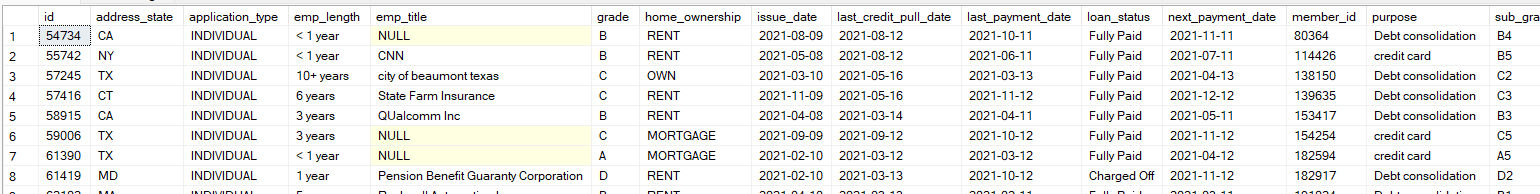
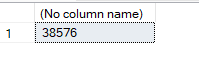
**Project 1 – BANK LOAN ANALYSIS (Microsoft SQL SERVER, SQL Server Management Studio)  
functionalities which I learn in project**

**Task 1 :- Importing file and Making datbase  
------\*Importing data file type.csv into SQL Server Management Studio**After opening the server 🡪 Open databases 🡪 right click (New Database) 🡪 writet name (e.g. Bank Loan DB) enter🡪 (Database will be get genrated)  
🡪 Right click on new database generated 🡪 Task 🡪 Import Flat File 🡪 Browse the fils 🡪 upload.csv file from internal storage 🡪

Right click on data base name 🡪 New Query  
  
**SELECT** \* **FROM** table\_name;

**SELECT** \* **FROM** bank\_loan\_data; **Result :- **

**Task 2 :- Firing Queries according to our problem statement   
  
1. Total Loan Applications**: We need to calculate the total number of loan applications received during a specified period. Additionally, it is essential to monitor the Month-to-Date (MTD) Loan Application and track changes Month-over-Month (MoM).  
  
**SELECT COUNT(id) FROM bank\_loan\_data;** **SELECT COUNT(id) AS Total\_Loan\_Applications FROM bank\_loan\_data;****-- 12 = December:  
SELECT COUNT(id) AS MTD\_Total\_Loan\_Applications FROM bank\_loan\_data   
WHERE MONTH(issue\_date) = 12 AND YEAR(issue\_date) = 2021;  
***\*\*final script according to statement\*\****-- 11 = November, PMTD :- P = previous:**

**SELECT COUNT(id) AS PMTD\_Total\_Loan\_Applications FROM bank\_loan\_data   
WHERE MONTH(issue\_date) = 11 AND YEAR(issue\_date) = 2021;  
**

**2. Total Funded Amount**: Understanding the total amount of funds disbursed as loan is crucial. We also want to keep an eye on the MTD Total Funded Amount and analyse the Month-over-Month (MoM) changes in the metric.  
**SELECT SUM(loan\_amount) AS Total\_Funded\_Amount FROM bank\_loan\_data;** **SELECT SUM(loan\_amount) AS MTD\_Total\_Funded\_Amount FROM bank\_loan\_data  
WHERE MONTH(issue\_date) = 12 AND YEAR(issue\_date) = 2021;  
***\*\*final script according to statement\*\****-- 11 = November, PMTD :- P = previous:  
SELECT SUM(loan\_amount) AS PMTD\_Total\_Funded\_Amount FROM bank\_loan\_data  
WHERE MONTH(issue\_date) = 11 AND YEAR(issue\_date) = 2021;  
**

**3. Total Amount Received**: Tracking the total amount receive from borrowers is essential for assessing the bank’s cash flow and loan repayment. We should analyse the Month-to-Date (MTD) Total Amount Received and observe the Month-over-Month(MoM) changes.  
**SELECT SUM(total\_payment) AS Total\_Amount\_Received FROM bank\_loan\_data;  
**

**SELECT SUM(total\_payment) AS PMTD\_Total\_Amount\_Received FROM bank\_loan\_data  
WHERE MONTH(issue\_date) = 11 AND YEAR(issue\_date) = 2021;  
**

**4. Average Interest Rate**: Calculating the average interest rate across all loans, MTD and monitoring the Month-over-Month (MoM) variation in interest rates will provide insights into our lending portfolio’s overall cost.  
**--. \*100 because 0.something ;**

**SELECT AVG(int\_rate) \* 100 AS Avg\_Interest\_Rate FROM bank\_loan\_data;  
  
  
--. ROUND (AVG(int\_rate), 4 <-- upto which decimal point) ;**

**SELECT ROUND(AVG(int\_rate), 4) \* 100 AS Avg\_Interest\_Rate FROM bank\_loan\_data;  
**

**SELECT ROUND(AVG(int\_rate), 4) \* 100 AS PMTD\_Avg\_Interest\_Rate FROM bank\_loan\_data  
WHERE MONTH(issue\_date) = 11 AND YEAR(issue\_date) = 2021;  
**

**5. Average Depth-to-Income Ratio(DTI)**: Evaluating the average DTI for our borrowers helps usgauge their financial health. We need to compute the average DTI for all loans, MTD and track Month-over-Month (MoM) fluctuations.

**SELECT ROUND(AVG(dti),4) \* 100 AS PMTD\_Avg\_DTI FROM bank\_loan\_data  
WHERE MONTH(issue\_date) = 11 AND YEAR(issue\_date) = 2021;  
  
Task 3:- Good Loan vs Bad Loan (KPIs)   
Good Loan**1. 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\_data;**   


2. Good Loan Application  
**SELECT COUNT(id) AS Good\_Loan\_Applications FROM bank\_loan\_data  
WHERE loan\_status = 'Fully Paid' OR loan\_status = 'Current';  
**   
3. Good Loan Funded Amount  
**SELECT SUM(loan\_amount) AS Good\_Loan\_Funded\_Amount FROM bank\_loan\_data**  
**WHERE loan\_status = 'Fully Paid' OR loan\_status = 'Current';**   
4. Good Loan Total Received Amount  
**SELECT SUM(total\_payment) AS Good\_Loan\_Recieved\_Amount FROM bank\_loan\_data**  
**WHERE loan\_status = 'Fully Paid' OR loan\_status = 'Current';**   


**BAD Loan**1. BAD Loan Application Percentage  
**SELECT  
(COUNT(CASE WHEN loan\_status = 'Charged off' THEN id END) \*100.0)  
/  
COUNT(id) AS Bad\_loan\_percentage  
FROM bank\_loan\_data;**  
2. BAD Loan Application  
**SELECT COUNT(id) AS Bad\_Loan\_Applications FROM bank\_loan\_data  
WHERE loan\_status = 'Charged off';  
**  
3. BAD Loan Funded Amount  
**SELECT SUM(loan\_amount) AS Bad\_Loan\_Funded\_Amount FROM bank\_loan\_data**  
**WHERE loan\_status = 'Charged off';**  
4. BAD Loan Total Received Amount  
**SELECT SUM(total\_payment) AS Bad\_Loan\_Recieved\_Amount FROM bank\_loan\_data**  
**WHERE loan\_status = 'Charged off';**   


**Task 4 : Loan Status Grid View**In order to gain a comprehensive overview of our lending operations and monitor the performance of loans, we aim to create a grid view report categorized by ‘Loan Status’. By providing insights into metrics such as ‘Total Loan Applications’, ‘Total Funded Amount’, ‘Total Amount Received’, ‘Month-to-Date(MTD) Funded Amount, ‘MTD Amount Received’, ‘Average Interest Rate ‘and ‘Average Dept-to-income Ratio(DTI)’, this grid view will empower us to make data-driven decision and assess the health of your loan portfolio.

**--LOAN STATUS**

**SELECT**

**loan\_status,**

**COUNT(id) AS Total\_Loan\_applications,**

**SUM(total\_payment) AS Total\_Amount\_Received,**

**SUM(loan\_amount) AS Total\_Funded\_Amount,**

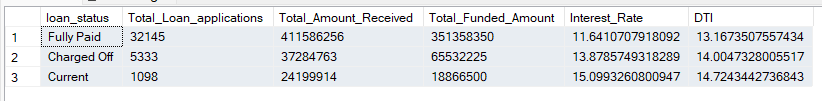
**AVG(int\_rate \* 100) AS Interest\_Rate,**

**AVG(dti \* 100) AS DTI**

**FROM**

**bank\_loan\_data**

**GROUP BY**

**loan\_status  
**

**--MTD**

**SELECT**

**loan\_status,**

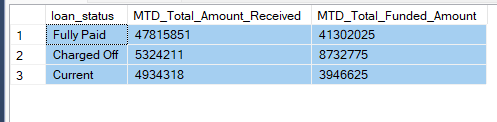
**SUM(total\_payment) AS MTD\_Total\_Amount\_Received,**

**SUM(loan\_amount) AS MTD\_Total\_Funded\_Amount**

**FROM bank\_loan\_data**

**WHERE MONTH(issue\_date) = 12**

**GROUP BY loan\_status**

****

**Task 5 : Dashboard 2 overview || CHARTS  
1. Monthly Trends by Issue Date (Line Chart)**: To identify seasonality and long-term trends in lending activities.  
**SELECT**

**MONTH(issue\_date) AS Month\_Number,**

**DATENAME(MONTH, issue\_date) AS Months,**

**COUNT(id) AS Total\_Loan\_Application,**

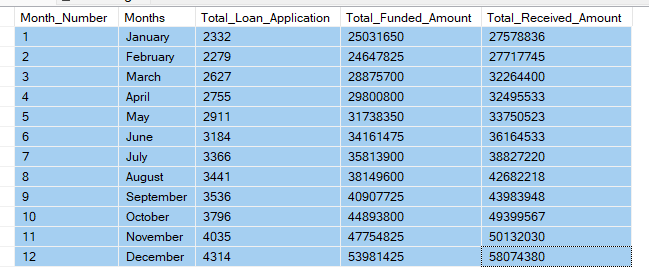
**SUM(loan\_amount) AS Total\_Funded\_Amount,**

**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)**

Result  
  
**2. Regional Analysis by State (Filled Map):** To identify region with significant lending activity and assess regional disparities.

**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\_data**

**GROUP BY address\_state**

**ORDER BY address\_state**Result  
****

**3. Loan Term Analysis (Donut Chart)**: To allow the client to understand the distribution of loans across various term lengths.  
**SELECT**

**term,**

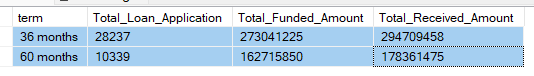
**COUNT(id) AS Total\_Loan\_Application,**

**SUM(loan\_amount) AS Total\_Funded\_Amount,**

**SUM(total\_payment) AS Total\_Received\_Amount**

**FROM bank\_loan\_data**

**GROUP BY term**

**ORDER BY term**Result  
  
  
**4. Employee Length Analysis (Bar Chart)**: How Lending metrics are distributed among borrowers with different employment lengths, helping us assess the impact of employment history on loan application.

**SELECT**

**emp\_length,**

**COUNT(id) AS Total\_Loan\_Application,**

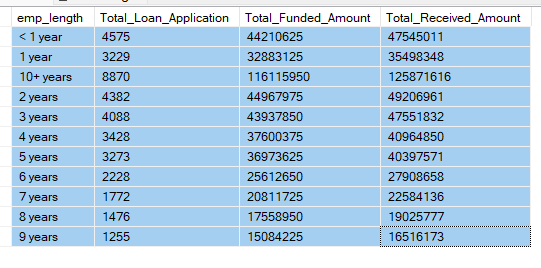
**SUM(loan\_amount) AS Total\_Funded\_Amount,**

**SUM(total\_payment) AS Total\_Received\_Amount**

**FROM bank\_loan\_data**

**GROUP BY emp\_length**

**ORDER BY emp\_length**Result

  
  
  
**5. Loan purpose breakdown (Bar Chart)**: Will provide a visual breakdown of loan metrics based on the stated purposes of loans, aiding in the understanding of the primary reasons borrowers seek financing.  
**SELECT**

**Purpose,**

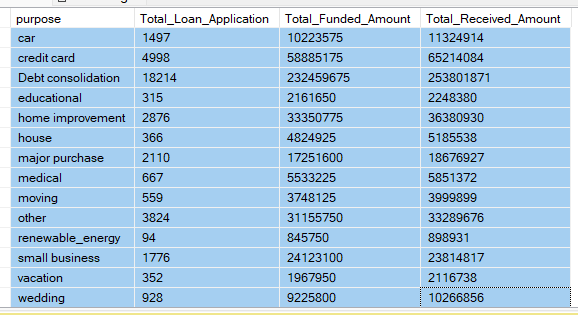
**COUNT(id) AS Total\_Loan\_Application,**

**SUM(loan\_amount) AS Total\_Funded\_Amount,**

**SUM(total\_payment) AS Total\_Received\_Amount**

**FROM bank\_loan\_data**

**GROUP BY purpose**

**ORDER BY purpose**Result  


**6. Home Ownership Analysis (Tree Map)**: For a hierarchical view of how home ownership impacts loan applications and disbursements.  
**SELECT**

**home\_ownership,**

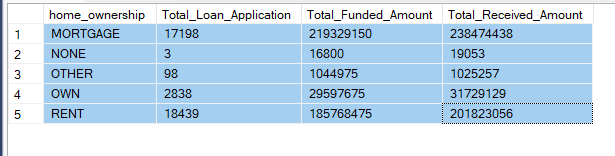
**COUNT(id) AS Total\_Loan\_Application,**

**SUM(loan\_amount) AS Total\_Funded\_Amount,**

**SUM(total\_payment) AS Total\_Received\_Amount**

**FROM bank\_loan\_data**

**GROUP BY home\_ownership**

**ORDER BY home\_ownership**Result  
****