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,f.tcount from
(Select atm_id, count(*) as tcount from atm_trans.fact where atm_status='Inactive' group by atm_id order by count(*) desc limit 10) f, atm_trans.atm a
where f.atm_id=a.atm_id

atm_number ▽	atm_manufacturer ▽	tcount
2	NCR	33725
16	NCR	44043
29	NCR	20773
102	NCR	18297
88	NCR	32183
50	NCR	23416
81	NCR	20148
12	NCR	33982
30	NCR	30883
52	NCR	27361

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

Select weather_main, count(*) as failure_count from atm_trans.fact where atm_status='Inactive' group by weather_main order by count(*) desc

weather_main ▽	failure_count
Clouds	194027
Rain	86017
Clear	85531
Mist	12864
Drizzle	8670
Snow	4813
Fog	3729
	1645
Thunderstorm	361
TORNADO	1

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

Select t.atm_number,t.atm_manufacturer,l.location_text,t.tcount from
 (select a.atm_number,a.atm_manufacturer,a.atm_location_id,f.tcount from
(Select atm_id, count(*) as tcount from atm_trans.fact group by atm_id order by count(*) desc
limit 10) f, atm_trans.atm a
where f.atm_id=a.atm_id) t, atm_trans.location l where t.atm_location_id=l.loc_id order by
tcount desc

atm_number	atm_manufacturer	location_text	tcount
39	NCR	Svenstrup	55380
20	NCR	Bispensgade	54211
10	NCR	NÃƒÂ¸rresundby	53794
24	NCR	Hobro	53378
45	NCR	Abildgaard	53198
16	NCR	Skive	44043
40	Diebold Nixdorf	Frederikshavn	43767
1	NCR	NÃƒÂ¦stved	42787
41	Diebold Nixdorf	Skagen	42732
48	Diebold Nixdorf	BrÃƒÂ¸nderslev	42493

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

Select d.month, sum(failure_count) from
(Select date_id, count(*) as failure_count from atm_trans.fact where atm_status='Inactive' group
by date_id)f, atm_trans.date d
where f.date_id=d.date_id group by d.month order by sum(failure_count) desc

month	sum
April	41830
March	41046
July	38139
May	37679
June	36789
August	36713
February	36656
January	35953
September	28913
October	21780

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 Top 10 ATMs with the highest total withdrawn amount throughout the year

Select t.atm_number,t.atm_manufacturer,l.location_text,t.amount from
 (select a.atm_number,a.atm_manufacturer,a.atm_location_id,f.amount from
(Select atm_id, sum(transaction_amount) as amount from atm_trans.fact where
service='Withdrawal' group by atm_id order by count(*) desc limit 10) f, atm_trans.atm a
where f.atm_id=a.atm_id) t, atm_trans.location l where t.atm_location_id=l.loc_id order by
amount desc

atm_number	atm_manufacturer	location_text	amount
39	NCR	Svenstrup	277097637
20	NCR	Bispensgade	271008803
24	NCR	Hobro	268289882
10	NCR	NÃƒÂ¸rresundby	267379103
45	NCR	Abildgaard	265639616
16	NCR	Skive	220677013
40	Diebold Nixdorf	Frederikshavn	219812287
41	Diebold Nixdorf	Skagen	214127315
1	NCR	NÃƒÂ¦stved	213721117
48	Diebold Nixdorf	BrÃƒÂ¸nderslev	212883099

6. Number of failed ATM transactions across various card types

Select c.cardtype_text,f.failure_count from
(Select card_type_id, count(*) as failure_count from atm_trans.fact where atm_status='Inactive'
group by card_type_id) f , atm_trans.card_type c
where f.card_type_id = c.cardtype_id order by failure_count desc

cardtype_text	failure_count
Visa Dankort - on-us	112972
Mastercard - on-us	86000
MasterCard	63482
Visa Dankort	60547
VISA	30713
Dankort - on-us	24680
HÃƒÂ¦vekort - on-us	10331
Dankort	4557
CIRRUS	2953
H��ƒÂ¦vekort	1208

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 * from (
(Select t.atm_number,t.atm_manufacturer,l.location_text,weekend_flag,t.tcount from
 (select a.atm_number,a.atm_manufacturer,a.atm_location_id,weekend_flag,f.tcount from
(Select atm_id, '1' as weekend_flag ,count(*) as tcount from atm_trans.fact where date_id in
(Select date_id from atm_trans.date where weekday in ('Sunday','Saturday')) group by atm_id
order by count(*) desc limit 10) f, atm_trans.atm a
where f.atm_id=a.atm_id) t, atm_trans.location l where t.atm_location_id=l.loc_id order by
tcount desc)
  union
 (Select t.atm_number,t.atm_manufacturer,l.location_text,weekend_flag,t.tcount from
 (select a.atm_number,a.atm_manufacturer,a.atm_location_id,weekend_flag,f.tcount from
(Select atm_id, '0' as weekend_flag ,count(*) as tcount from atm_trans.fact where date_id in
(Select date_id from atm_trans.date where weekday not in ('Sunday','Saturday')) group by
atm_id order by count(*) desc limit 10) f, atm_trans.atm a
where f.atm_id=a.atm_id) t, atm_trans.location l where t.atm_location_id=l.loc_id order by
tcount desc)) A order by atm_number limit 10

atm_number	atm_manufacturer	location_text	weekend_flag	tcount
1	NCR	NÃƒÂ¦stved	0	32711
1	NCR	NÃƒÂ¦stved	1	10076
10	NCR	NÃƒÂ¸rresundby	1	12127
10	NCR	NÃƒÂ¸rresundby	0	41667
16	NCR	Skive	0	33462
16	NCR	Skive	1	10581
20	NCR	Bispensgade	0	39464
20	NCR	Bispensgade	1	14747
24	NCR	Hobro	1	12183
24	NCR	Hobro	0	41195

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

(Select d.weekday, sum(failure_count) from
(Select date_id ,count(*) as failure_count from atm_trans.fact where atm_status='Inactive' group
by date_id)f, atm_trans.date d
where f.date_id=d.date_id group by d.weekday order by sum(failure_count) desc limit 1)

weekday	sum
Friday	78953