EXCELR
Raising Excellence

BANK ANALYTICS

INTRODUCTION

The **Bank Analytics** Project helps us to analyse transactional banking data and find trends and patterns which enable banks to make informed decisions. The data driven decision in banking empower stakeholders to optimize strategies and detect fraudulent activities.

OBJECTIVES

It helps us to understand-

- Consumer spending behaviour
- Borrowing ability
- Loan performance
- Lending capacity of banks
- Risk assessment
- Market trends etc.

Our Analytical Framework: Data and Methods

We analysed Banking Data having customer details, sanctioned loan amount, recovery details, interest earned, delinquent loans and NPAs.

We further analysed customers' transaction details on the basis of credit card and debit card transactions.

We used-

- SQL to fetch data from the databases.
- Power query editor to transform the data.
- Excel to analyse the initial patterns and identify the key performance indicators.
- Power BI and Tableau for visualizing and dashboarding.

KEY PERFORMANCE INDICATORS

KPIs (Bank data)

- Total loans sanctioned
- Total funded amount
- Total collection
- Total revenue
- Total interest recovered

KPIs (Credit & Debit card)

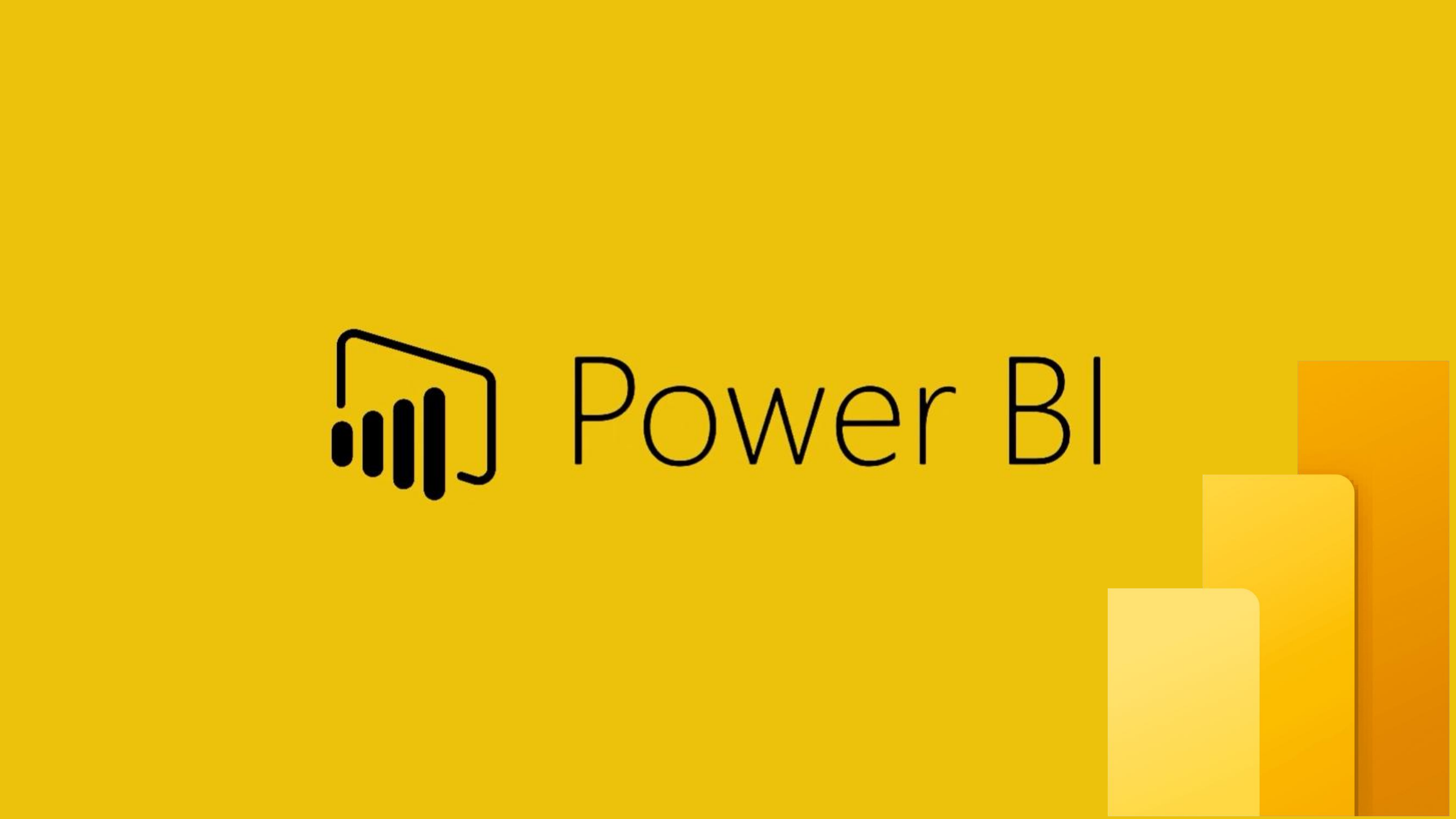
- Total transaction amount
- Account activity ratio
- Net transaction amount
- Credit to debit ratio

INSIGHTS (Bank data)

- The highest amount of loan is given to the people belonging to the age group of 26-35. The probable reason being the young earning class.
- 'E' grade loan amount being the highest of all grades questions the loan distributing criteria.
- Default rate is 1.56% which amounts to 11.24M.
- Hisar, Muzaffarpur, Behror are the branches which are having most number of default loans.
- 'E' grade loans are given on the least interest rates ranges between 4%-8% which is again questioning the lending criteria.
- Approx. 11% loans are delinquent.
- Approx. 65% loans are not verified which is not a good lending practice and are prone to default.
- The maximum loan amount is sanctioned for home loans.
- ST caste is having the least share in loans sanctioned.

INSIGHTS (Credit & Debit cards)

- Transactions are made using Credit Card, Debit Card, and Bank Transfers. Credit Cards seem to be the most common for online and client payments.
- Kotak Mahindra Bank handled the highest transaction volume at 42.83M, closely followed by Axis Bank and SBI, showing strong performance across top banks.
- Suspicious transaction frequency remained stable throughout the year.
- Account activity ratio is extremely low which is 0.00019, which shows that customer accounts are not being used frequently.
- Most of the amount spent based on Description are Utility bill payment, client payments, online shopping, restaurant bills. these are expenses showing regular spending activity
- YOY growth is highest in month of March which is 8.57%.
- January & May months have increase in Suspicious transactions. Could be due to system issues or fraud and needs further checking for the same.

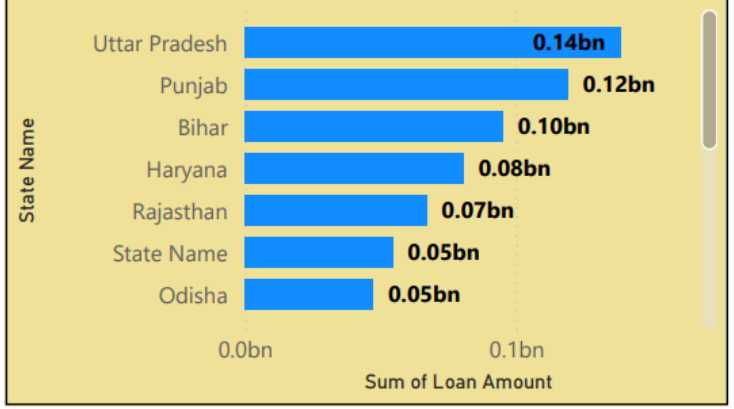

Power BI

BANKING ANALYTICS DASHBOARD

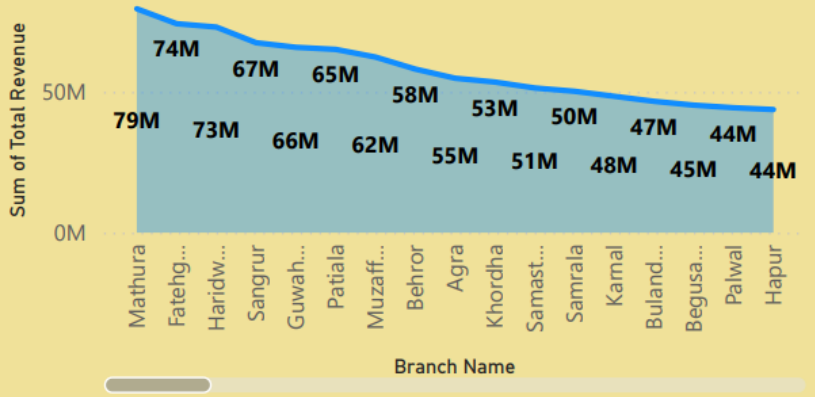
Year: 2016 | 2017 | 2018 | 2019 | 2020

Total Amount Funded	Total Loan Collection	Total Loans	Total Interest
733M	808.38M	65.54K	155.29M

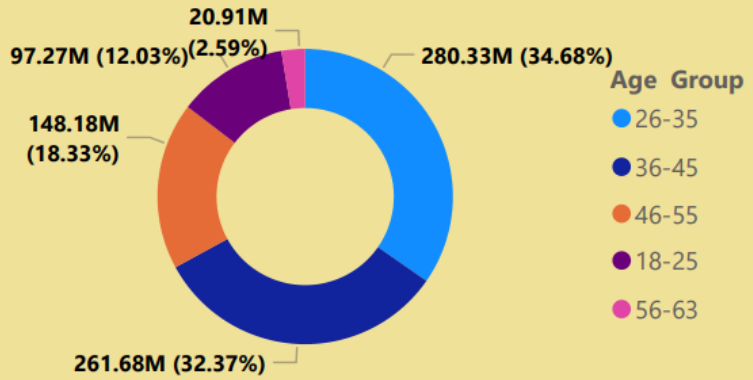
Loan Amount by State Name



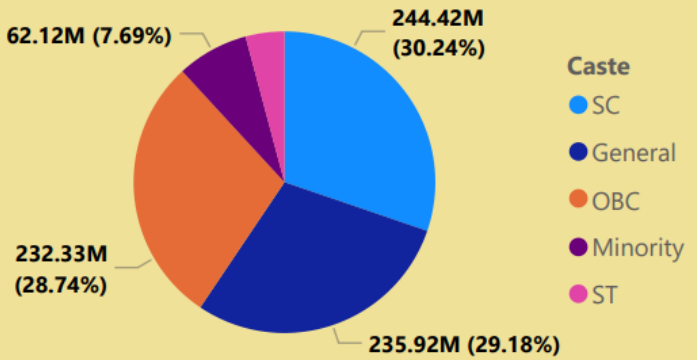
Total Revenue by Branch Name



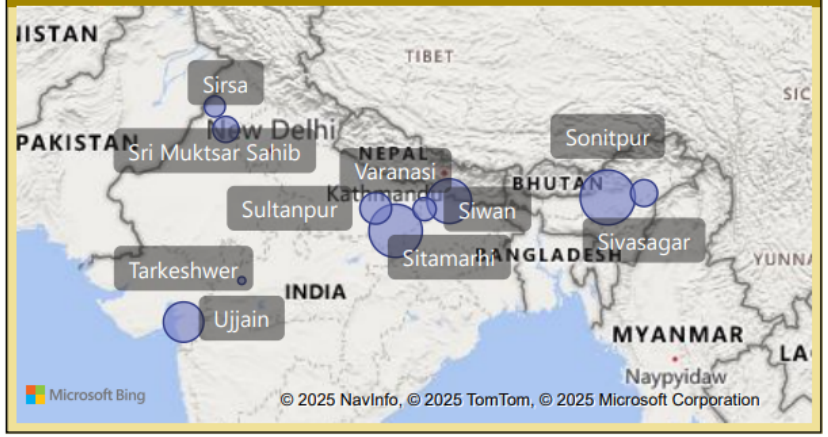
Total Collection by Age Group



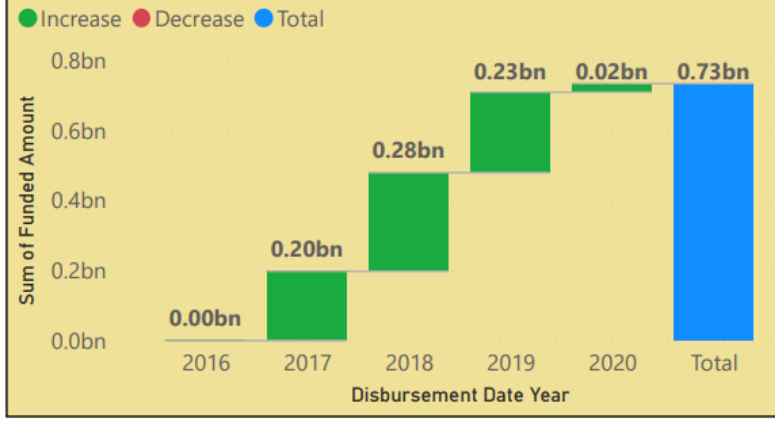
Total Collection by Caste



Total Revenue by City



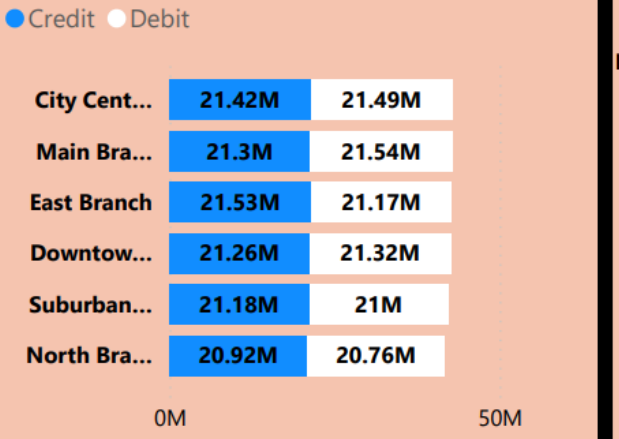
Funded Amount by Year



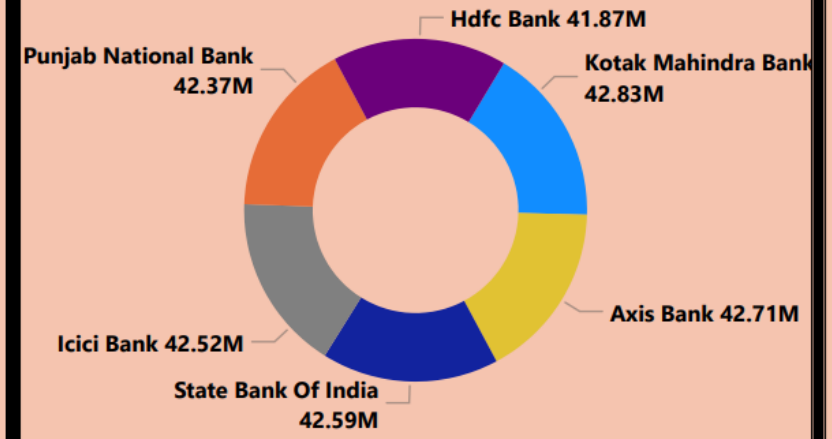
Debit & Credit Bank Analytics Dashboard

Total Amount	Account Activity Ratio	Net Transaction Amount	Credit to Debit Ratio	Bank Name	Branch
254.89M	0.00019	318.12K	100.00%	All	All

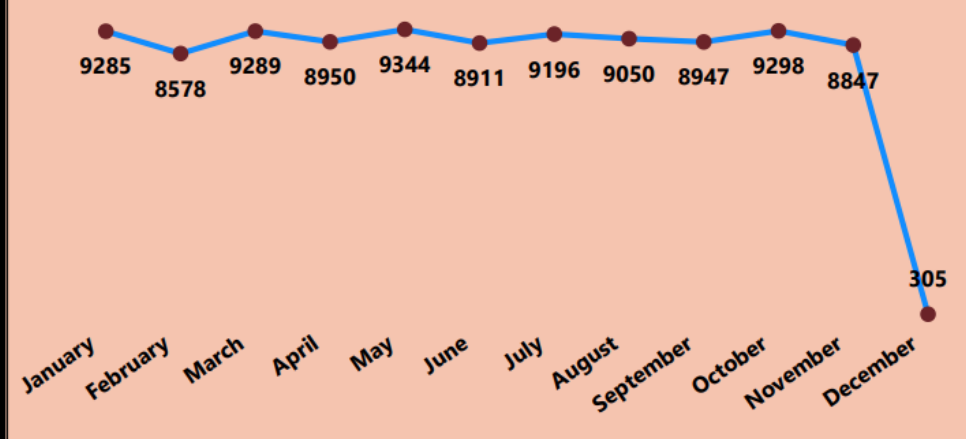
Transaction Volume by Branch



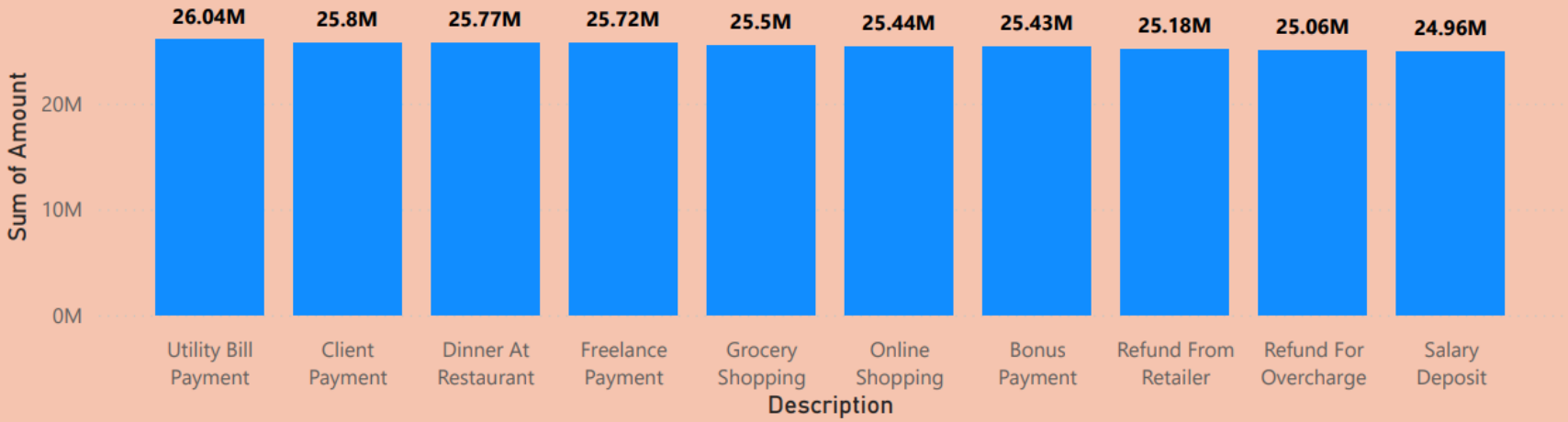
Transaction Volume By Bank



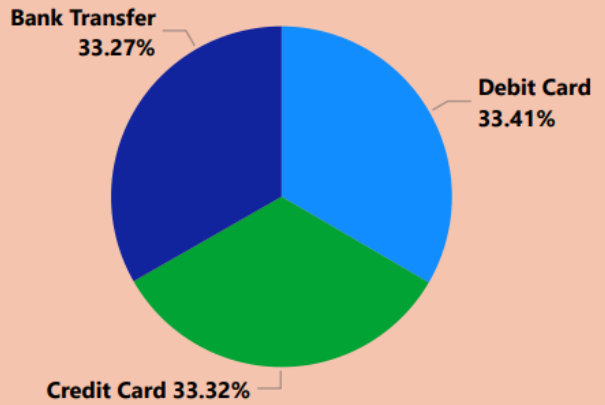
Transaction Per Month



Sum of Amount by Description



Transaction Method Distribution



TABLEAU

BANKING ANALYTICS DASHBOARD

Funded Amount

732.70M

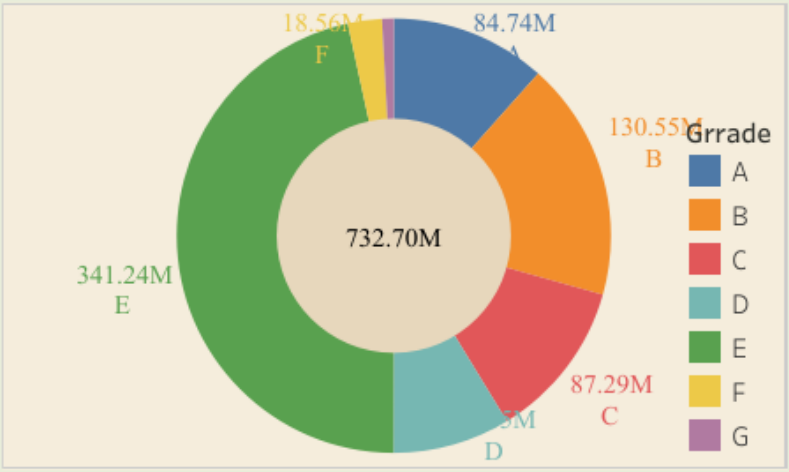
Top 10 Branch Wise Funded Amount

Yearly Funded Amount

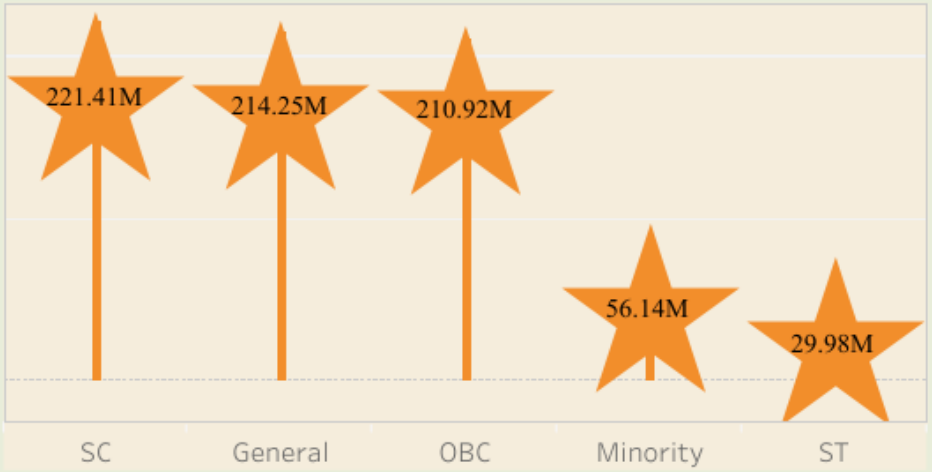
Top N Branch Nam..
10

Measure Parameter
- Loan Amount
- Total Pymnt
- Total Collection
- Total Revenue
- Funded Amount
- Total Fees
- Total Rrec int
- Recoveries
- Count Of Custo..

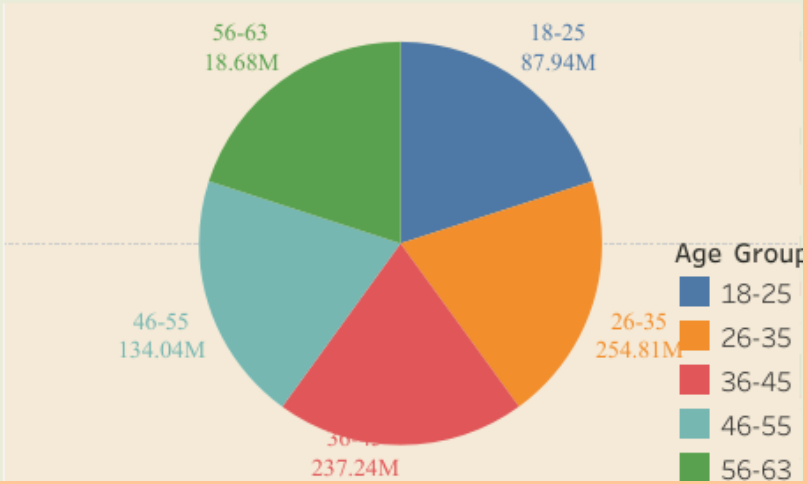
Grade Wise Funded Amount



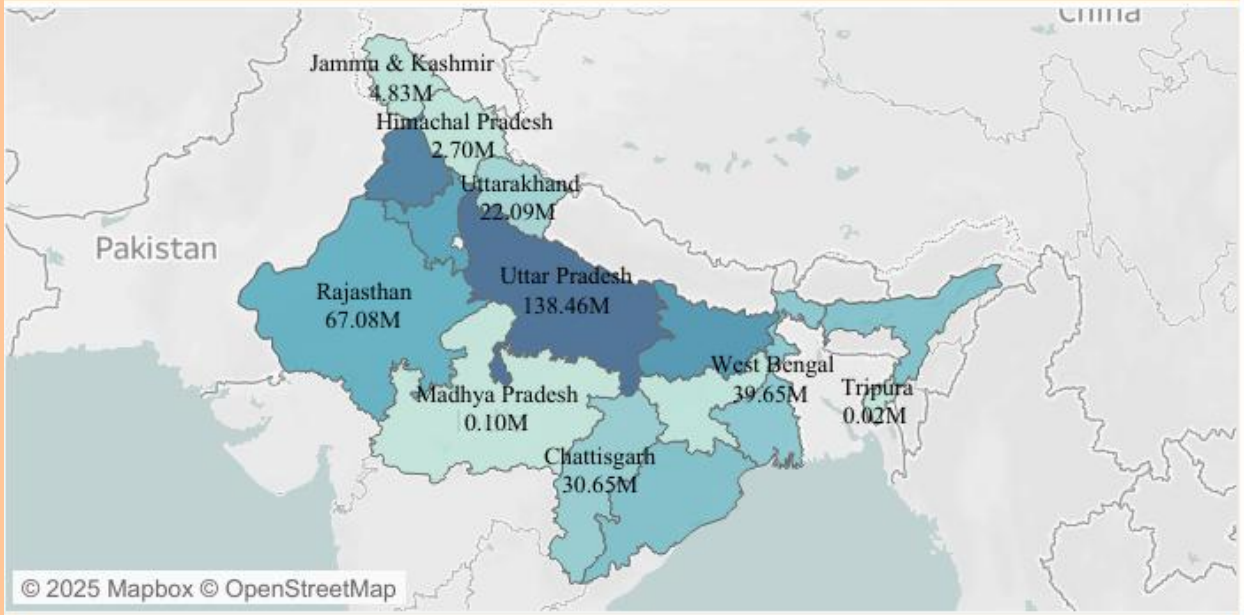
Caste Wise Funded Amount



Agewise Funded Amount

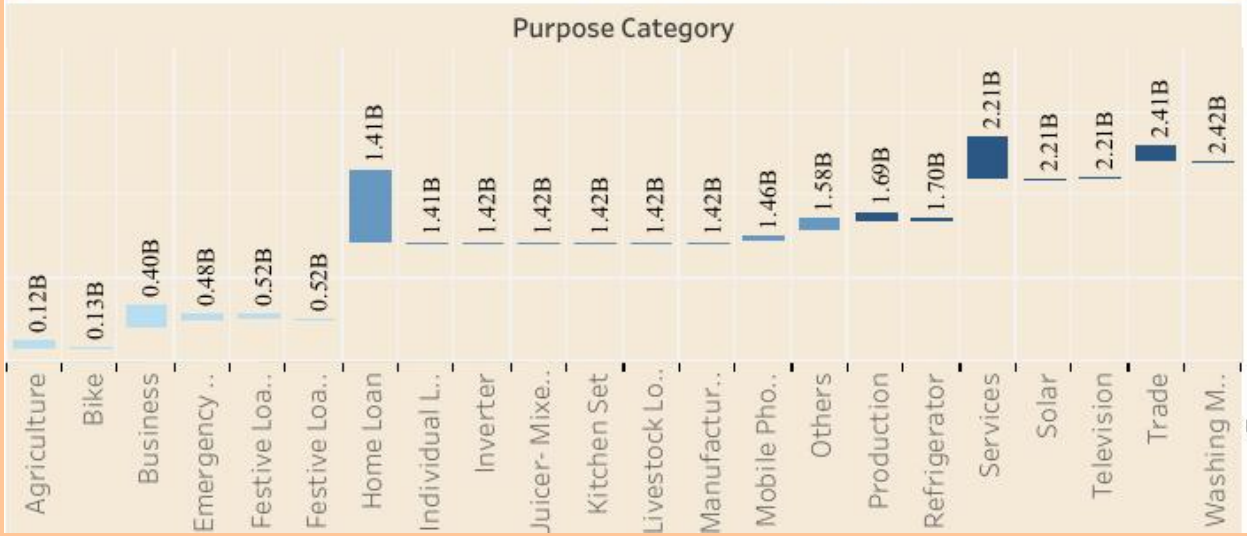


Loans by Location

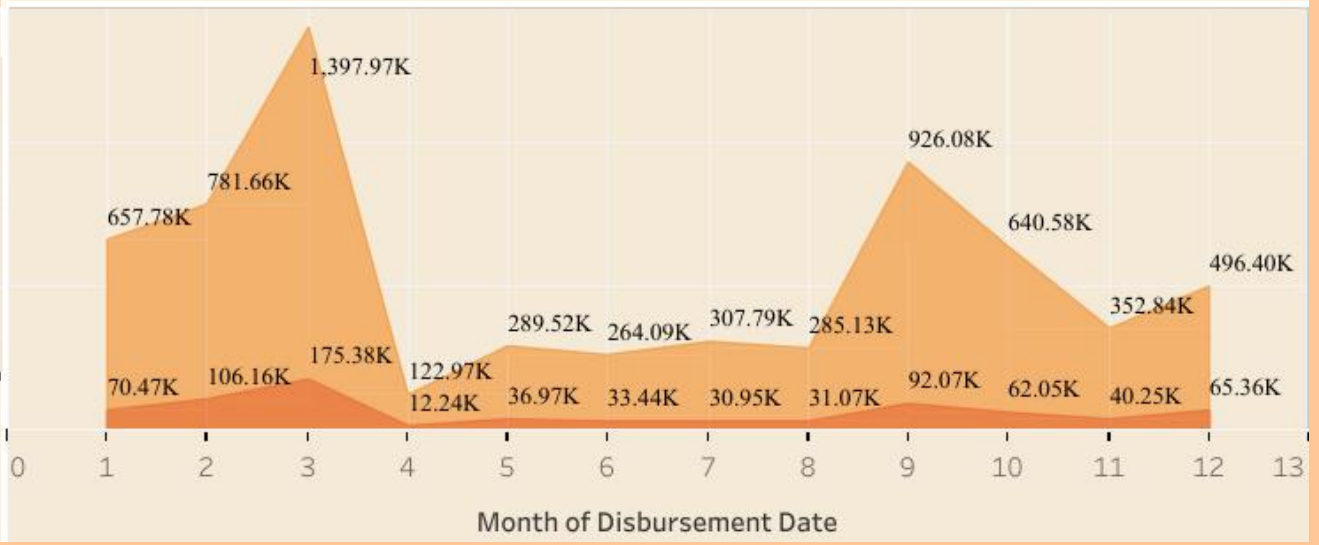


Compare actual loan disbursed vs target

Revenue Flow by Purpose Category



Collection Recovery vs Recovery Trend

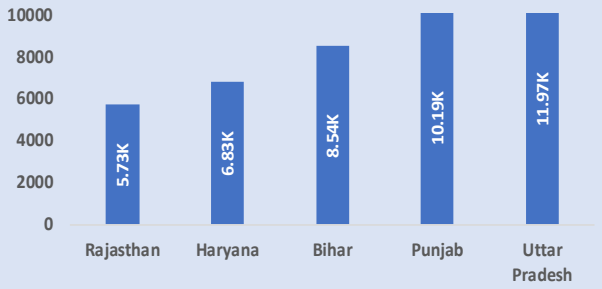


Excel

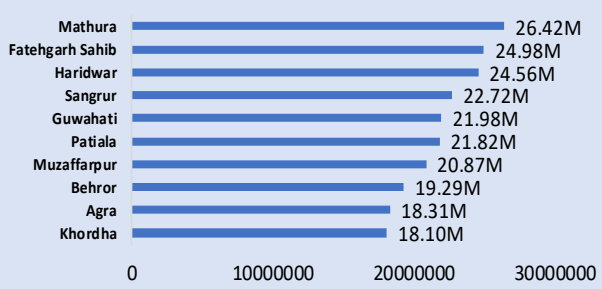
BANK DATA ANALYTICS DASHBOARD

Total Amount Funded	Total Loans	Total Loan Collection	Total Interest	Number of Unverified Loans
733M	66K	808M	155M	43K

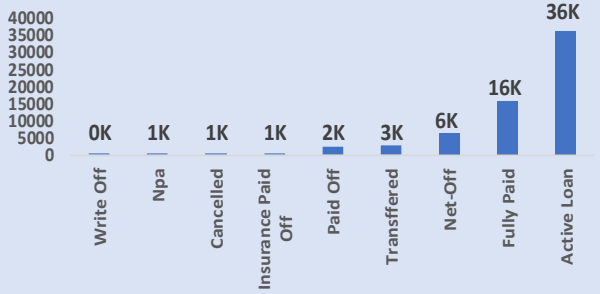
Loans Distribution by State



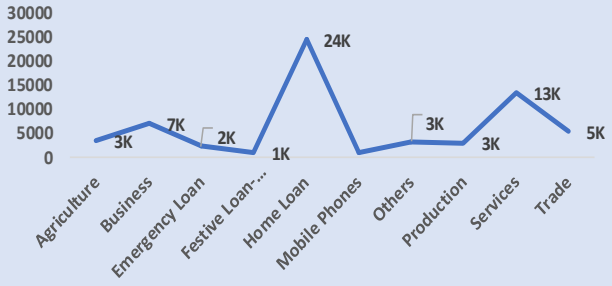
Branch-Wise Revenue Breakdown



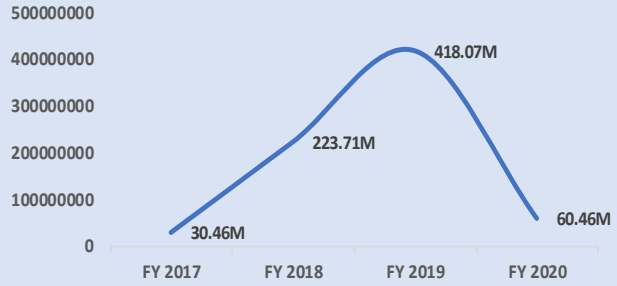
Loan Status Overview



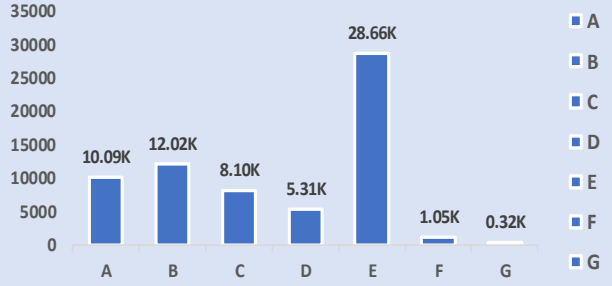
Loan Distribution by Product Group



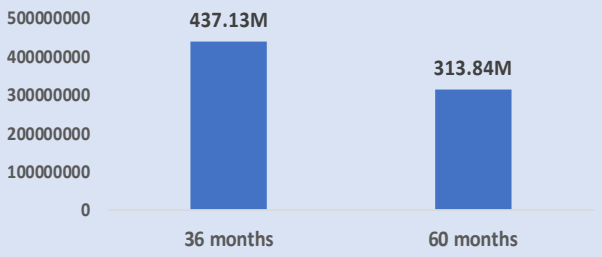
Loan Disbursement Trend Over Time



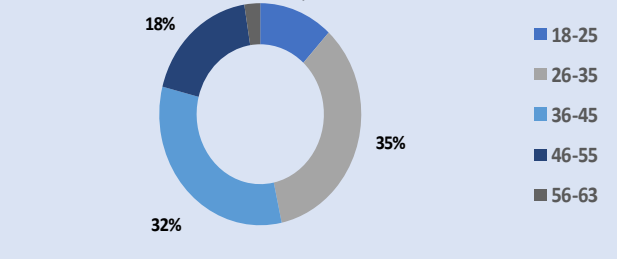
Loans by Credit Grade



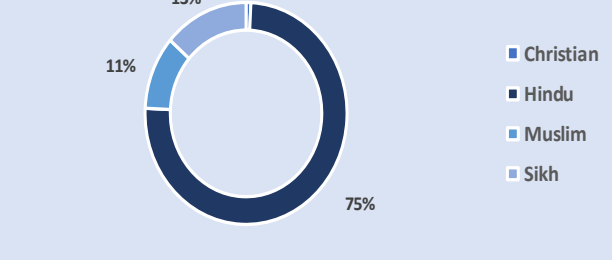
Loan Maturity Distribution



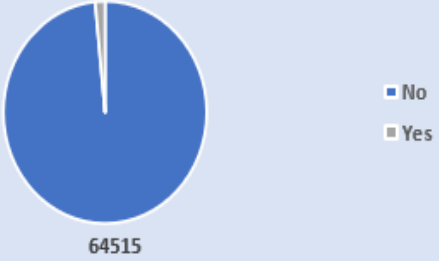
Loan Distribution by Age Group



Loan Distribution by Religion



Total Defaulted Loans



Disbursement ...
- FY 2017
- FY 2018
- FY 2019
- FY 2020

Loan Status
- Active Loan
- Cancelled
- Fully Paid
- Insurance Paid Off
- Net-Off
- Npa
- Paid Off
- Transffered
- Write Off

Branch Name
- Agra
- Ambala
- Amta
- Asansol
- Aska
- Azamgarh
- Ballia
- Bardhaman
- Barnala
- Bathinda
- Beawar
- Begusarai
- Behror
- Bettiah
- Bhadrak
- Bhiwani
- Bihta

DEBIT & CREDIT ANALYTICS DASHBOARD

TOTAL AMOUNT	CREDIT TO DEBIT RATIO	NET TRANSACTION AMOUNT	ACCOUNT ACTIVITY RATIO
255M	100%	0.32M	0.00019

Transaction Date

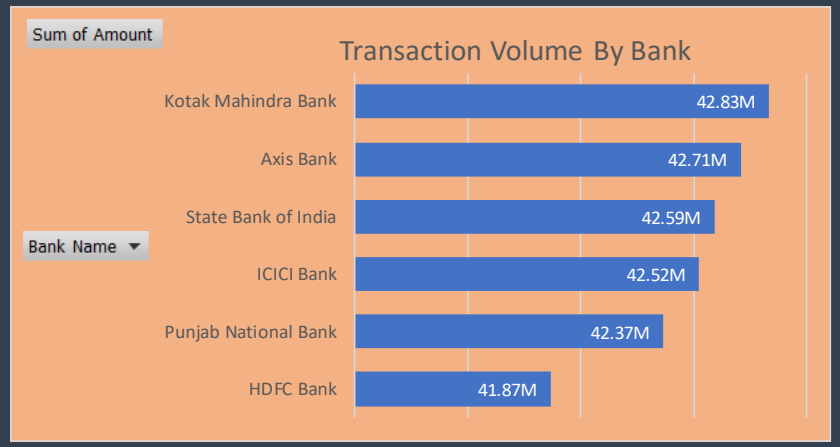
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

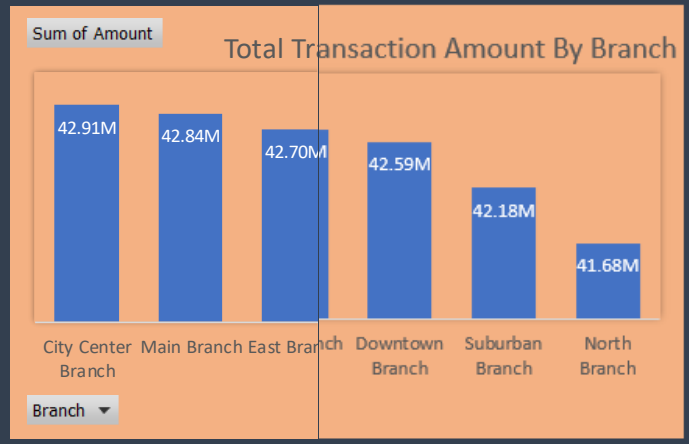
Bank Name
- Axis Bank
- HDFC Bank
- ICICI Bank
- Kotak Mahindra Bank
- Punjab National Bank
- State Bank of India

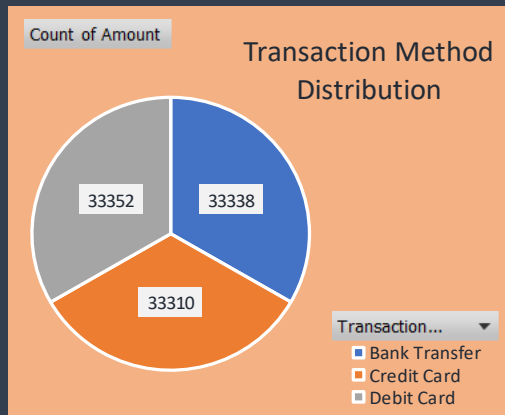
Transaction Type
- Credit
- Debit

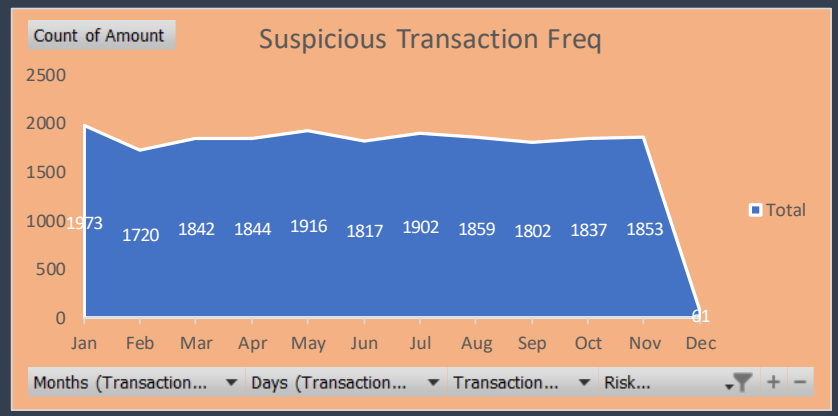
Branch
- City Center Branch
- Downtown Branch
- East Branch
- Main Branch
- North Branch
- Suburban Branch

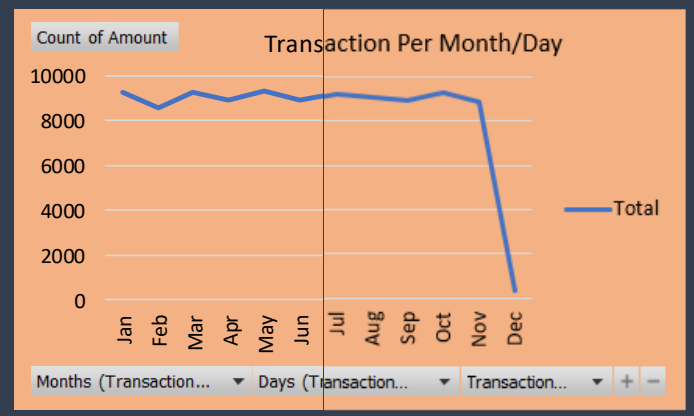
Row Labels	Sum of Amount	Sum of Amount2
Jan	23.96M	
Feb	21.70M	-9.43%
Mar	23.56M	8.57%
Apr	22.73M	-3.54%
May	23.74M	4.45%
Jun	22.74M	-4.18%
Jul	23.51M	3.35%
Aug	23.03M	-2.03%
Sep	22.75M	-1.21%
Oct	23.75M	4.39%
Nov	22.65M	-4.64%
Dec	.78M	-96.57%
Grand Total	254.89M	











MySQL®

```sql
#total transaction amount
select concat(round(sum(amount)/1000000 ), 'M') as
Total_Transaction_Amount from crdr;
```

Total_Transaction_Amount
255M

```sql
#bankwise total credit amount
select bankname, concat(round((sum(amount)/1000000),2),'M')
as total_credit_amount
from crdr where TrType="credit" group by BankName order by total_credit_amount desc;
```

bankname	total_credit_amount
Kotak Mahindra Bank	21.58M
ICICI Bank	21.45M
State Bank of India	21.43M
Axis Bank	21.42M
HDFC Bank	20.99M
Punjab National Bank	20.73M

```sql
#Net Transaction Amount
SELECT
    SUM(CASE WHEN trtype = 'Credit' THEN Amount ELSE 0 END) -
    SUM(CASE WHEN trtype = 'Debit' THEN Amount ELSE 0 END) AS
    net_transaction_amount
FROM crdr;
```

net_transaction_amount
318117.18999764323

```sql
#bankwise total debit amount
select bankname, concat(round((sum(amount)/1000000),2), 'M')
as total_debit_amount
from crdr where TrType="debit" group by BankName order by total_debit_amount desc;
```

bankname	total_debit_amount
Punjab National Bank	21.63M
Axis Bank	21.28M
Kotak Mahindra Bank	21.25M
State Bank of India	21.16M
ICICI Bank	21.08M
HDFC Bank	20.88M

```sql
#bankwise total transaction amount
select bankname, concat(round((sum(amount)/1000000),2), 'M')
as Total_Transaction_Amount
from crdr group by bankname order by total_transaction_amount desc;
```

bankname	Total_Transaction_Amount
Kotak Mahindra Bank	42.83M
Axis Bank	42.71M
State Bank of India	42.59M
ICICI Bank	42.52M
Punjab National Bank	42.37M
HDFC Bank	41.87M

```sql
#bank and branch wise total transaction amount
select bankname, branch, concat(round((sum(amount)/1000000),2), 'M')
as Total_Transaction_Amount
from crdr group by bankname, branch order by BankName;
```

bankname	branch	Total_Transaction_Amount
Axis Bank	City Center Branch	7.25M
Axis Bank	Downtown Branch	7.27M
Axis Bank	East Branch	7.17M
Axis Bank	Main Branch	7.13M
Axis Bank	North Branch	6.82M
Axis Bank	Suburban Branch	7.05M
HDFC Bank	City Center Branch	6.97M

```sql
# highest sbi transactions by transaction type
select trtype, max(amount) as Highest_SBI_Transaction_For
from crdr where BankName= 'state Bank of India' group by TrType;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

trtype	Highest_SBI_Transaction_For
Credit	4999.41
Debit	4997.5

```sql
#transaction amount of the bank having highest customers
select BankName, count(cname) customer_count, concat(round((sum(amount)/1000000),2), 'M')
 as Total_Transaction_Amount from crdr where BankName =
(select BankName from crdr group by BankName order by count(CName) desc limit 1) group by BankName;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

BankName	customer_count	Total_Transaction_Amount
Axis Bank	16777	42.71M

```sql
# top 5 customers by debit
select cname, round(sum(amount),2) debit_amount
from crdr where TrType= 'debit' group by cname order by sum(amount) desc limit 5;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

cname	debit_amount
David Smith	49455.6
Michael Smith	47982.3
Robert Smith	43972.8
Michael Martinez	43014.19
David Johnson	42066.96

PROJECT SUMMARY:

- Analyzed customer behavior, branch performance, and overall banking operations.
- Identified key trends in loan disbursement, repayments, and transaction patterns.
- Built dashboards to show important metrics like credit/debit flow, account activity, and risk alerts.
- Highlighted branches and banks with the highest and lowest performance.
- Detected high-value and unusual transactions to help reduce financial risks.
- Presented insights in an easy-to-understand format using charts, graphs, and KPIs.
- Helped support smarter banking decisions using data.

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