BANK LOAN REPORT- SQL QUERIES WITH RESULTS

A. BANK LOAN REPORT | SUMMARY

KPI'S :

1. TOTAL LOAN APPLICATIONS

```sql
select * from bank_loan_data
---KPI
---1. Total loan applications
select count(id)as Total_loan_applications from bank_loan_data
SELECT COUNT(id) AS loan_applications_dec2021 FROM bank_loan_data WHERE MONTH(issue_date) = 12 AND YEAR(issue_date) = 2021;
---month on month loan application
---dec 2021 & nov 2021. formula=(MTD-PMTD)/PMTD
WITH DataCounts AS (
    SELECT
        (SELECT COUNT(id) FROM bank_loan_data WHERE MONTH(issue_date) = 12 AND YEAR(issue_date) = 2021) AS MTD,
        (SELECT COUNT(id) FROM bank_loan_data WHERE MONTH(issue_date) = 11 AND YEAR(issue_date) = 2021) AS PMTD
)
SELECT
    MTD,
    PMTD,
    CASE
        WHEN PMTD = 0 THEN NULL  -- avoid division by zero
        ELSE ROUND( (CAST(MTD - PMTD AS FLOAT) / PMTD) * 100, 2 )  -- percentage growth
    END AS Growth_Percentage
FROM
    DataCounts;
```

	Total_loan_applications
1	38576

	loan_applications_dec2021
1	4314

	MTD	PMTD	Growth_Percentage
1	4314	4035	6.91

2. TOTAL FUNDED AMOUNT

```sql
---2. Total funded amount
select sum(loan_amount) as total_funded_amount from bank_loan_data
---Total funded amont in dec2021
select sum(loan_amount) as Total_funded_amount_dec2021 from bank_loan_data
where month(issue_date)=12 and year(issue_date)=2021;
---month on month funded amount
WITH Datasums AS (
SELECT
    (SELECT sum(loan_amount) FROM bank_loan_data WHERE MONTH(issue_date) = 12 AND YEAR(issue_date) = 2021) AS MTD,
    (SELECT sum(loan_amount) FROM bank_loan_data WHERE MONTH(issue_date) = 11 AND YEAR(issue_date) = 2021) AS PMTD
)
SELECT
    MTD,
    PMTD,
    CASE
        WHEN PMTD = 0 THEN NULL  -- avoid division by zero
        ELSE ROUND( (CAST(MTD - PMTD AS FLOAT) / PMTD) * 100, 2 )  -- percentage growth
    END AS Growth_Percentage
FROM
    DataSums;
```

	total_funded_amount
1	435757075

	Total_funded_amount_dec2021
1	53981425

	MTD	PMTD	Growth_Percentage
1	53981425	47754825	13.04

3. TOTAL RECEIVED AMOUNT

```sql
---3. Total received amount
select sum(total_payment) as Total_amount_received from bank_loan_data
---Total received amount in dec2021
select sum(total_payment) as Total_amount_received_dec2021 from bank_loan_data
where month(issue_date)=12 and year(issue_date)=2021;
---month on month received amount
WITH Datasums AS (
SELECT
    (SELECT sum(total_payment) FROM bank_loan_data WHERE MONTH(issue_date) = 12 AND YEAR(issue_date) = 2021) AS MTD,
    (SELECT sum(total_payment) FROM bank_loan_data WHERE MONTH(issue_date) = 11 AND YEAR(issue_date) = 2021) AS PMTD
)
SELECT
    MTD,
    PMTD,
    CASE
        WHEN PMTD = 0 THEN NULL   -- avoid division by zero
        ELSE ROUND( (CAST(MTD - PMTD AS FLOAT) / PMTD) * 100, 2 )   -- percentage growth
    END AS Growth_Percentage
FROM
    DataSums;
```

91 %

⊞ Results ▤ Messages

	Total_amount_received
1	473070933

	Total_amount_received_dec2021
1	58074380

	MTD	PMTD	Growth_Percentage
1	58074380	50132030	15.84

4. AVERAGE INTEREST RATE & AVERAGE DEBT TO INCOME RATIO (DTI)

```sql
select * from bank_loan_data

---4. AVERAGE INTEREST RATE
select round(avg(int_rate) *100,2) as Avg_interest_rate from bank_loan_data
--- AVERAGE INTEREST RATE in dec2021
select round(avg(int_rate) *100,2) as Avg_interest_rate_dec2021 from bank_loan_data
where month(issue_date)=12 and year(issue_date)=2021
---AVERAGE INTEREST RATE in last month(nov2021)
select round(avg(int_rate) *100,2) as Avg_interest_rate_nov2021 from bank_loan_data
where month(issue_date)=11 and year(issue_date)=2021


---5. AVERAGE DEBT-TO-INCOME RATIO(DTI)
select round(avg(dti) *100,2) as Avg_debt_to_income_ratio from bank_loan_data
--- AVERAGE DTI in dec2021
select round(avg(int_rate) *100,2) as Avg_dti_dec2021 from bank_loan_data
where month(issue_date)=12 and year(issue_date)=2021
```

91 %

⊞ Results ▤ Messages

	Avg_debt_to_income_ratio
1	13.33

	Avg_dti_dec2021
1	12.36

B. GOOD LOAN & BAD LOAN ISSUED

```
SQLQuery3.sql - LA...\sumishajahan (61))*  + X
    ---5. GOOD LOAN  & BAD LOAN APPLICATIONS
        select count(id) as Good_loan_applications from bank_loan_data where loan_status='Fully Paid' or loan_status='Current'
        select count(id) as Bad_loan_applications from bank_loan_data where loan_status='Charged off'
    ---GOOD LOAN & BAD LOAN APPLICATION PERCENTAGE
        select
        FORMAT(
            (COUNT(CASE WHEN loan_status = 'Fully Paid' OR loan_status = 'Current' THEN id END) * 100.0) / COUNT(id),'N2'
        ) + '%' AS Good_Loan_Percentage FROM  bank_loan_data;
        select
        FORMAT(
            (COUNT(CASE WHEN loan_status = 'Charged off' THEN id END) * 100.0)/ COUNT(id), 'N2'
        ) + '%' AS Bad_Loan_Percentage FROM  bank_loan_data;
    ---6. GOOD LOAN FUNDED AMOUNT AND RECEIVED AMOUNT
        select sum(loan_amount) as Good_loan_funded_amount from bank_loan_data where loan_status='Fully Paid' or loan_status='Current'
        select sum(total_payment) as Good_loan_received_amount from bank_loan_data where loan_status='Fully Paid' or loan_status='Current'
    ---BAD LOAN FUNDED AMOUNT AND RECEIVED AMOUNT
        select sum(loan_amount) as Bad_loan_funded_amount from bank_loan_data where loan_status='Charged off'
        select sum(total_payment) as Bad_loan_received_amount from bank_loan_data where loan_status='Charged off'
```

91 %

⊞ Results 📄 Messages

	Good_loan_applications
1	33243

	Bad_loan_applications
1	5333

	Good_Loan_Percentage
1	86.18%

	Bad_Loan_Percentage
1	13.82%

	Good_loan_funded_amount
1	370224850

	Good_loan_received_amount
1	435786170

	Bad_loan_funded_amount
1	65532225

	Bad_loan_received_amount
1	37284763

C. LOAN STATUS GRID VIEW

```
SQLQuery3.sql - LA...\sumishajahan (61))*  + X
    ---8. LOAN STATUS GRID VIEW
    SELECT
        loan_status,
        count(id) as Total_loan_applications,
        sum(loan_amount) as Total_funded_amount,
        sum(total_payment) as total_amount_received,
        round(Avg(int_rate*100),2) as Average_interest_rate,
        round(Avg(dti*100),2) as DTI from bank_loan_data group by loan_status
    SELECT
        loan_status,
        count(id) as MTD_Total_loan_applications,
        sum(loan_amount) as MTD_Total_funded_amount,
        sum(total_payment) as MTD_total_amount_received from bank_loan_data
        where month(issue_date)=12 and year(issue_date)=2021 group by loan_status
    SELECT
        loan_status,
        count(id) as PMTD_Total_loan_applications,
        sum(loan_amount) as PMTD_Total_funded_amount,
        sum(total_payment) as PMTD_total_amount_received from bank_loan_data
        where month(issue_date)=11 and year(issue_date)=2021 group by loan_status
```

110 %

⊞ Results 📄 Messages

	loan_status	Total_loan_applications	Total_funded_amount	total_amount_received	Average_interest_rate	DTI
1	Fully Paid	32145	351358350	411586256	11.64	13.17
2	Current	1098	18866500	24199914	15.1	14.72
3	Charged Off	5333	65532225	37284763	13.88	14

	loan_status	MTD_Total_loan_applications	MTD_Total_funded_amount	MTD_total_amount_received
1	Fully Paid	3452	41302025	47815851
2	Current	213	3946625	4934318
3	Charged Off	649	8732775	5324211

	loan_status	PMTD_Total_loan_applications	PMTD_Total_funded_amount	PMTD_total_amount_received
1	Fully Paid	3321	37375675	42420451
2	Current	153	2867975	3717514
3	Charged Off	561	7511175	3994065

D. MONTHLY TRENDS BY ISSUE DATE

```sql
select * from bank_loan_data
---MONTHLY TRENDS BY ISSUE DATE
select
    month(issue_date) as month_number,
    datename(month,issue_date) as month_name,
    count(id) as Total_loan_applications,
    sum(loan_amount) as Total_funded_amount,
    sum(total_payment) as Total_received_amount
from bank_loan_data
group by month(issue_date),datename(month,issue_date)
order by month(issue_date)
```

110 %

Results / Messages

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

E. REGIONAL ANALYSIS BY STATE BASED ON TOTAL FUNDED AMOUNT

```sql
---REGIONAL ANALYSIS BY STATE BASED ON TOTAL FUNDED AMOUNT (TOP 5 & BOTTOM 5)
SELECT TOP 5
    address_state,
    COUNT(id) AS Total_loan_applications,
    SUM(loan_amount) AS Total_funded_amount,
    SUM(total_payment) AS Total_received_amount FROM  bank_loan_data
GROUP BY  address_state
ORDER BY SUM(loan_amount) DESC;
SELECT TOP 5
    address_state,
    COUNT(id) AS Total_loan_applications,
    SUM(loan_amount) AS Total_funded_amount,
    SUM(total_payment) AS Total_received_amount FROM  bank_loan_data
GROUP BY  address_state
ORDER BY SUM(loan_amount) ASC;
```

110 %

Results / Messages

	address_state	Total_loan_applications	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

	address_state	Total_loan_applications	Total_funded_amount	Total_received_amount
1	ME	3	9200	10808
2	NE	5	31700	24542
3	IA	5	56450	64482
4	ID	6	59750	65329
5	IN	9	86225	85521

F. REGIONAL ANALYSIS BY STATE BASED ON TOTAL AMOUNT RECEIVED

```
SQLQuery4.sql - LA...\sumishajahan (67))*  # X
    ---REGIONAL ANALYSIS BY STATE BASED ON TOTAL LOAN APPLICATIONS (TOP 5 & BOTTOM 5)
  SELECT TOP 5
      address_state,
      COUNT(id) AS Total_loan_applications,
      SUM(loan_amount) AS Total_funded_amount,
      SUM(total_payment) AS Total_received_amount FROM  bank_loan_data
  GROUP BY  address_state
  ORDER BY COUNT(id) DESC;
  SELECT TOP 5
      address_state,
      COUNT(id) AS Total_loan_applications,
      SUM(loan_amount) AS Total_funded_amount,
      SUM(total_payment) AS Total_received_amount FROM  bank_loan_data
  GROUP BY  address_state
  ORDER BY COUNT(iD) ASC;
```

110 %

⊞ Results 🖽 Messages

	address_state	Total_loan_applications	Total_funded_amount	Total_received_amount
1	CA	6894	78484125	83901234
2	NY	3701	42077050	46108181
3	FL	2773	30046125	31601905
4	TX	2664	31236650	34392715
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1	ME	3	9200	10808
2	NE	5	31700	24542
3	IA	5	56450	64482
4	ID	6	59750	65329
5	IN	9	86225	85521

G. REGIONAL ANALYSIS BY STATE BASED ON TOTAL LOAN APPLICATIONS

```
SQLQuery4.sql - LA...\sumishajahan (68))  # X
    ---REGIONAL ANALYSIS BY STATE BASED ON TOTAL LOAN APPLICATIONS (TOP 5 & BOTTOM 5
  SELECT TOP 5
      address_state,
      COUNT(id) AS Total_loan_applications,
      SUM(loan_amount) AS Total_funded_amount,
      SUM(total_payment) AS Total_received_amount FROM  bank_loan_data
  GROUP BY  address_state
  ORDER BY COUNT(id) DESC;
  SELECT TOP 5
      address_state,
      COUNT(id) AS Total_loan_applications,
      SUM(loan_amount) AS Total_funded_amount,
      SUM(total_payment) AS Total_received_amount FROM  bank_loan_data
  GROUP BY  address_state
```

100 %

⊞ Results 🖽 Messages

	address_state	Total_loan_applications	Total_funded_amount	Total_received_amount
1	CA	6894	78484125	83901234
2	NY	3701	42077050	46108181
3	FL	2773	30046125	31601905
4	TX	2664	31236650	34392715
5	NJ	1822	21657475	23425159

	address_state	Total_loan_applications	Total_funded_amount	Total_received_amount
1	ME	3	9200	10808
2	NE	5	31700	24542
3	IA	5	56450	64482
4	ID	6	59750	65329
5	IN	9	86225	85521

BANK LOAN REPORT OVERVIEW

```
SQLQuery4.sql - LA...\sumishajahan (67))*    ╫ X
    ---LOAN TERM ANALYSIS
  SELECT
      term,
      COUNT(id) AS Total_loan_applications,  SUM(loan_amount) AS Total_funded_amount,
      SUM(total_payment) AS Total_received_amount FROM  bank_loan_data
  GROUP BY  term ORDER BY term;
    ---EMPLOYEE LENGTH ANALYSIS
  SELECT
      emp_length,COUNT(id) AS Total_loan_applications, SUM(loan_amount) AS Total_funded_amount,
      SUM(total_payment) AS Total_received_amount FROM  bank_loan_data
  GROUP BY  emp_length ORDER BY count(id) desc;
    ---LOAN PURPOSE
  SELECT
      purpose,
      COUNT(id) AS Total_loan_applications,  SUM(loan_amount) AS Total_funded_amount,
      SUM(total_payment) AS Total_received_amount FROM  bank_loan_data
  GROUP BY  purpose ORDER BY count(id) desc;
    ---HOME OWNERSHIP ANALYSIS
  SELECT
      home_ownership,
      COUNT(id) AS Total_loan_applications,  SUM(loan_amount) AS Total_funded_amount,
      SUM(total_payment) AS Total_received_amount FROM  bank_loan_data
  GROUP BY  home_ownership ORDER BY count(id) desc;
```

SQLQuery4.sql - LA...\sumishajahan (67))*   ╫ X

100 %   ▼

⊞ Results 📰 Messages

	term	Total_loan_applications	Total_funded_amount	Total_received_amount
1	36 months	28237	273041225	294709458
2	60 months	10339	162715850	178361475

	emp_length	Total_loan_applications	Total_funded_amount	Total_received_amount
1	10+ years	8870	116115950	125871616
2	< 1 year	4575	44210625	47545011
3	2 years	4382	44967975	49206961
4	3 years	4088	43937850	47551832
5	4 years	3428	37600375	40964850
6	5 years	3273	36973625	40397571
7	1 year	3229	32883125	35498348
8	6 years	2228	25612650	27908658

	purpose	Total_loan_applications	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 improvem...	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

	home_ownership	Total_loan_applications	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

NOTE: WE HAVE APPLIED MULTIPLE FILTERS ON ALL THE DASHBOARDS. YOU CAN CHECK THE RESULTS FOR THE FILTERS AS WELL BY MODIFYING THE QUERY AND COMPARING THE RESULTS.