS (
         SELECT
          card type,
          COUNT(trans id) AS transactions,
          SUM(CASE WHEN atm status = 'Inactive' THEN 1 ELSE 0 END) AS
       inactive count
        FROM
          atm\_trans.fact\_atm\_transF
          atm trans.dim card type C ON F.card type id = C.card type id
        GROUP BY
          card type
       )
       SELECT
        ROUND(CAST(inactive count AS numeric(10,2)) / transactions * 100, 2) AS
       inactive_count_percent
       FROM
         card_type_failure
       ORDER BY
         inactive_count_percent DESC;
```

Rows returned (12)  Q Search rows					] <	Export ▼  ( 1 2 > ⑤	
card_type	$\nabla$	transactions	$\nabla$	inactive_count	▽	inactive_count_percent	▽
Mastercard - on-us		458226		86000		18.77	
VISA		170828		30713		17.98	
Dankort - on-us		143813		24680		17.16	
CIRRUS		17362		2953		17.01	
$H\tilde{A}f\hat{A}_{i}^{i}vekort$ - on-us		62487		10331		16.53	
Dankort		28581		4557		15.94	
MasterCard		400507		63482		15.85	
Visa Dankort - on-us		748805		112972		15.09	
$H\tilde{A}f\hat{A}_{i}^{l}vekort$		8459		1208		14.28	
Visa Dankort		427840		60547		14.15	

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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 number, atm manufacturer, location, CASE WHEN weekday IN ('Sunday', 'Saturday') THEN 1 ELSE 0 END AS weekend flag, COUNT(trans id) AS transactions **FROM** atm trans.fact atm trans T **INNER JOIN** atm trans.dim atm A ON T.atm id = A.atm id **INNER JOIN** atm trans.dim location L ON A.atm location id = L.location id **INNER JOIN** atm\_trans.dim\_date D ON T.date\_id = D.date\_id **GROUPBY** atm number, atm manufacturer, location,

#### Result:

weekend flag

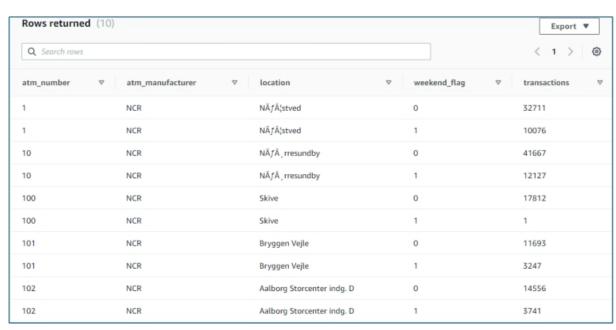
transactions

atm number, atm manufacturer,

location, weekend flag,

ORDER BY

LIMIT 10:



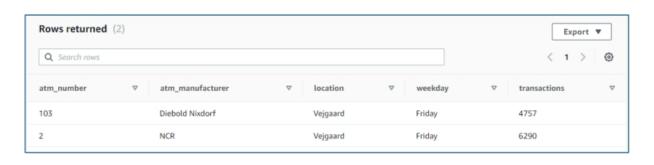
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8. Most active day in each ATMs from location "Vejgaard".

```
Query:
```

```
WITH atm weekday details AS (
 SELECT atm number, atm manufacturer, location, weekday, COUNT(trans id)
AS transactions
 FROM atm_trans.fact_atm_trans T
 INNER JOIN atm trans.dim atm A ON T.atm id = A.atm id
 INNER JOIN atm trans.dim location L ON A.atm location id = L.location id
 INNER JOIN atm trans.dim date D ON T.date id = D.date id
 WHERE location = 'Vejgaard'
 GROUP BY atm number, atm manufacturer, location, weekday
),
max weekday AS (
 SELECT weekday
 FROM atm weekday details
 WHERE transactions = (SELECT MAX(transactions) FROM
atm weekday details)
 LIMIT 1
)
SELECT*
FROM atm_weekday_details
WHERE weekday = (SELECT weekday FROM max weekday)
ORDER BY transactions;
```

#### Result:



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