# BANK LOAN REPORT- SQL QUERIES WITH RESULTS

## A. BANK LOAN REPORT | SUMMARY

### KPI'S:

1. TOTAL LOAN APPLICATIONS

```
SQLQuery1.sql - LA...\sumishajahan (57))* □ ×
    ∃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,
             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:
91 % - 4
■ Results ■ Messages
     Total_loan_applications
    38576
     loan_applications_dec2021
    4314
           PMTD Growth_Percentage
    4314 4035 6.91
```

#### 2. TOTAL FUNDED AMOUNT

```
SQLQuery1.sql - LA...\sumishajahan (57))* → ×
          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 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
         DataSums;
91 %
total_funded_amount
     435757075
      Total_funded_amount_dec2021
     53981425
     MTD PMTD Growth 53981425 47754825 13.04
                           Growth_Percentage
```

#### 3. TOTAL RECEIVED AMOUNT

```
SQLQuery1.sql - LA...\sumishajahan (57))* + X
         ---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 %
Total_amount_received
    473070933
     Total_amount_received_dec2021
   58074380
     MTD
              PMTD
                       Growth Percentage
    58074380 50132030 15.84
```

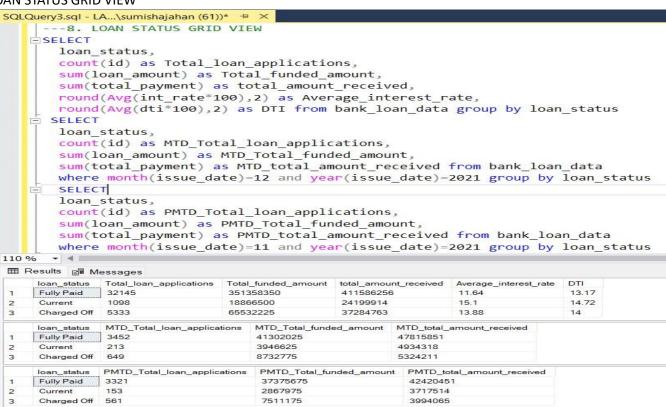
#### 4. AVERAGE INTEREST RATE & AVERAGE DEBT TO INCOME RATIO (DTI)

```
SQLQuery2.sql - LA...\sumishajahan (52))* + ×
   □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)
    \verb|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 %
       - 4
Results Messages
     Avg_debt_to_income_ratio
    13.33
     Avg_dti_dec2021
     12.36
```

#### B. GOOD LOAN & BAD LOAN ISSUED

```
SQLQuery3.sql - LA...\sumishajahan (61))* + ×
      --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
     Bad_loan_applications
     Good_Loan_Percentage
    86.18%
     Bad_Loan_Percentage
     Good_loan_funded_amount
     Good_loan_received_amount
    435786170
     Bad_loan_funded_amount
    65532225
     Bad_loan_received_amount
    37284763
```

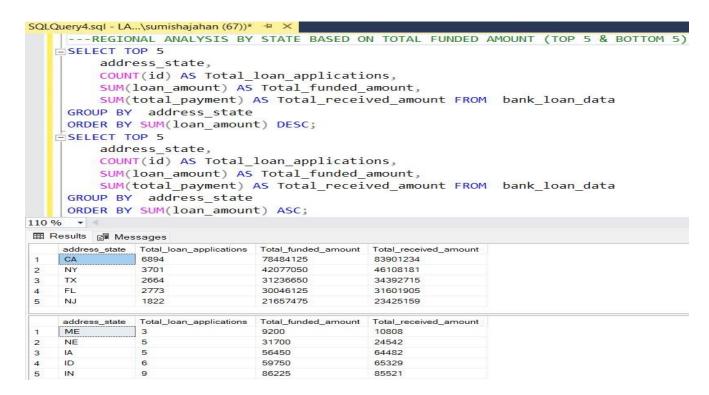
#### C. LOAN STATUS GRID VIEW



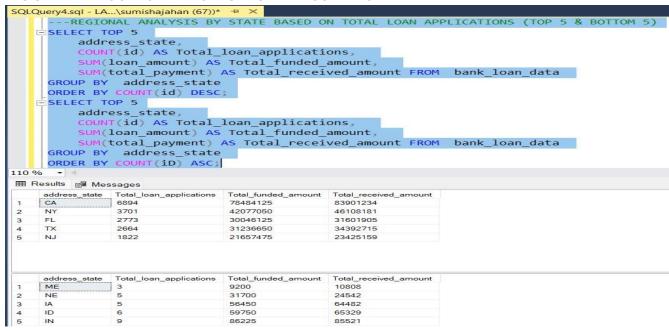
D. MONTHLY TRENDS BY ISSUE DATE

```
SQLQuery4.sql - LA...\sumishajahan (67))* + X
   ---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 %
month_number
                 month_name
                            Total_loan_applications
                                              Total funded amount
                                                              Total received amount
     1
                 January
                                               25031650
                                                               27578836
2
                 February
                            2279
                                               24647825
                                                               27717745
     3
                            2627
                                               28875700
                                                               32264400
3
                 March
     4
                            2755
                 April
                                               29800800
                                                               32495533
4
5
     5
                            2911
                 May
                                               31738350
                                                               33750523
     6
                            3184
                                               34161475
                                                               36164533
6
                 June
     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
                            4035
                                               47754825
                                                               50132030
 11
                  November
                            4314
                                               53981425
                                                               58074380
 12
     12
                  December
```

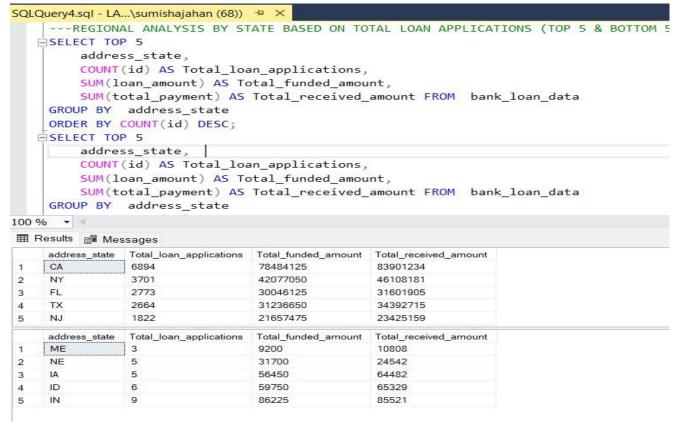
E. REGIONAL ANALYSIS BY STATE BASED ON TOTAL FUNDED AMOUNT



F. REGIONAL ANALYSIS BY STATE BASED ON TOTAL AMOUNT RECEIVED



G. REGIONAL ANALYSIS BY STATE BASED ON TOTAL LOAN APPLICATIONS



#### **BANK LOAN REPORT OVERVIEW**

```
SQLQuery4.sql - LA...\sumishajahan (67))* 4 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))* + ×
100 % -
Total_loan_applications Total_funded_amount Total_received_amount
     36 months 28237
                                      273041225
                                                         294709458
      60 months
                10339
                                      162715850
                                                         178361475
     emp_length Total_loan_applications Total_funded_amount Total_received_amount
                8870
     10+ years
                                       116115950
                                                          125871616
      < 1 year
                  4575
                                       44210625
                                                          47545011
                  4382
                                       44967975
                                                          49206961
3
      2 years
                  4088
                                       43937850
                                                           47551832
4
      3 years
                  3428
5
      4 years
                                       37600375
                                                           40964850
6
      5 years
                  3273
                                       36973625
                                                           40397571
                  3229
                                       32883125
                                                          35498348
      1 vear
8
     6 years
                  2228
                                       25612650
                                                          27908658
      purpose
                       Total_loan_applications
                                           Total_funded_amount Total_received_amount
     Debt consolidation
                      18214
                                            232459675
                                                                253801871
2
      credit card
                       4998
                                            58885175
                                                                65214084
                       3824
                                                                33289676
3
      other
                                            31155750
     home improvem...
                      2876
                                            33350775
                                                                36380930
4
                                                                18676927
                       2110
                                            17251600
5
     major purchase
6
      small business
                       1776
                                            24123100
                                                                23814817
                       1497
                                            10223575
 7
                                                                11324914
      car
8
     wedding
                       928
                                            9225800
                                                                10266856
     home_ownership Total_loan_applications
                                           Total_funded_amount Total_received_amount
     RENT
                      18439
                                           185768475
                                                               201823056
2
      MORTGAGE
                      17198
                                           219329150
                                                               238474438
                      2838
                                                               31729129
      OWN
                                           29597675
3
                                                               1025257
4
      OTHER
                      98
                                           1044975
5
      NONE
                                           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.