SQL Query Solutions for Credit Card Transactions Analysis

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

```
select city, sum(amount) spends ,

round((sum(amount) / (select sum(amount) from credit_card_transcations))*100, 2)
percentage_contribution

from credit_card_transcations

GROUP BY city

ORDER BY spends desc

limit 5 ;
```

month varchar	card_type varchar	amount_spend decimal
January	Platinum	112784373
January	Signature	98919381
January	Silver	109359598
January	Gold	110146204

2- write a query to print highest spend month and amount spent in that month for each card type

```
select monthname(transactions_date) month ,card_type,

sum(amount) amount_spend

from credit_card_transcations

group by month, card_type

having month =

(select monthname(transactions_date) month

from credit_card_transcations

group by month

order by sum(amount) desc limit 1);
```

month varchar	card_type varchar	amount_spend decimal
January	Platinum	112784373
January	Signature	98919381
January	Silver	109359598
January	Gold	110146204

3- write a query to print the transaction details(all columns from the table) for each card type when
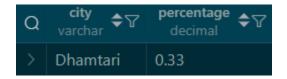
It reaches a cumulative of 1000000 total spends(we should have 4 rows in the o/p one for each card type)

```
with cte1 as (

with cte as (

select transaction_id,city,transactions_date,card_type,exp_type,gender,amount,

sum(amount) over (PARTITION BY card_type ORDER BY transactions_date,transaction_id) cumsum

from credit_card_transcations )

select *,

rank() over(PARTITION BY card_type ORDER BY cumsum) rn

from cte where cumsum >= 1000000 )

select transaction_id,city,transactions_date,card_type,exp_type,gender,amount

from cte1 where rn = 1;
```

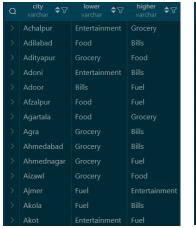| transaction_id int	city varchar	transactions_date date	card_type varchar	exp_type varchar	gender varchar	amount int
1522	Delhi	2013-10-04	Gold	Food	M	281924
191	Ahmedabad	2013-10-05	Platinum	Bills	F	612572
73	Delhi	2013-10-04	Signature	Bills	F	550782
7565	Bengaluru	2013-10-04	Silver	Food	F	205179

4- write a query to find city which had lowest percentage spend for gold card type credit_card_transcations
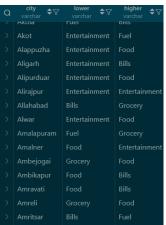
```
with cte as (

select city,card_type,

round((sum(amount) over (PARTITION BY city, card_type ) / sum(amount) over (PARTITION BY city)) *
100, 2) percentage

from credit_card_transcations )

select city,percentage FROM cte where card_type = "Gold"

ORDER BY percentage limit 1;
```

city varchar	percentage decimal
Dhamtari	0.33

5- write a query to print 3 columns: city, highest_expense_type , lowest_expense_type (example format : delhi , bills, fuel)

```
with cte1 as (with cte as(

select distinct city,exp_type,

sum(amount) over (PARTITION BY city, exp_type) spend

from credit_card_transcations )

select city,

case when ROW_NUMBER() over (PARTITION BY city ORDER BY spend ) = 1 then exp_type else Null end
lower ,

case when ROW_NUMBER() over (PARTITION BY city ORDER BY spend desc ) = 1 then exp_type else Null
end higher

from cte),

ctea as (select city,lower from cte1 where lower is not null ),

cteb as ( select city,higher from cte1 where higher is not null )

select ctea.city, ctea.lower, cteb.higher

from ctea inner join cteb on ctea.city = cteb.city ;
```

city	lower	higher
Achalpur	Entertainment	Grocery
Adilabad	Food	Bills
Adityapur	Grocery	Food
Adoni	Entertainment	Bills
Adoor	Bills	Fuel
Afzalpur	Food	Fuel
Agartala	Food	Grocery
Agra	Grocery	Bills
Ahmedabad	Grocery	Bills
Ahmednagar	Grocery	Fuel
Aizawl	Grocery	Food
Ajmer	Fuel	Entertainment
Akola	Fuel	Bills
Akot	Entertainment	Fuel

city	lower	higher
Akola	Fuel	Bills
Akot	Entertainment	Fuel
Alappuzha	Entertainment	Food
Aligarh	Entertainment	Bills
Alipurduar	Entertainment	Food
Alirajpur	Entertainment	Entertainment
Allahabad	Bills	Grocery
Alwar	Entertainment	Food
Amalapuram	Fuel	Grocery
Amalner	Food	Entertainment
Ambejogai	Grocery	Food
Ambikapur	Food	Bills
Amravati	Food	Bills
Amreli	Grocery	Food
Amritsar	Bills	Fuel

city	lower	higher
Bhilwara	Grocery	Fuel
Bhimavaram	Grocery	Bills
Bhiwandi	Bills	Grocery
Bhiwani	Grocery	Fuel
Bhongir	Entertainment	Food
Bhopal	Entertainment	Food
Bhubaneswar	Bills	Fuel
Bhuj	Entertainment	Food
Bikaner	Food	Entertainment
Bilaspur	Grocery	Fuel
Bobbili	Grocery	Food
Bodhan	Bills	Food
Bokaro Steel C	Bills	Grocery
Bongaigaon Ci	Entertainment	Food
Brahmapur	Food	Grocery

Other solution

```
with cte1 as (

with cte as (

select DISTINCT city, exp_type,

sum(amount) over (PARTITION BY city, exp_type) spend

from credit_card_transcations)

select *,

ROW_NUMBER() over (PARTITION BY city order by spend) low ,

ROW_NUMBER() over (PARTITION BY city order by spend desc) high from cte ),

ctelow as (

select city,exp_type lowest_expense_type  from cte1 where low = (select min(low) from cte1)),

ctehigh as (

select city,exp_type highest_expense_type from cte1 where high = (select min(high) from cte1))

select ctehigh.*, ctelow.lowest_expense_type

from ctelow

inner join ctehigh

on ctelow.city = ctehigh.city ;
```

6- write a query to find percentage contribution of spends by females for each expense type

```
with cte as

(select

distinct exp_type,gender,

round((sum(amount) over (PARTITION BY exp_type,gender) / sum(amount) over (PARTITION BY
exp_type) )*100) per

from credit_card_transcations )

select exp_type, per from cte where gender = "F";
```

exp_type varchar	per decimal
Bills	64
Entertainment	49
Food	55
Fuel	50
Grocery	51
Travel	51

7- which card and expense type combination saw highest month over month growth in jan-2014

```
with cte1 as (

with cte as (

select distinct card_type,exp_type,year(transactions_date) yr, month(transactions_date) mnt,

sum(amount) over (PARTITION BY card_type,exp_type,year(transactions_date) ,
month(transactions_date)) exp

from credit_card_transcations )

select *,exp-lag(exp) over(PARTITION BY card_type,exp_type ORDER BY yr,mnt) dif

from cte )

select card_type,exp_type from cte1 where yr = 2014 and mnt = 1 and dif>0

order by dif desc limit 1;
```

card_type	exp_type
varchar	varchar
Platinum	Grocery

8- during weekends which city has highest total spend to total no of transcations ratio

```
with cte as (select distinct city, dayofweek(transactions_date) days, amount,

count(city) over(PARTITION BY city) cnt1

from credit_card_transcations )

select distinct city,

round(sum(amount) over(PARTITION BY city,days) / cnt1 , 2 ) ratio

from cte where days in (6,7)

order by ratio desc limit 1;
```

city	ratio
varchar	decimal
Vellore	256179.00

9- which city took least number of days to reach its 500th transaction after the first transaction in that city

```
with cte as (select city,transactions_date,

ROW_NUMBER() over(PARTITION BY city ORDER BY city,transactions_date) rn

from credit_card_transcations),

ctea as (

select city, transactions_date initial from cte where rn = 1),

cteb as (

select city, transactions_date final from cte where rn = 500)

select ctea.city,

datediff(final,initial) diff

from ctea

right join cteb

on ctea.city = cteb.city

ORDER BY diff limit 1 ;
```

city	diff
varchar	int
Bengaluru	81