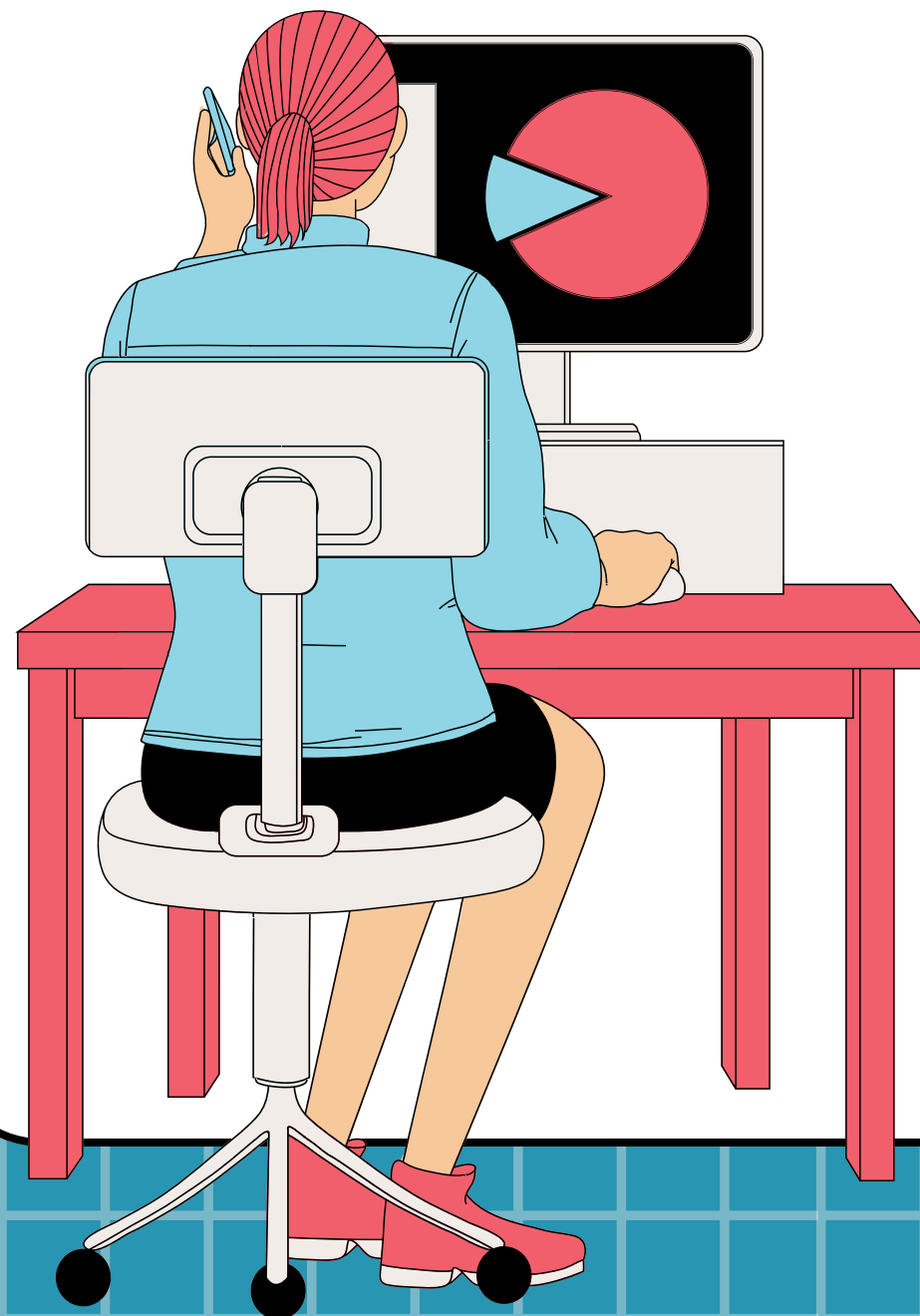


# **CREDIT CARD SPENDING HABITS IN INDIA**

## SQL Project



**Anjali Singh**

# INTRODUCTION

This Dataset contains insight credit card transaction made in India, offering comprehensive look at the spending habits in Indians across the nation.

- City : The City in which transactions took place (strings)
- Date: The date of the transaction. (Date)
- Card Type: The type of the credit card used for the transaction (strings)
- Gender : The gender of the card holder( string)
- Amount : The amount of the transaction (int)
- Exp Type: The type of expense associated with the transaction (string)



Starts with some Basic EDA - total records, finds nulls in a dataset, etc

```
select count(*) from card_transaction  
-- total 26052 records are present in the data
```

```
select * from card_transaction where `index` = null and  
city = null and `card type` = null and `exp type` = null  
and gender = null and amount = null  
  
--there are no null values in the table
```

index	City	Card Type	Exp Type	Gender	Amount	date
0	Delhi, India	Gold	Bills	F	82475	2014-10-29
1	Greater Mumbai, India	Platinum	Bills	F	32555	2014-08-22
2	Bengaluru, India	Silver	Bills	F	101738	2014-08-27
3	Greater Mumbai, India	Signature	Bills	F	123424	2014-04-12
4	Bengaluru, India	Gold	Bills	F	171574	2015-05-05
5	Delhi, India	Silver	Bills	F	100036	2014-09-08
6	Delhi, India	Gold	Bills	F	143250	2015-02-24
7	Greater Mumbai, India	Platinum	Bills	F	150980	2014-06-26
8	Delhi, India	Silver	Bills	F	192247	2014-03-28
9	Delhi, India	Platinum	Bills	F	67032	2014-09-01

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

```
select city, total_spend,  
(total_spend/(select sum(amount) from card_transaction) * 100)  
as percentage_contribution  
from (select city, sum(amount) as total_spend  
      from card_transaction group by city )as city_spends  
order by total_spend desc limit 5  
-- here are the top 5 cities with highest spend and overall percentsge contribution
```

city	total_spend	percentage_contribution
Greater Mumbai, India	576751476	14.1540
Bengaluru, India	572326739	14.0454
Ahmedabad, India	567794310	13.9342
Delhi, India	556929212	13.6675
Kolkata, India	115466943	2.8337

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

```
WITH spent_amt_datewise AS (  
  SELECT YEAR(date) AS trans_year,  
  MONTHNAME(date) AS trans_month,  
  `card type`, (amount) AS spent_amount  
  FROM card_transaction GROUP BY  
trans_year, trans_month, `card type`),  
ranking AS ( SELECT trans_year,  
trans_month, `card type`, spent_amount,  
DENSE_RANK() OVER (PARTITION BY `card type` ORDER BY spent_amount DESC) AS drank  
FROM spent_amt_datewise)  
SELECT trans_year, trans_month, `card type`, spent_amount  
FROM ranking WHERE drank = 1;
```

trans_year	trans_month	card type	spent_amount
2015	January	Gold	55455064
2014	August	Platinum	57936507
2013	December	Signature	58799522
2015	March	Silver	59723549

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 spend sour

```
select city , date, `card type`, `exp type`, gender, amount, cummulative_sum from (select * ,  
dense_rank() over(partition by `card type` order by k.cummulative_sum) as drank  
from (select * , sum(amount) over(partition by `card type` order by date, amount )  
as cummulative_sum from card_transaction ) k  
where k.cummulative_sum >= 1000000) m where m.drunk = 1
```

city	date	card type	exp type	gender	amount	cummulative_sum
Fatehpur Sikri, India	2013-10-04	Gold	Grocery	M	188578	1020560
Lingsugur, India	2013-10-05	Platinum	Grocery	F	104254	1081776
Greater Mumbai, India	2013-10-04	Signature	Food	F	290266	1264181
Bengaluru, India	2013-10-04	Silver	Food	M	182817	1112238

write a query to find city which had lowest percentage spend for gold card type

```
with spend_per_city as( select city, sum(amount) as city_total_spent
from card_transaction where `card type` = 'gold' group by city),
total_spend as(select sum(amount) as total_spent
from card_transaction where `card type` = 'gold' ),
percent_per_city as( select c.city, c.city_total_spent,
(c.city_total_spent/ t.total_spent)* 100 as percentage_spent
from spend_per_city c , total_spend t) select city, city_total_spent, percentage_spent
from percent_per_city order by percentage_spent limit 1
```

	city	city_total_spent	percentage_spent
►	Dhamtari, India	1416	0.0001

write a query to print 3 columns: city, highest\_expense\_type , lowest\_expense\_type

```
with cte_1 as(select city, `exp type` , sum(amount) as spent_amt
from card_transaction group by city, `exp type`),
cte_2 as(select city, min(spent_amt) as lowest_spent_amt,
max(spent_amt) as highest_spent_amt from cte_1 group by city)
select c1.city, min(case when c2.lowest_spent_amt = c1.spent_amt then `exp type` end)
as lowest_exp_type,
max(case when c2.highest_spent_amt = c1.spent_amt then `exp type` end)
as highest_exp_type
from cte_1 as c1 join cte_2 as c2 on c1.city = c2.city group by c1.city order by c1.city
```

city	lowest_exp_type	highest_exp_type
Achalpur, India	Entertainment	Grocery
Adilabad, India	Food	Bills
Adityapur, India	Grocery	Food
Adoni, India	Entertainment	Bills
Adoor, India	Bills	Fuel
Afzalpur, India	Food	Fuel
Agartala, India	Food	Grocery



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

```
with cte_1 as ( select `exp type`, sum(amount) as spent_amt
  from card_transaction where gender = 'F' group by `exp type`),
cte_2 as ( select sum(amount) as ttl_spent
  from card_transaction where gender = 'f' )
select `exp type` , (spent_amt/ttl_spent * 100)
as percent_contri from cte_1 inner join cte_2 on 1 = 1
```

exp type	percent_contri
Bills	26.3018
Food	20.5330
Entertainment	16.2636
Grocery	16.5803
Fuel	17.7881
Travel	2.5332

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

```
with monthly_spend as (  
    select `card type`, `exp type`, year(`date`) as year, month(`date`) as month,  
    sum(amount) as total_amount from card_transaction  
    group by `card type`, `exp type`, year(`date`), month(`date`)),  
growth as (select `card type`, `exp type`, year, month, total_amount,  
    total_amount - lag(total_amount) over (partition by `card type`,  
    `exp type` order by year, month) as month_over_month_growth  
    from monthly_spend)  
select `card type`, `exp type`, total_amount, month_over_month_growth  
from growth where year = 2014 and month = 1  
order by month_over_month_growth desc
```

card type	exp type	total_amount	month_over_month_growth
Platinum	Grocery	12256343	4498781
Gold	Fuel	12281691	2711656
Gold	Food	11511990	1938516
Gold	Entertainment	9940137	1419023
Platinum	Bills	12138233	1003951
Gold	Travel	2092554	979020

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

```
with cte1 as (  
    select city, count(*) as total_transaction, min(date) as min_date  
    from card_transaction  
    group by city  
    having count(*) >= 500),  
cte2 as (select city, date,  
row_number() over (partition by city order by date) as row_nm  
from card_transaction where city in (select city from cte1)),  
cte3 as (select c1.city, c1.min_date, c2.date as date_500  
    from cte1 as c1 join cte2 as c2 on c1.city = c2.city  
    where c2.row_nm = 500)  
select city, min_date as trans_strt_date, date_500 as trans_date,  
datediff(date_500, min_date) as days_to_reach_500 from cte3  
order by days_to_reach_500 limit 1;
```

	city	trans_strt_date	trans_date	days_to_reach_500
►	Bengaluru, India	2013-10-04	2013-12-24	81

## Call to actions

- Allocate additional marketing resources and promotional campaigns to the top 5 cities to capitalize on their high spending patterns.
- Plan targeted promotional offers or campaigns during the highest spending months for each card type to encourage increased spending.
- Investigate the reasons behind the low spending in the identified city and consider targeted marketing strategies or partnerships to increase spending in that location.
- Allocate additional staffing or resources in the city with the highest spend-to-transaction ratio during weekends to capitalize on increased spending opportunities.
- Identify market potential and consider targeted marketing efforts in the city with the fastest transaction growth to capture new customers and increase business growth.
- Develop specific product or service offerings targeted towards females based on their significant contribution to spending in specific expense categories.