

SQL Report: Loan Credit Analysis

Analyzing loan trends using SQL queries

Dataset description:

This dataset contains records from the year 2021, comprising a total of 38,000 rows of data. It encompasses various aspects such as loans, borrowers, repayment statuses, employment details, and other related metrics. The entire dataset was utilized for the analysis to ensure comprehensive insights and accurate conclusions.

Introduction

This report provides insights from loan data using SQL to calculate key KPIs like total loan amount, total customers, and success rate, highlighting trends and opportunities for improvement.

KPI (key performance indicators)

Total loan Amount

```

1 SELECT
2     SUM(Loan_Amount) AS total_loan_amount
3 FROM
4     loan;

```

	total_loan_amount
▶	418901650

Average DTI

```

1 • SELECT
2     AVG(DTI) AS average_dti
3 FROM
4     loan;
5

```

	average_dti
▶	13.401432495018636

Success_rate

```

1 • SELECT
2     (COUNT(CASE WHEN Repayment = 'fully paid' THEN 1 END) * 100.0 / COUNT(*)) AS succes_rate
3 FROM
4     loan;
5

```

	succes_rate
▶	83.48592

find the top 5 states with the highest loan count, based on the number of unique loans issued.?

```
1 • SELECT Address_State,  
2         COUNT(DISTINCT Member_Id) AS Loan_Count  
3 FROM Loan  
4 GROUP BY Address_State  
5 order by loan_count desc  
6 limit 5  
7
```

	Address_State	Loan_Count
▶	CA	6622
	NY	3576
	FL	2668
	TX	2564
	NJ	1760

find the loan categories with the highest number of unique borrowers?

```
SELECT loan_category,  
       COUNT(DISTINCT Member_Id) AS Loan_Count  
FROM Loan  
GROUP BY loan_category  
order by loan_count desc;  
-
```

	loan_category	Loan_Count
▶	Good Loan	32071
	Bad Loan	5067

Which repayment statuses correspond to the highest total loan amounts?

```

SELECT Repayment,
       sum(loan_amount) as loan_amount
FROM Loan
GROUP BY repayment
order by loan_amount desc;

```

	Repayment	loan_amount
►	Fully Paid	338423600
	Charged Off	62248700
	Current	18229350

Which loan purposes have the highest number of borrowers ?

- ```

SELECT purpose,
 count(distinct member_id) as loan_count
FROM Loan
GROUP BY purpose
order by loan_count desc;

```

|   | purpose            | loan_count |
|---|--------------------|------------|
| ► | Debt consolidation | 17762      |
|   | Credit card        | 4820       |
|   | Other              | 3682       |
|   | Home improvement   | 2754       |
|   | Major purchase     | 2033       |
|   | Small business     | 1462       |

## What is the distribution of total loan amounts and unique borrower counts across different homeownership statuses?

- ```
SELECT Home_Ownership, sum(loan_amount) as loan_amount,  
       count(distinct member_id) as loan_count  
FROM Loan  
GROUP BY Home_Ownership  
order by loan_amount desc;
```

	Home_Ownership	loan_amount	loan_count
►	MORTGAGE	210297875	16542
	RENT	180252725	17858
	OWN	27315875	2641
	OTHER	1025175	96
	NONE	10000	1

How many loans were issued each month based on Issue_Date ?

```

select month(issue_date) as issued_month
,count(*) as loan_count
from loan
group by Issued_month
order by issued_month

```

	issued_month	loan_count
▶	1	2214
	2	2187
	3	2515
	4	2674
	5	2823
	6	3079
	7	3266
	8	3340
	9	3441
	10	3646
	11	3858
	12	4095

What is the average monthly installment by loan category ?

- ```

SELECT country , SUM(Sales) AS Total_Sales,
sum(profit) as total_profit
FROM sales
GROUP BY Country
ORDER BY Total_Sales DESC
LIMIT 5;

```

|   | country       | Total_Sales | total_profit |
|---|---------------|-------------|--------------|
| ▶ | United States | 528084      | 142424       |
|   | China         | 215102      | 50956        |
|   | Australia     | 213714      | 45195        |
|   | India         | 193118      | 43001        |
|   | France        | 156544      | 34172        |

## What is the total amount paid by each member?

- ```
SELECT
    distinct Member_Id,
    SUM(Total_Payment) AS total_payment
FROM
    loan
GROUP BY
    Member_Id
order by member_id
```

Member_Id	total_payment
232542	4699
232722	11810
233817	10504
233903	2836
234130	21864
234342	7831

What is the total loan amount for each debt-to-income ratio range?

- ```
SELECT
 CASE
 WHEN DTI <= 10 THEN '0-10'
 WHEN DTI <= 20 THEN '11-20'
 WHEN DTI <= 30 THEN '21-30'
 ELSE '31+'
 END AS dti_range,
 SUM(Loan_Amount) AS total_loan_amount
FROM
 loan
GROUP BY
 dti_range;
```

|   | dti_range | total_loan_amount |
|---|-----------|-------------------|
| ▶ | 0-10      | 129268025         |
|   | 21-30     | 81103125          |
|   | 11-20     | 208530500         |

**What are the top 5 employment statuses with the highest total loan amounts?**

```

SELECT
 Emp_status,
 SUM(Loan_Amount) AS total_loan_amount
FROM
 loan
GROUP BY
 Emp_status
ORDER BY
 total_loan_amount DESC
LIMIT 5;

```

|   | Emp_status        | total_loan_amount |
|---|-------------------|-------------------|
| ▶ | US Army           | 2644150           |
|   | Bank of America   | 1593300           |
|   | AT&T              | 1035075           |
|   | IBM               | 962875            |
|   | Kaiser Permanente | 899200            |

**What is the count of loan repayment statuses for each loan duration ?**



```

1 • SELECT
2 Loan_time,
3 Repayment,
4 COUNT(*) AS repayment_count
5 FROM
6 loan
7 GROUP BY
8 Loan_time, Repayment
9 order by loan_time desc

```

|   | Loan_time | Repayment   | repayment_count |
|---|-----------|-------------|-----------------|
| ▶ | 60 months | Charged Off | 2216            |
|   | 60 months | Current     | 1066            |
|   | 60 months | Fully Paid  | 6779            |
|   | 36 months | Charged Off | 2851            |
|   | 36 months | Fully Paid  | 24226           |

## Conclusion

This analysis, using 38,000 records from the year 2021, delivers key insights into various aspects of loan performance, customer behavior, and regional trends. By examining factors like loan amounts, repayment statuses, employment status, and debt-to-income ratios, the findings offer a clear understanding of how different customer segments and loan categories perform across various regions. This analysis empowers businesses to make data-driven decisions, develop targeted strategies for optimizing loan offerings, and enhance overall financial management by focusing on high-performing segments and identifying areas for improvement.