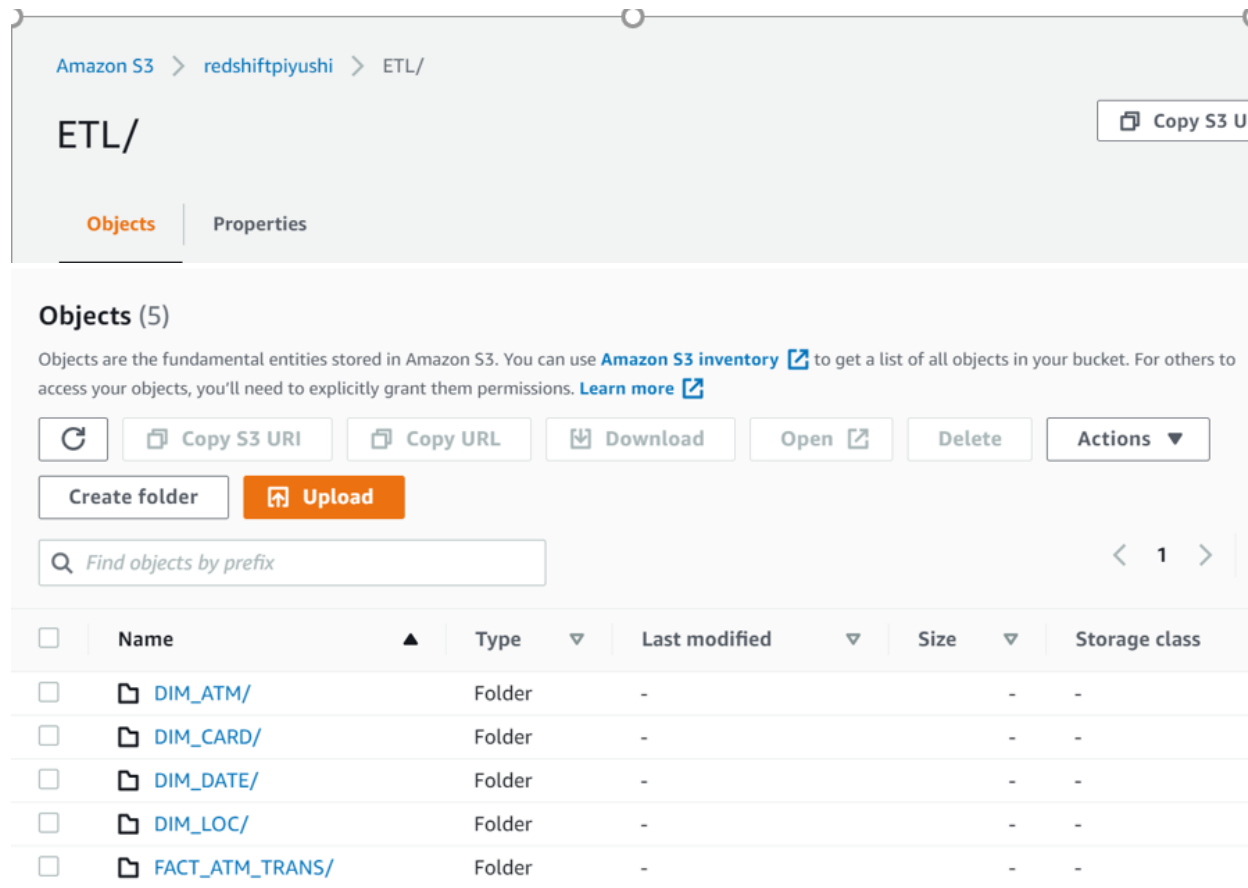


Solving analytical queries on RedShift Cluster



Amazon S3 > redshiftpiyushi > ETL/

ETL/ Copy S3 URI

Objects | Properties

Objects (5)

Objects are the fundamental entities stored in Amazon S3. You can use [Amazon S3 inventory](#) to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. [Learn more](#)

Refresh Copy S3 URI Copy URL Download Open Delete Actions

Create folder Upload

< 1 >

<input type="checkbox"/>	Name	Type	Last modified	Size	Storage class
<input type="checkbox"/>	DIM_ATM/	Folder	-	-	-
<input type="checkbox"/>	DIM_CARD/	Folder	-	-	-
<input type="checkbox"/>	DIM_DATE/	Folder	-	-	-
<input type="checkbox"/>	DIM_LOC/	Folder	-	-	-
<input type="checkbox"/>	FACT_ATM_TRANS/	Folder	-	-	-

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

```
SELECT a.atm_id as atm_number, a.atm_manufacturer, b.atm_location as 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;
```

/redshiftv2/home?region=us-east-1#query-editor:

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Change connection



Query 1



Query 2



Query 3



Query 4





```
1 SELECT a.atm_id as atm_number, a.atm_manufacturer, b.atm_location as location, count(d.trans_id) as
2 transaction_count,
3 count(d.atm_status)
4 from etl.atm a, etl.loc b, etl.FACT_ATM_TRANS d
5 where d.atm_status = 'Inactive'
6 and d.atm_prim_id = a.atm_prim_id
7 and b.location_id = d.location_id
8 group by a.atm_id, a.atm_manufacturer, b.atm_location
9 order by transaction_count desc
10 limit 10;
```

atm_number ▾	atm_manufacturer ▾	location ▾	transaction_count ▾	count
16	NCR	Skive	44043	44043
12	NCR	ÅfjæsterÅfjæ Duus	33982	33982
2	NCR	Vejgaard	33725	33725
88	NCR	Storcenter indg. A	32183	32183
30	NCR	NykÅfÅ, bing Mors	30883	30883
52	NCR	FarsÅfÅ,	27361	27361
50	NCR	Aarhus	23416	23416
29	NCR	Skelagervej 15	20773	20773
81	NCR	Spar KÅfÅ, bmand TornhÅfÅ, j	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;
```

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```
10
11 select c.weather_main, c.total_transaction_count,
12 NVL(d.inactive_count::int,0) as total_inactive_count,
13 round(100.0000*total_inactive_count/c.total_transaction_count,4) as inactive_count_percent
14 from
15 (select a.weather_main, count(a.trans_id) as total_transaction_count from
16 etl.FACT_ATM_TRANS a where a.weather_main != ' ' group by a.weather_main)
17 c left outer join
18 (select b.weather_main, count(b.atm_status) as inactive_count from
19 etl.FACT_ATM_TRANS b where b.atm_status='Inactive' and b.weather_main != ' ' group
20 by b.weather_main) d
21 on c.weather_main=d.weather_main
22 group by c.weather_main,c.total_transaction_count, total_inactive_count
23 order by inactive_count_percent desc;
24
```

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

```
SELECT a.atm_id as atm_number, a.atm_manufacturer, b.atm_location as 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;
```

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awsuser

Change connection



Query 1



Query 2



Query 3



Query 4



2 group by c.weather_main,c.total_transaction_count, total_inactive_count

3 order by inactive_count_percent desc;

4

5 SELECT a.atm_id as atm_number, a.atm_manufacturer, b.atm_location as location, count(d.trans_id) as
transaction_count

6 from etl.atm a, etl.loc b, etl.FACT_ATM_TRANS d

7 where d.atm_prim_id = a.atm_prim_id

8 and b.location_id = d.location_id

9 group by a.atm_id, a.atm_manufacturer, b.atm_location

0 order by transaction_count desc

1 limit 10;

atm_number	atm_manufacturer	location	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
40	Diebold Nixdorf	Frederikshavn	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 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, DECODE(a.month,'01','January'
                        , '02','February'
                        , '03','March'
                        , '04','April'
                        , '05','May'
                        , '06','June'
                        , '07','July'
                        , '08','August'
                        , '09','September'
                        , '10','October'
                        , '11','November'
                        , '12','Decemeber') as 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.year,a.month) c left join
(select a.year, DECODE(a.month,'01','January'
                        , '02','February'
                        , '03','March'
                        , '04','April'
                        , '05','May'
                        , '06','June'
                        , '07','July'
                        , '08','August'
                        , '09','September'
                        , '10','October'
                        , '11','November'
                        , '12','Decemeber') as 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.year,a.month) d
on c.year=d.year and c.month=d.month
order by c.month
;
```

1/redshiftv2/home?region=us-east-1#query-editor:

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Series Scheduled queries

Status Connected database dev user awsuser Change connection

Query 1 Query 2 **Query 3** Query 4 +

```

32
33 select c.year, c.month, c.transaction_count, d.inactive_count,
34 CAST(trunc(100.0*d.inactive_count/c.transaction_count,2) AS NUMERIC(10,4)) as
35 inactive_count_percent from
36 (select a.year, DECODE(a.month,'01','January'
37 , '02','February'
38 , '03','March'
39 , '04','April'
40 , '05','May'
41 , '06','June'
42 , '07','July'
43 , '08','August'
44 , '09','September'
45 , '10','October'
46 , '11','November'
47 , '12','December') as month, a.transaction_count, d.inactive_count
48 from c_transaction c, d_inactive d
49 where c.year = d.year and c.month = d.month)
50 group by year, month
51 order by year, month

```

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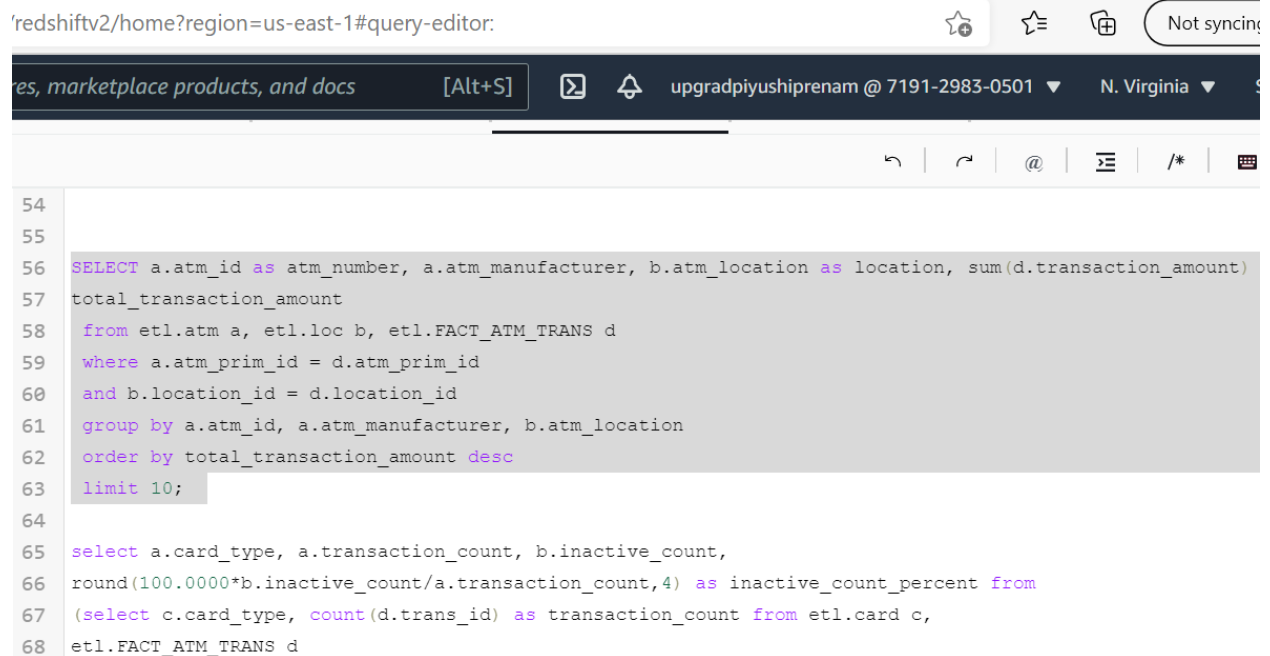
Rows returned (12)

Search rows

year	month	transaction_count	inactive_count	inactive_count_percent
2017	April	218865	41830	19.1100
2017	August	217218	36713	16.9000
2017	Decemeber	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_id as atm_number, a.atm_manufacturer, b.atm_location as location,  
sum(d.transaction_amount) as  
total_transaction_amount  
from etl.atm a, etl.loc b, etl.FACT_ATM_TRANS d  
where a.atm_prim_id = d.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;
```



```
54  
55  
56 SELECT a.atm_id as atm_number, a.atm_manufacturer, b.atm_location as location, sum(d.transaction_amount)  
57 total_transaction_amount  
58 from etl.atm a, etl.loc b, etl.FACT_ATM_TRANS d  
59 where a.atm_prim_id = d.atm_prim_id  
60 and b.location_id = d.location_id  
61 group by a.atm_id, a.atm_manufacturer, b.atm_location  
62 order by total_transaction_amount desc  
63 limit 10;  
64  
65 select a.card_type, a.transaction_count, b.inactive_count,  
66 round(100.0000*b.inactive_count/a.transaction_count,4) as inactive_count_percent from  
67 (select c.card_type, count(d.trans_id) as transaction_count from etl.card c,  
68 etl.FACT_ATM_TRANS d
```

atm_number ▼	atm_manufacturer ▼	location ▼	total_transaction_amount
39	NCR	Svenstrup	277097637
20	NCR	Bispensgade	271008803
24	NCR	Hobro	268289882
10	NCR	NÃfÃ , rresundby	267379103
45	NCR	Abildgaard	265639616
16	NCR	Skive	220677013
40	Diebold Nixdorf	Frederikshavn	219812287
41	Diebold Nixdorf	Skagen	214127315
1	NCR	NÃfÃ stved	213721117
48	Diebold Nixdorf	BrÃfÃ , 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;
```

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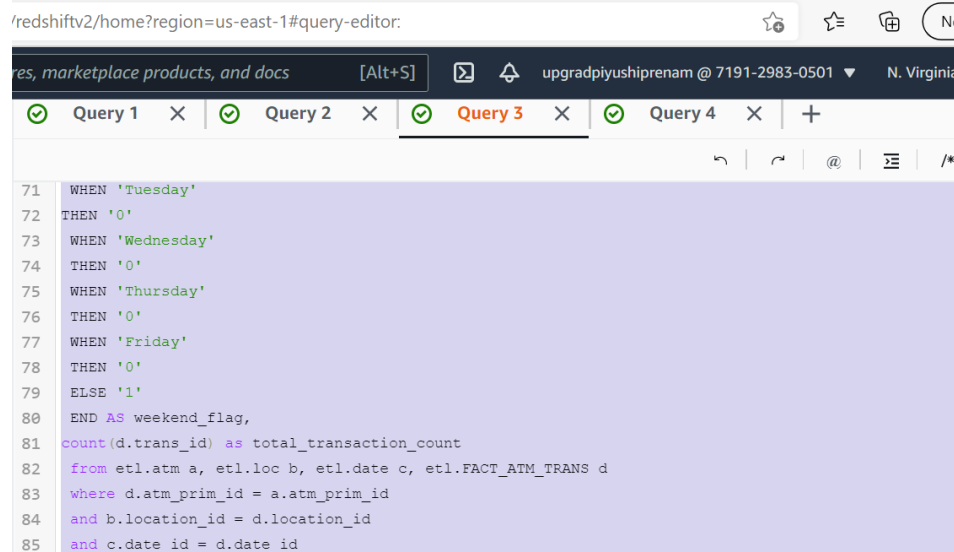
🟢 Query 1 ✕ 🟢 Query 2 ✕ 🟢 Query 3 ✕ 🟢 Query 4 ✕ +

53
54 select a.card_type, a.transaction_count, b.inactive_count,
55 round(100.0000*b.inactive_count/a.transaction_count,4) as inactive_count_percent from
56 (select c.card_type, count(d.trans_id) as transaction_count from etl.card c,
57 etl.FACT_ATM_TRANS d
58 where c.card_type_id = d.card_type_id group by c.card_type)a
59 left join
60 (select c.card_type, count(d.atm_status) as inactive_count from etl.card c,
61 etl.FACT_ATM_TRANS d
62 where c.card_type_id = d.card_type_id and d.atm_status='Inactive' group by
63 c.card_type)b
64 on a.card_type = b.card_type
65 order by inactive_count_percent desc;

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
VisaPlus	1134	150	13.2275
Maestro	530	65	12.2642

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 as atm_number, a.atm_manufacturer, b.atm_location as 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;
```

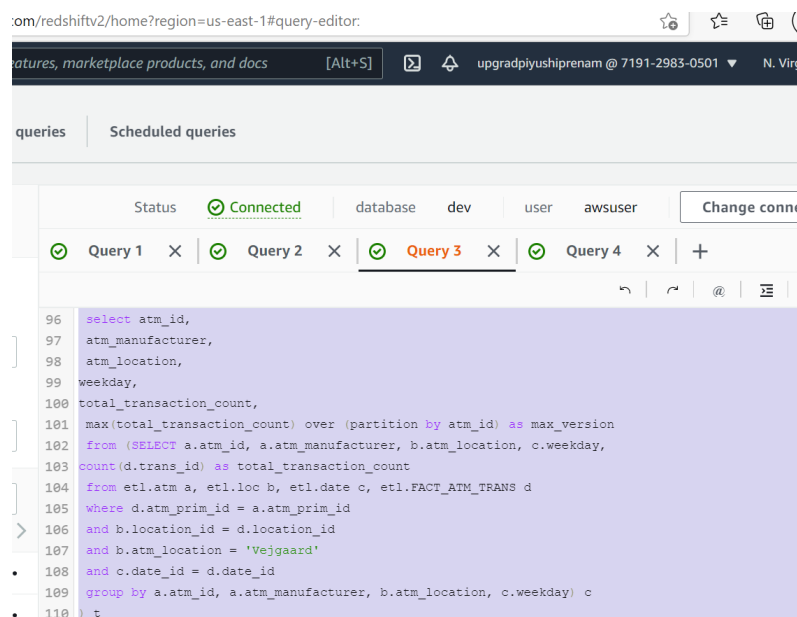


```
71  WHEN 'Tuesday'
72  THEN '0'
73  WHEN 'Wednesday'
74  THEN '0'
75  WHEN 'Thursday'
76  THEN '0'
77  WHEN 'Friday'
78  THEN '0'
79  ELSE '1'
80  END AS weekend_flag,
81  count(d.trans_id) as total_transaction_count
82  from etl.atm a, etl.loc b, etl.date c, etl.FACT_ATM_TRANS d
83  where d.atm_prim_id = a.atm_prim_id
84  and b.location_id = d.location_id
85  and c.date_id = d.date_id
```

atm_number ▾	atm_manufacturer ▾	location ▾	weekend_flag ▾	total_transaction_count ▾
1	NCR	NÃfÃstved	0	32711
1	NCR	NÃfÃstved	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
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"

```
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
order by total_transaction_count;
```



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Rows returned (2)

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atm_number ▼	atm_manufacturer ▼	location ▼	weekday ▼	total_transaction
103	Diebold Nixdorf	Vejgaard	Friday	4757
2	NCR	Vejgaard	Friday	6290