SQL BASED

Credit Card Spending habits In India

By Pravesh Nema

```sql
/* 1- write a query to print top 5 cities with highest spends and their percentage contribution
of total credit card spends */

with cte1 as
(select top 5 city, sum(amount) as total_amount_spent_citywise
from credit_card_transcations
group by city
order by total_amount_spent_citywise desc)
, cte2 as
(select sum(amount) as total_amount
from credit_card_transcations)
select c1.city
, c1.total_amount_spent_citywise
, round(c1.total_amount_spent_citywise / c2.total_amount * 100, 2) as percentage_contribution
from cte1 c1
inner join cte2 c2 on 1=1;
```

110 %

Results | **Messages**

	city	total_amount_spent_citywise	percentage_contribution
1	Greater Mumbai, India	576751476	14.15
2	Bengaluru, India	572326739	14.05
3	Ahmedabad, India	567794310	13.93
4	Delhi, India	556929212	13.67
5	Kolkata, India	115466943	2.83

```sql
/* 2- write a query to print highest spend month and amount spent in that month for each card type
with cte1 as
(select DATEPART(YEAR, transaction_date) as trans_year
, DATEPART(MONTH, transaction_date) as trans_month
, card_type
, sum(amount) as total_amount
from credit_card_transcations
group by DATEPART(YEAR, transaction_date), DATEPART(MONTH, transaction_date), card_type)
, cte2 as
(select *
, DENSE_RANK() over(partition by card_type order by total_amount desc) as drnk
from cte1)
select *
from cte2
where drnk = 1;
```

110 %

Results | Messages

	trans_year	trans_month	card_type	total_amount	drnk
1	2015	1	Gold	55455064	1
2	2014	8	Platinum	57936507	1
3	2013	12	Signature	58799522	1
4	2015	3	Silver	59723549	1

```sql
/* 3- write a query to print the transaction details(all columns from the table) for each card type when
it reaches a cumulative of 1000000 total spends(We should have 4 rows in the o/p one for each card type)
with cte1 as
(select *
, sum(amount) over(partition by card_type order by transaction_date) as cumulative_sum
from credit_card_transcations)
, cte2 as
(select *
, DENSE_RANK() over(partition by card_type order by cumulative_sum) as drnk
from cte1
where cumulative_sum >= 1000000)
select *
from cte2
where drnk = 1;
```

```sql
/* 4- write a query to find city which had lowest percentage spend for gold card type*/
with cte1 as
(select city, sum(amount) as total_gold_amount
from credit_card_transcations
where card_type = 'Gold'
group by city)
, cte2 as
(select city, sum(amount) as total_amount_spent_city_wise
from credit_card_transcations
group by city
)
, cte3 as
(select c1.city
, c1.total_gold_amount
, c2.total_amount_spent_city_wise
, c1.total_gold_amount / c2.total_amount_spent_city_wise * 100 as per_contribution
from cte1 c1
inner join cte2 c2 on c1.city = c2.city)
select top 1 *
from cte3
order by per_contribution;
```

100 %

Results Messages

	city	total_gold_amount	total_amount_spent_city_wise	per_contribution
1	Dhamtari, India	1416	425241	0.332987647004875

```sql
/* 5- write a query to print 3 columns:
city, highest_expense_type , lowest_expense_type (example format : Delhi , bills, Fuel)*/
with cte1 as
(select city, exp_type, sum(amount) as total_amount
from credit_card_transcations
group by city, exp_type)
, cte2 as
(select city
, max(total_amount) as highest_amount_spent
, min(total_amount) as lowest_amount_spent
from cte1
group by city)
select c1.city
, max(case when total_amount = highest_amount_spent then exp_type end) as highest_expense_type
, max(case when total_amount = lowest_amount_spent then exp_type end) as lowest_expense_type
from cte1 c1
inner join cte2 c2 on c1.city = c2.city
group by c1.city
order by c1.city;
```

```sql
/*6- write a query to find percentage contribution of spends by females for each expense typ
with cte1 as
(select exp_type, SUM(amount) as total_amount_spent_female
from credit_card_transcations
where gender = 'F'
group by exp_type)
, cte2 as
(select exp_type, SUM(amount) as total_amount_spent
from credit_card_transcations
group by exp_type
)
select c1.exp_type
, c1.total_amount_spent_female
, c2.total_amount_spent
, c1.total_amount_spent_female / c2.total_amount_spent * 100 as per_contribution
from cte1 c1
inner join cte2 c2 on c1.exp_type = c2.exp_type
order by per_contribution;
```

100 %

▦ Results ▣ Messages

	exp_type	total_amount_spent_female	total_amount_spent	per_contribution
1	Entertainment	358663333	726437536	49.3729075420464
2	Fuel	392282421	789135821	49.710380717846
3	Grocery	365646998	718207923	50.9110226009022
4	Travel	55865530	109255611	51.1328704207237
5	Food	452817279	824724009	54.9053106322263
6	Bills	580035469	907072473	63.9458793277701

```sql
/*7- which card and expense type combination saw highest month over month growth in Jan-2014*/
with cte1 as
(select card_type, exp_type
, DATEPART(YEAR, transaction_date) as trans_year
, DATEPART(MONTH, transaction_date) as trans_month
, sum(amount) as total_amount
from credit_card_transcations
group by card_type, exp_type
, DATEPART(YEAR, transaction_date)
, DATEPART(MONTH, transaction_date))
, cte2 as
(select *
, lag(total_amount, 1) over(partition by card_type, exp_type order by trans_year, trans_month)
as prev_month_trans_amount
from cte1)
, cte3 as
(select *
, (total_amount - prev_month_trans_amount) / prev_month_trans_amount * 100 as per_growth
from cte2
where trans_year = 2014 and trans_month = 1)
select top 1 *
from cte3
order by per_growth desc;
```

100 %

⊞ Results 📑 Messages

	card_type	exp_type	trans_year	trans_month	total_amount	prev_month_trans_amount	per_growth
1	Gold	Travel	2014	1	2092554	1113534	87.9200814703458

```sql
/*8- during weekends which city has highest total spend to total no of transcations ratio*/
select top 1 city
, sum(amount) as total_amount
, count(1) as total_no_of_trans
, sum(amount) / count(1) as ratio
from credit_card_transcations
where DATEPART(WEEKDAY, transaction_date) in ('7', '1')
group by city
order by ratio desc;
```

100 %

⊞ Results 📄 Messages

	city	total_amount	total_no_of_trans	ratio
1	Sonepur, India	299905	1	299905

```sql
/*9 - which city took least number of days to reach its 500th transaction after first transaction in that
with cte1 as
(select city
, min(transaction_date) as trans_start_date
, max(transaction_date) as trans_end_date
, count(1) as total_no_of_trans from credit_card_transcations
group by city)
, cte2 as
(select * from cte1 where total_no_of_trans >= 500)
, cte3 as
(select city, transaction_date
, ROW_NUMBER() over(partition by city order by transaction_date) as rn from credit_card_transcations
where city in (select city from cte2))
, cte4 as
(select c2.city, c2.trans_start_date, c2.trans_end_date, c2.total_no_of_trans
, c3.transaction_date as trans_date_for_500th_trans
from cte2 c2
inner join cte3 c3 on c2.city = c3.city
where c3.rn = 500)
select top 1 city, trans_start_date, trans_date_for_500th_trans
, DATEDIFF(DAY, trans_start_date, trans_date_for_500th_trans) as no_of_days_to_reach_500th_trans
from cte4
order by no_of_days_to_reach_500th_trans;
```

100 %   ◄

⊞ Results 📋 Messages

	city	trans_start_date	trans_date_for_500th_trans	no_of_days_to_reach_500th_trans
1	Bengaluru, India	2013-10-04	2013-12-24	81