# BANK LOAN REPORT QUREY DOCUMENTS

..... By Kiran Sangamnere

## DASHBOARD 1: SUMMARY

### KPI'S:

### 1. Total Loan Applications:

```
select COUNT(id) as Total_Loan_Application from [Bank Loan DB].[dbo].[Bank_Loan_Data];
```

| Total_Loan_Application |
|---|
| 38576 |

### 2. MTD Loan Applications (Month to Date Application):

```
select COUNT(id) as MTD_Total_Loan_Application from [Bank Loan DB].[dbo].[Bank_Loan_Data]
where MONTH(issue_date) = 12 and YEAR(issue_date) = 2021;
```

| MTD_Total_Loan_Application |
|---|
| 4314 |

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### 3. PMTD Loan Applications (Previous Month Total Loan Application):

```
select COUNT(id) as PMTD_Total_Loan_Application from
[Bank Loan DB].[dbo].[Bank_Loan_Data]
where MONTH(issue_date) = 11 and YEAR(issue_date) = 2021;
```

| PMTD_Total_Loan_Application |
|---|
| 4035 |

## To create Dynamic:

```
CREATE PROCEDURE GetTotalLoanApplication
    @Month INT,
    @Year INT
AS
BEGIN
    SELECT SUM(id) AS PMTD_Total_Loan_Appication
    FROM [Bank Loan DB].[dbo].[Bank_Loan_Data]
    WHERE MONTH(issue_date) = @Month AND YEAR(issue_date) = @Year;
END
EXEC GetTotalLoanApplication @Month = 9, @Year = 2021;
```

----- **Here we can change the Month and year**

## 4. Total Funded Amount:

```
select SUM(loan_amount) as Toatal_Funded_Amount from

[Bank Loan DB].[dbo].[Bank_Loan_Data];
```

| Toatal_Funded_Amount |
| --- |
| 435757075 |

## 5. (MTD) Total Funded Amount (Month to Date Total Funded Amount):

```
select SUM(loan_amount) as MTD_Total_Funded_Amount from
[Bank Loan DB].[dbo].[Bank_Loan_Data]
where MONTH(issue_date) = 12 and YEAR(issue_date) = 2021;
```

| MTD_Total_Funded_Amount |
| --- |
| 53981425 |

## 6. (PMTD) Total Funded Amount (Previous Month Total Funded Application):

```
select SUM(loan_amount) as PMTD_Total_Funded_Amount from
[Bank Loan DB].[dbo].[Bank_Loan_Data]
where MONTH(issue_date) = 11 and YEAR(issue_date) = 2021;
```

| PMTD_Total_Funded_Amount |
| --- |
| 47754825 |

## To create Dynamic:

```
CREATE PROCEDURE GetTotalFundedAmount
    @Month INT,
    @Year INT
AS
BEGIN
    SELECT SUM(loan_amount) AS PMTD_Total_Funded_Amount
    FROM [Bank Loan DB].[dbo].[Bank_Loan_Data]
    WHERE MONTH(issue_date) = @Month AND YEAR(issue_date) = @Year;
END
EXEC GetTotalFundedAmount @Month = 9, @Year = 2021;
```

----- **Here we can change the Month and year.**

| PMTD_Total_Funded_Amount |
| --- |
| 40907725 |

## 7. Total Amount Received:

```
select SUM(total_payment) as Total_Amount_Received from

[Bank Loan DB].[dbo].[Bank_Loan_Data];
```

| Total_Amount_Received |
|---|
| 473070933 |

## 8. (MTD) Total Amount Received:

```
select SUM(total_payment) as MTD_Total_Amount_Received from
[Bank Loan DB].[dbo].[Bank_Loan_Data]
where MONTH(issue_date) = 12 and YEAR(issue_date) = 2021;
```

| MTD_Total_Amount_Received |
|---|
| 58074380 |

## 9. (PMTD) Total Amount Received:

```
select SUM(total_payment) as PMTD_Total_Amount_Received from
[Bank Loan DB].[dbo].[Bank_Loan_Data]
where MONTH(issue_date) = 11 and YEAR(issue_date) = 2021;
```

| PMTD_Total_Amount_Received |
|---|
| 50132030 |

## 10. Avg Interest Rate:

```
select AVG(int_rate)* 100 as Avg_Interest_Rate from [Bank Loan DB].dbo.Bank_Loan_Data;
```

**we can reduce decimal points using this function**

**1. Round**

**2. Format**

**3. Decimal**

| Avg_Interest_Rate |
|---|
| 12.0488314172048 |

```
select Round(AVG(int_rate),4)* 100 as Avg_Interest_Rate from

[Bank Loan DB].dbo.Bank_Loan_Data;
```

| Avg_Interest_Rate |
|---|
| 12.05 |

## 11. MTD Avg Interest Rate:

```
select Round(avg(int_rate),4)*100 as MTD_Avg_interest_rate from
[Bank Loan DB].[dbo].[Bank_Loan_Data]
where MONTH(issue_date) = 12 and YEAR(issue_date) = 2021;
```

| MTD_Avg_interest_rate |
|---|
| 12.36 |

## 12. PMTD Avg Interest Rate:

```
select Round(avg(int_rate),4)*100 as PMTD_Avg_interest_rate from
[Bank Loan DB].[dbo].[Bank_Loan_Data]
where MONTH(issue_date) = 11 and YEAR(issue_date) = 2021;
```

| PMTD_Avg_interest_rate |
|---|
| 11.94 |

## 13. Avg Dti (Debt to Income Ratio):

```
select Round(AVG(dti),4)* 100 as Avg_Dti_rate from [Bank Loan DB].dbo.Bank_Loan_Data;
```

| Avg_Dti_rate |
|---|
| 13.33 |

## 14. (MTD) Avg Dti (Debt to Income Ratio):

```
select Round(avg(dti),4)*100 as MTD_Avg_dti_rate from
[Bank Loan DB].[dbo].[Bank_Loan_Data]
where MONTH(issue_date) = 12 and YEAR(issue_date) = 2021;
```

| MTD_Avg_dti_rate |
|---|
| 13.67 |

## 15. (PMTD) Avg Dti (Debt to Income Ratio):

```
select Round(avg(dti),4)*100 as PMTD_Avg_dti_rate from
[Bank Loan DB].[dbo].[Bank_Loan_Data]
where MONTH(issue_date) = 11 and YEAR(issue_date) = 2021;
```

| PMTD_Avg_dti_rate |
|---|
| 13.3 |

# Good Loan:

## 1. Good Loan Application:

```
select COUNT(loan_status)as Good_loan_Application from [Bank Loan DB].dbo.Bank_Loan_Data
where loan_status='Fully Paid' or loan_status='Current';
```

| Good_loan_Application |
|---|
| 33243 |

## 2. Good Loan Application Percentage:

```
select
    (COUNT(case when loan_status='Fully Paid' or loan_status='Current' then id end) *100)
      /
      COUNT(id) as Good_Loan_Percentage
from [Bank Loan DB].dbo.Bank_Loan_Data;
```

| Good_Loan_Percentage |
|---|
| 86 |

## 3. Good Loan Founded Amount:

```
select sum(loan_amount)as Good_loan_Funded_Amount from [Bank Loan DB].dbo.Bank_Loan_Data
where loan_status='Fully Paid' or loan_status='Current';
```

| Good_loan_Funded_Amount |
|---|
| 370224850 |

## 4. Good Loan Total Received Amount:

```
select sum(total_payment)as Good_loan_Total_Received_Amount from
[Bank Loan DB].dbo.Bank_Loan_Data
where loan_status='Fully Paid' or loan_status='Current';
```

| Good_loan_Total_Received_Amount |
|---|
| 435786170 |

# Bad Loan Issued:

## 1. Bad Loan Application:

```
select COUNT(loan_status)as Bad_loan_Application from [Bank Loan DB].dbo.Bank_Loan_Data
where loan_status='Charged off';
```

| Bad_loan_Application |
| --- |
| 5333 |

## 2. Bad Loan Application Percentage:

```
select
    (COUNT(case when loan_status='Charged off' then id end) *100)
      /
      COUNT(id) as bad_Loan_Percentage
from [Bank Loan DB].dbo.Bank_Loan_Data;
```

| bad_Loan_Percentage |
| --- |
| 13 |

## 3. Bad Loan Founded Amount:

```
select sum(loan_amount)as Bad_loan_Funded_Amount from [Bank Loan DB].dbo.Bank_Loan_Data
where loan_status='Charged off';
```

| Bad_loan_Funded_Amount |
| --- |
| 65532225 |

## 4. Bad Loan Total Received Amount:

```
select sum(total_payment)as bad_loan_Total_Received_Amount from
[Bank Loan DB].dbo.Bank_Loan_Data
where loan_status='Charged off';
```

| bad_loan_Total_Received_Amount |
| --- |
| 37284763 |

## 1. Loan Status:

```
select
loan_status,
COUNT(id) as Loan_Count,
SUM(loan_amount) as Total_Funded_Amount,
SUM(total_payment) as Total_Amount_Received,
Round(avg(int_rate),4)*100 as Avg_Interest_Rate,
Round(avg(dti),4)*100 as Avg_DTI
from [Bank Loan DB].dbo.Bank_Loan_Data
group by loan_status;
```

| | loan_status | Loan_Count | Total_Funded_Amount | Total_Amount_Received | Avg_Interest_Rate | Avg_DTI |
|---|---|---|---|---|---|---|
| 1 | Fully Paid | 32145 | 351358350 | 411586256 | 11.64 | 13.17 |
| 2 | Charged Off | 5333 | 65532225 | 37284763 | 13.88 | 14 |
| 3 | Current | 1098 | 18866500 | 24199914 | 15.1 | 14.72 |

## 2. MTD Loan Status:

```
select
loan_status,
SUM(loan_amount) as MTD_Total_Funded_Amount,
SUM(total_payment) as MTD_Total_Amount_Received
from [Bank Loan DB].dbo.Bank_Loan_Data
where MONTH(issue_date)=12  and  YEAR(issue_date) = 2021
group by loan_status;
```

| | loan_status | MTD_Total_Funded_Amount | MTD_Total_Amount_Received |
|---|---|---|---|
| 1 | Fully Paid | 41302025 | 47815851 |
| 2 | Charged Off | 8732775 | 5324211 |
| 3 | Current | 3946625 | 4934318 |

# DASHBOARD 2: OVERVIEW

## 1. Monthly Trends By Issue Date:

```
select
 MONTH(issue_date) as Month_Number,
 DATENAME(Month,issue_date) as Month_Name,
 COUNT(id) as Total_Loan_Application,
 SUM(loan_amount) as Total_Funded_Amount,
 SUM(total_payment) as Total_Received_Amount
from [Bank Loan DB].dbo.Bank_Loan_Data
group by MONTH(issue_date), DATENAME(Month,issue_date)
order by MONTH(issue_date);
```

| Month_Number | Month_Name | Total_Loan_Application | Total_Funded_Amount | Total_Received_Amount |
|---|---|---|---|---|
| 1 | January | 2332 | 25031650 | 27578836 |
| 2 | February | 2279 | 24647825 | 27717745 |
| 3 | March | 2627 | 28875700 | 32264400 |
| 4 | April | 2755 | 29800800 | 32495533 |
| 5 | May | 2911 | 31738350 | 33750523 |
| 6 | June | 3184 | 34161475 | 36164533 |
| 7 | July | 3366 | 35813900 | 38827220 |
| 8 | August | 3441 | 38149600 | 42682218 |
| 9 | September | 3536 | 40907725 | 43983948 |
| 10 | October | 3796 | 44893800 | 49399567 |
| 11 | November | 4035 | 47754825 | 50132030 |
| 12 | December | 4314 | 53981425 | 58074380 |

## 2. Regional Analysis by State:

```
select
 address_state,
 COUNT(id) as Total_Loan_Application,
 SUM(loan_amount) as Total_Funded_Amount,
 SUM(total_payment) as Total_Received_Amount
from [Bank Loan DB].dbo.Bank_Loan_Data
group by address_state
order by SUM(loan_amount) desc;
```

- We can also Order by/ sort by COUNT(id) to show who takes more Loan applications based on Address:

| | address_state | Total_Loan_Application | Total_Funded_Amount | Total_Received_Amount |
|---|---|---|---|---|
| 1 | CA | 6894 | 78484125 | 83901234 |
| 2 | NY | 3701 | 42077050 | 46108181 |
| 3 | TX | 2664 | 31236650 | 34392715 |
| 4 | FL | 2773 | 30046125 | 31601905 |
| 5 | NJ | 1822 | 21657475 | 23425159 |
| 6 | IL | 1486 | 17124225 | 18875941 |
| 7 | VA | 1375 | 15982650 | 17711443 |
| 8 | PA | 1482 | 15826525 | 17462908 |
| 9 | GA | 1355 | 15480325 | 16728040 |
| 10 | MA | 1310 | 15051000 | 16676279 |
| 11 | OH | 1188 | 12991375 | 14330148 |
| 12 | MD | 1027 | 11911400 | 12985170 |
| 13 | AZ | 833 | 9206000 | 10041986 |
| 14 | CO | 770 | 8976000 | 9845810 |
| 15 | WA | 805 | 8855525 | 9531739 |
| 16 | NC | 759 | 8787575 | 9534813 |
| 17 | CT | 730 | 8435575 | 9357612 |
| 18 | MI | 685 | 7829900 | 8543660 |
| 19 | MO | 660 | 7151175 | 7692732 |
| 20 | MN | 592 | 6302600 | 6750746 |
| 21 | NV | 482 | 5307375 | 5451443 |
| 22 | SC | 464 | 5080475 | 5462458 |
| 23 | WI | 446 | 5070450 | 5485161 |
| 24 | AL | 432 | 4949225 | 5492272 |

## 3. Loan Term Analysis:

```
select
 term,
 COUNT(id) as Total_Loan_Application,
 SUM(loan_amount) as Total_Funded_Amount,
 SUM(total_payment) as Total_Received_Amount
from [Bank Loan DB].dbo.Bank_Loan_Data
group by term
order by term;
```

| | term | Total_Loan_Application | Total_Funded_Amount | Total_Received_Amount |
|---|---|---|---|---|
| 1 | 36 months | 28237 | 273041225 | 294709458 |
| 2 | 60 months | 10339 | 162715850 | 178361475 |

## 4. Employee Length Analysis:

```
select
 emp_length,
 COUNT(id) as Total_Loan_Application,
 SUM(loan_amount) as Total_Funded_Amount,
 SUM(total_payment) as Total_Received_Amount
from [Bank Loan DB].dbo.Bank_Loan_Data
group by emp_length
order by emp_length;
```

| | emp_length | Total_Loan_Application | Total_Funded_Amount | Total_Received_Amount |
|---|---|---|---|---|
| 1 | < 1 year | 4575 | 44210625 | 47545011 |
| 2 | 1 year | 3229 | 32883125 | 35498348 |
| 3 | 10+ years | 8870 | 116115950 | 125871616 |
| 4 | 2 years | 4382 | 44967975 | 49206961 |
| 5 | 3 years | 4088 | 43937850 | 47551832 |
| 6 | 4 years | 3428 | 37600375 | 40964850 |
| 7 | 5 years | 3273 | 36973625 | 40397571 |
| 8 | 6 years | 2228 | 25612650 | 27908658 |
| 9 | 7 years | 1772 | 20811725 | 22584136 |
| 10 | 8 years | 1476 | 17558950 | 19025777 |
| 11 | 9 years | 1255 | 15084225 | 16516173 |

We can also Order by/ sort by COUNT(id): To show who takes More Loan Applications based on emp length

## 5. Loan Purpose:

```
select
 purpose,
 COUNT(id) as Total_Loan_Application,
 SUM(loan_amount) as Total_Funded_Amount,
 SUM(total_payment) as Total_Received_Amount
from [Bank Loan DB].dbo.Bank_Loan_Data
group by purpose
order by COUNT(id) desc;
```

| | purpose | Total_Loan_Application | Total_Funded_Amount | Total_Received_Amount |
|---|---|---|---|---|
| 1 | Debt consolidation | 18214 | 232459675 | 253801871 |
| 2 | credit card | 4998 | 58885175 | 65214084 |
| 3 | other | 3824 | 31155750 | 33289676 |
| 4 | home improvement | 2876 | 33350775 | 36380930 |
| 5 | major purchase | 2110 | 17251600 | 18676927 |
| 6 | small business | 1776 | 24123100 | 23814817 |
| 7 | car | 1497 | 10223575 | 11324914 |
| 8 | wedding | 928 | 9225800 | 10266856 |
| 9 | medical | 667 | 5533225 | 5851372 |
| 10 | moving | 559 | 3748125 | 3999899 |
| 11 | house | 366 | 4824925 | 5185538 |
| 12 | vacation | 352 | 1967950 | 2116738 |
| 13 | educational | 315 | 2161650 | 2248380 |
| 14 | renewable_energy | 94 | 845750 | 898931 |

## 6. Home Ownership Analysis:

```
select
 home_ownership,
 COUNT(id) as Total_Loan_Application,
 SUM(loan_amount) as Total_Funded_Amount,
 SUM(total_payment) as Total_Received_Amount
from [Bank Loan DB].dbo.Bank_Loan_Data
group by home_ownership
order by COUNT(id) desc;
```

| | home_ownership | Total_Loan_Application | Total_Funded_Amount | Total_Received_Amount |
|---|---|---|---|---|
| 1 | RENT | 18439 | 185768475 | 201823056 |
| 2 | MORTGAGE | 17198 | 219329150 | 238474438 |
| 3 | OWN | 2838 | 29597675 | 31729129 |
| 4 | OTHER | 98 | 1044975 | 1025257 |
| 5 | NONE | 3 | 16800 | 19053 |

# DASHBOARD 3: DETAILS

## GRID

We need a comprehensive 'Details Dashboard' that provides a consolidated view of all essential information within our loan data. We can apply different filters to our entire dataset to show insights

Let's see the home Ownership Analysis for Grade= "A"

```
select
 home_ownership,
 COUNT(id) as Total_Loan_Application,
 SUM(loan_amount) as Total_Funded_Amount,
 SUM(total_payment) as Total_Received_Amount
from [Bank Loan DB].dbo.Bank_Loan_Data
where grade='A'
group by home_ownership
order by COUNT(id) desc;
```

| | home_ownership | Total_Loan_Application | Total_Funded_Amount | Total_Received_Amount |
|---|---|---|---|---|
| 1 | MORTGAGE | 4973 | 45908575 | 47963188 |
| 2 | RENT | 3918 | 31825075 | 33290992 |
| 3 | OWN | 773 | 6340100 | 6618219 |
| 4 | OTHER | 24 | 168475 | 167924 |
| 5 | NONE | 1 | 10000 | 11240 |

```
-- We can create Dynamic using stored Procedures

CREATE PROCEDURE GetLoanByHomeOwnership
    @Grade CHAR(1)  -- Define the grade parameter
AS
BEGIN
    SELECT
        home_ownership,
        COUNT(id) AS Total_Loan_Application,
        SUM(loan_amount) AS Total_Funded_Amount,
        SUM(total_payment) AS Total_Received_Amount
    FROM [Bank Loan DB].dbo.Bank_Loan_Data
    WHERE grade = @Grade
    GROUP BY home_ownership
    ORDER BY COUNT(id) DESC;
END

EXEC GetLoanByHomeOwnership @Grade = 'C';
```

Loan Grade = "Grade"

.. We can change the input parameters to display the data. (Ex. A, B, C, D)

| | home_ownership | Total_Loan_Application | Total_Funded_Amount | Total_Received_Amount |
|---|---|---|---|---|
| 1 | RENT | 4105 | 39647575 | 43444398 |
| 2 | MORTGAGE | 3214 | 42156850 | 46409837 |
| 3 | OWN | 569 | 5478025 | 5957959 |
| 4 | OTHER | 16 | 174000 | 161324 |

**Let's see the home Ownership Analysis and Address State for Grade= “A” & “CA”**

```
select
 home_ownership,
 COUNT(id) as Total_Loan_Application,
 SUM(loan_amount) as Total_Funded_Amount,
 SUM(total_payment) as Total_Received_Amount
from [Bank Loan DB].dbo.Bank_Loan_Data
where grade='A' and address_state='TX'
group by home_ownership
order by COUNT(id) desc;
```

| | home_ownership | Total_Loan_Application | Total_Funded_Amount | Total_Received_Amount |
|---|---|---|---|---|
| 1 | MORTGAGE | 392 | 3735700 | 3961981 |
| 2 | RENT | 217 | 1675375 | 1747551 |
| 3 | OWN | 66 | 487075 | 498576 |
| 4 | OTHER | 3 | 17500 | 12449 |

```
-- We can create Dynamic using stored Procedures

CREATE PROCEDURE GetLoanByStateAndGrade
    @Grade CHAR(1),              -- Parameter for loan grade
    @AddressState VARCHAR(5)     -- Parameter for address state
AS
BEGIN
    SELECT
        home_ownership,
        COUNT(id) AS Total_Loan_Application,
        SUM(loan_amount) AS Total_Funded_Amount,
        SUM(total_payment) AS Total_Received_Amount
    FROM [Bank Loan DB].dbo.Bank_Loan_Data
    WHERE grade = @Grade AND address_state = @AddressState
    GROUP BY home_ownership
    ORDER BY COUNT(id) DESC;
END

EXEC GetLoanByStateAndGrade @Grade = 'C', @AddressState = 'NY';
```

We can change the input parameters to display the data.

Grade = “Loan Grade” & Address State= “State”

| | home_ownership | Total_Loan_Application | Total_Funded_Amount | Total_Received_Amount |
|---|---|---|---|---|
| 1 | RENT | 555 | 5671100 | 6317652 |
| 2 | MORTGAGE | 153 | 2034200 | 2255287 |
| 3 | OWN | 53 | 466450 | 520014 |
| 4 | OTHER | 1 | 18000 | 21686 |

**…… Similarly, we can apply different filters ……**

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