**MY SQL QUERIES DOCUMENT**

**BANK LOAN PROJECT**

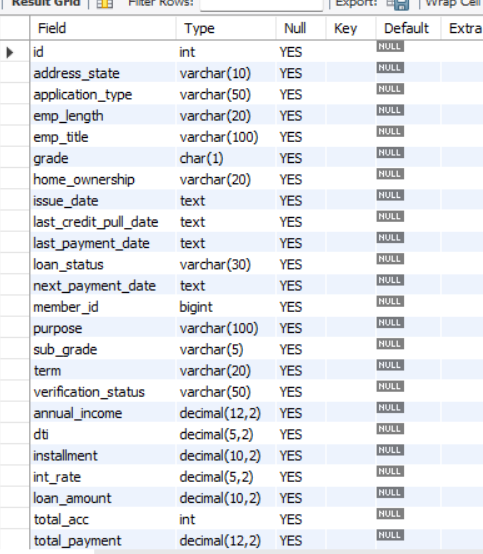
**BANK LOAN REPORT | DATA CLEAN**

* **CREATE bank\_loan\_db DATABASE**

CREATE DATABASE bank\_loan\_db;

* **Data Types of Different Columns Before Cleaning**

DESCRIBE Bank\_loan;

****

* **Convert Date (issue\_date) Column To Proper Date Format**

UPDATE bank\_loan

SET issue\_date = STR\_TO\_DATE(issue\_date,'%d-%m-%Y');

* **Alter Date (issue\_date) Column To Date Data Type**

ALTER TABLE bank\_loan MODIFY COLUMN issue\_date DATE;

* **Convert Date (last\_credit\_pull\_date) Column To Proper Date Format**

UPDATE bank\_loan

SET last\_credit\_pull\_date = STR\_TO\_DATE(last\_credit\_pull\_date,'%d-%m-%Y');

* **Alter Date (last\_credit\_pull\_date) Column To Date Data Type**

ALTER TABLE bank\_loan MODIFY COLUMN last\_credit\_pull\_date DATE;

* **Convert Date (last\_payment\_date) Column To Proper Date Format**

UPDATE bank\_loan

SET last\_payment\_date = STR\_TO\_DATE(last\_payment\_date,'%d-%m-%Y');

* **Alter Date (last\_payment\_date) Column To Date Data Type**

ALTER TABLE bank\_loan MODIFY COLUMN last\_payment\_date DATE;

* **Convert Date (next\_payment\_date) Column To Proper Date Format**

UPDATE bank\_loan

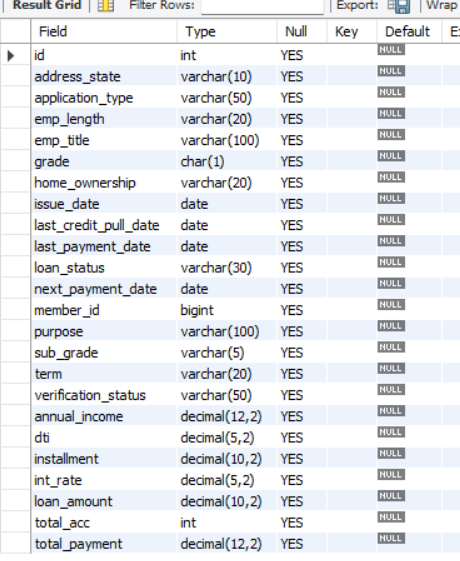
SET next\_payment\_date = STR\_TO\_DATE(next\_payment\_date,'%d-%m-%Y');

* **Alter Date (next\_payment\_date) Column To Date Data Type**

ALTER TABLE bank\_loan MODIFY COLUMN next\_payment\_date DATE;

* **Data Types of Different Columns After Cleaning**

DESCRIBE Bank\_loan;

****

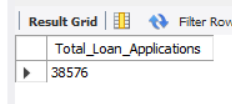
**BANK LOAN REPORT | SUMMARY**

**KPI’s REQUIREMENT**

**1. LOAN APPLICATION ANALYSIS**

1. **Total Application**

SELECT COUNT(id) AS 'Total\_Loan\_Applications' FROM Bank\_loan;

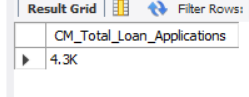


1. **Month\_To\_Date**

SELECT CONCAT(ROUND(COUNT(id)/1000,1),'K') AS 'CM\_Total\_Loan\_Applications'

FROM Bank\_loan

WHERE MONTH(issue\_date)=12 AND YEAR(issue\_date) = 2021; *-- Latest Year is 2021 And Latest Month is Dec*



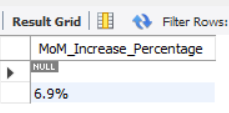
1. **Motnh\_on\_Month**

SELECT CONCAT(ROUND((COUNT(id)-LAG(COUNT(id)) OVER())/LAG(COUNT(id)) OVER()\*100,1),'%') AS 'MoM\_Increase\_Percentage' FROM bank\_loan

WHERE MONTH(issue\_date) IN (11,12) *-- 11 is Previous Month and 12 is Current Month*

AND YEAR(issue\_date) = 2021

GROUP BY MONTH(issue\_date);

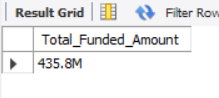


**2. FUND ANALTSIS**

1. **Total Funded Amount**

SELECT CONCAT(ROUND(SUM(loan\_amount)/1000000,1),"M")

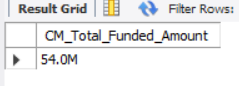
AS 'Total\_Funded\_Amount' FROM Bank\_loan;

****

1. **Month\_To\_Date**

SELECT CONCAT(ROUND(SUM(loan\_amount)/1000000,1),"M") AS 'CM\_Total\_Funded\_Amount' FROM Bank\_loan

WHERE MONTH(issue\_date)=12 AND YEAR(issue\_date) = 2021; *-- Latest Year is 2021 and Latest Month is Dec*

****

1. **Motnh\_on\_Month**

SELECT CONCAT(ROUND((SUM(loan\_amount)-LAG(SUM(loan\_amount)) OVER())/LAG(SUM(loan\_amount)) OVER()\*100,1),'%') AS

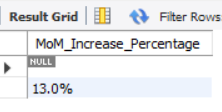
'MoM\_Increase\_Percentage' FROM bank\_loan

WHERE

MONTH(issue\_date) IN (11,12) *-- 11 is Previous Month and 12 is Current Month*

AND YEAR(issue\_date)

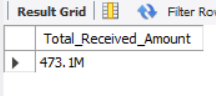
GROUP BY MONTH(issue\_date);

****

**3. AMOUNT RECEIVED ANALTSIS**

1. **Total Received Amount**

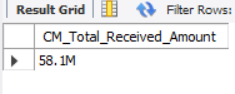
SELECT CONCAT(ROUND(SUM(total\_payment)/1000000,1),"M") AS 'Total\_Received\_Amount' FROM Bank\_loan;



1. **Month\_To\_Date**

SELECT CONCAT(ROUND(SUM(total\_payment)/1000000,1),"M") AS 'CM\_Total\_Received\_Amount' FROM Bank\_loan

WHERE MONTH(issue\_date)=12 AND YEAR(issue\_date) = 2021; *-- Latest Year is 2021 and Latest Month is Dec*



1. **Motnh\_on\_Month**

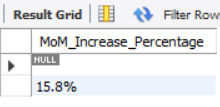
SELECT CONCAT(ROUND((SUM(total\_payment)-LAG(SUM(total\_payment)) OVER())/LAG(SUM(total\_payment)) OVER()\*100,1),'%')

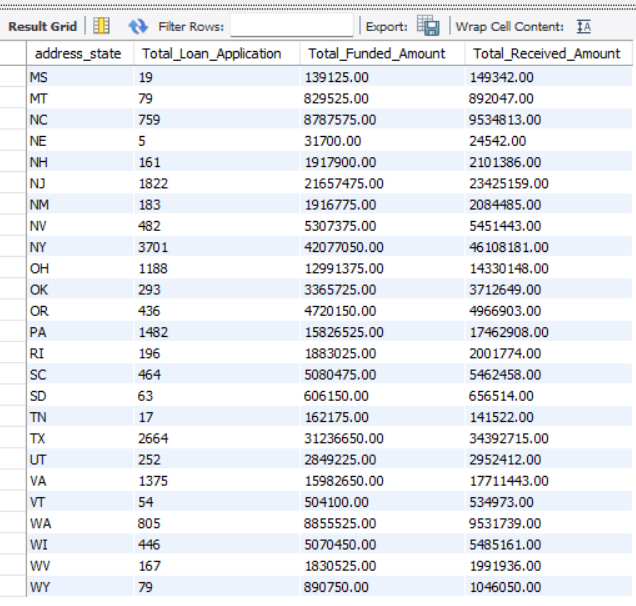
AS 'MoM\_Increase\_Percentage' FROM bank\_loan

WHERE MONTH(issue\_date) IN (11,12) *-- 11 is Previous Month and 12 is Current Month*

AND YEAR(issue\_date)

GROUP BY MONTH(issue\_date);

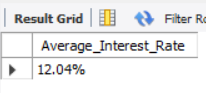




**4. INTEREST RATE ANALTSIS**

1. **Average Interest Rate**

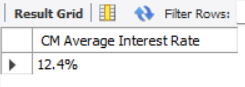
SELECTCONCAT(ROUND(AVG(INt\_rate)\*100,2),'%') AS 'Average\_Interest\_Rate' FROM Bank\_loan;



1. **Month\_To\_Date**

SELECT CONCAT(ROUND(AVG(int\_rate)\*100,1),'%') AS 'CM\_Average\_Interest\_Rate' FROM Bank\_loan

WHERE MONTH(issue\_date)=12 AND YEAR(issue\_date) = 2021; *-- Latest Year is 2021 and Latest Month is Dec*



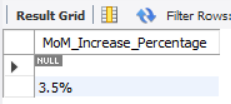
1. **Motnh\_on\_Month**

SELECT CONCAT(ROUND((AVG(int\_rate)-LAG(AVG(int\_rate)) OVER())/LAG(AVG(int\_rate)) OVER()\*100,1),'%') AS 'MoM\_Increase\_Percentage' FROM bank\_loan

WHERE MONTH(issue\_date) IN (11,12) *-- 11 is Previous Month and 12 is Current Month*

AND YEAR(issue\_date)

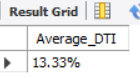
GROUP BY MONTH(issue\_date);



**5. DEBT-TO-INCOME RATIO (DTI) ANALYSIS**

1. **Average Debt-to-Income Ratio**

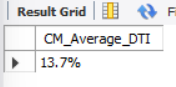
SELECT CONCAT(ROUND(AVG(dti)\*100,2),'%') AS 'Average\_DTI' FROM Bank\_loan;



1. **Month\_To\_Date**

SELECT CONCAT(ROUND(AVG(dti)\*100,1),'%') AS 'CM\_Average\_DTI' FROM Bank\_loan

WHERE MONTH(issue\_date)=12 AND YEAR(issue\_date) = 2021; *-- Latest Year is 2021 and Latest Month is Dec*



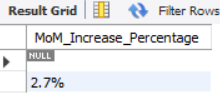
1. **Motnh\_on\_Month**

SELECT CONCAT(ROUND((AVG(dti)-LAG(AVG(dti)) OVER())/LAG(AVG(dti)) OVER()\*100,1),'%') AS 'MoM\_Increase\_Percentage' FROM bank\_loan

WHERE MONTH(issue\_date) IN (11,12) *-- 11 is Previous Month and 12 is Current Month*

AND YEAR(issue\_date)

GROUP BY MONTH(issue\_date);



**GOOD LOAN ANALYSIS**

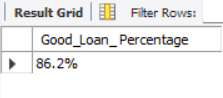
1. **Good Loan Percentage**

WITH Cte\_Good AS

(SELECT COUNT(id) FROM bank\_loan

WHERE loan\_status IN ('Current','Fully Paid'))

SELECT CONCAT(ROUND((SELECT \* FROM Cte\_Good)/COUNT(\*)\*100,1),'%') AS 'Good\_Loan\_ Percentage' FROM bank\_loan;

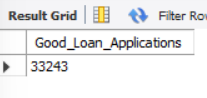


1. **Good Loan Applications**

SELECT COUNT(id) AS 'Good\_Loan\_Applications'

FROM Bank\_loan

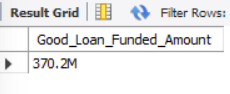
WHERE loan\_status IN ('Current' , 'Fully Paid');



1. **Good Loan Funded Amount**

SELECT CONCAT(ROUND(SUM(loan\_amount)/1000000,1),"M") AS 'Good\_Loan\_Funded\_Amount' FROM Bank\_loan

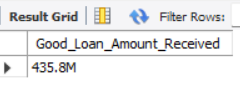
WHERE loan\_status IN ('Current' , 'Fully Paid');



1. **Good Loan Amount Received**

SELECT CONCAT(ROUND(SUM(total\_payment)/1000000,1),"M") AS 'Good\_Loan\_Amount\_Received' FROM Bank\_loan

WHERE loan\_status IN ('Current' , 'Fully Paid');



**BAD LOAN ANALYSIS**

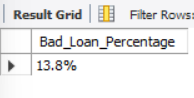
1. **Bad Loan Percentage**

WITH Bad\_loan\_Calcultion AS

(SELECT COUNT(id) AS Total\_Application,

SUM(CASE WHEN loan\_status IN ('Charged Off') THEN 1 ELSE 0 END) AS Bad\_Application FROM bank\_loan)

SELECT CONCAT(ROUND(Bad\_Application/Total\_Application\*100,1),'%') AS 'Bad\_Loan\_Percentage' FROM Bad\_loan\_Calcultion;

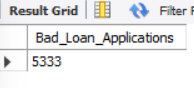


1. **Bad Loan Applications**

SELECT COUNT(id) AS 'Bad\_Loan\_Applications'

FROM Bank\_loan

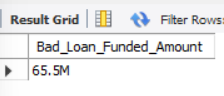
WHERE loan\_status ='Charged Off';



1. **Bad Loan Funded Amount**

SELECT CONCAT(ROUND(SUM(loan\_amount)/1000000,1),"M") AS 'Bad\_Loan\_Funded\_Amount' FROM Bank\_loan

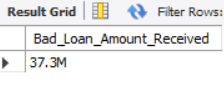
WHERE loan\_status ='Charged Off';



1. **Bad Loan Amount Received**

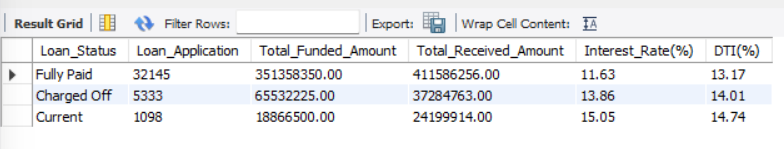
SELECT CONCAT(ROUND(SUM(total\_payment)/1000000,1),"M") AS 'Bad\_Loan\_Amount\_Received' FROM Bank\_loan

WHERE loan\_status ='Charged Off';



**LOAN STATUS**

SELECT loan\_status AS 'Loan\_Status',COUNT(id) AS 'Loan\_Application',SUM(loan\_amount) AS 'Total\_Funded\_Amount' , SUM(total\_payment) AS 'Total\_Received\_Amount', ROUND(AVG(int\_rate)\*100,2) AS "Interest\_Rate(%)", ROUND(AVG(dti)\*100,2) AS "DTI(%)" FROM bank\_loan GROUP BY loan\_status ORDER BY Loan\_Application desc;

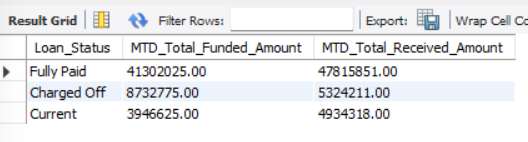


SELECT loan\_status AS 'Loan\_Status',SUM(loan\_amount) AS 'MTD\_Total\_Funded\_Amount' ,

SUM(total\_payment) AS 'MTD\_Total\_Received\_Amount' FROM bank\_loan

WHERE MONTH(issue\_date)=12 AND YEAR(issue\_date) = 2021 -- Latest Year is 2021 and Latest Month is Dec

GROUP BY loan\_status;



**BANK LOAN REPORT | OVERVIEW**

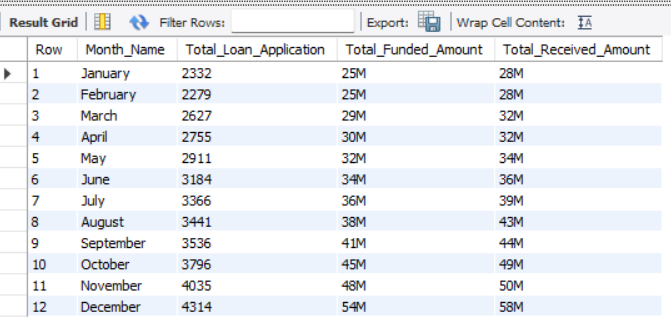
1. **Monthly Trends By Issued Date**

SELECT MONTH(issue\_date) AS 'Row',MONTHNAME(issue\_date) AS 'Month\_Name',

COUNT(id) AS 'Total\_Loan\_Application',CONCAT(ROUND(SUM(loan\_amount)/1000000),"M") AS 'Total\_Funded\_Amount' , CONCAT(ROUND(SUM(total\_payment)/1000000),"M") AS 'Total\_Received\_Amount' FROM bank\_loan

GROUP BY MONTH(issue\_date),MONTHNAME(issue\_date)

ORDER BY MONTH(issue\_date) ASC;



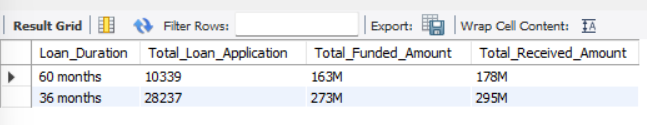
1. **Loan Term Analysis**

SELECT Term AS 'Loan\_Duration',COUNT(id) AS 'Total\_Loan\_Application',

CONCAT(ROUND(SUM(loan\_amount)/1000000),"M") AS 'Total\_Funded\_Amount' ,

CONCAT(ROUND(SUM(total\_payment)/1000000),"M") AS 'Total\_Received\_Amount' FROM bank\_loan

GROUP BY Term;



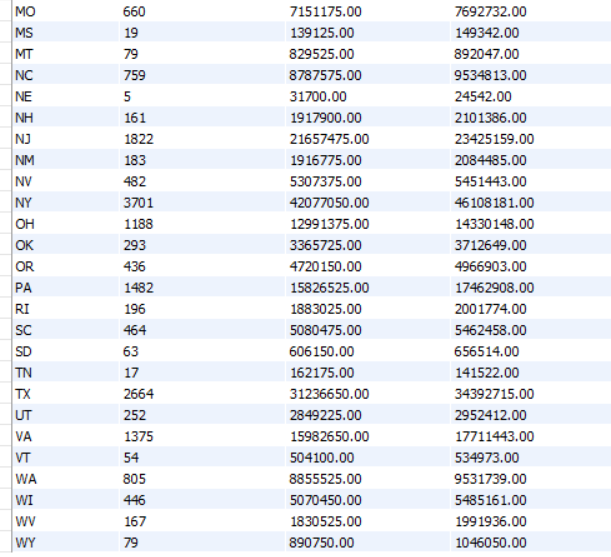
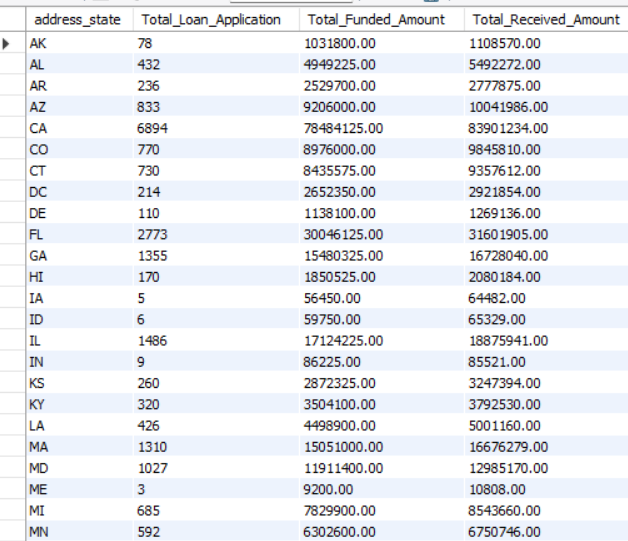
1. **Regional Analysis By State**

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

GROUP BY address\_state

ORDER BY address\_state ASC;



1. **Employee Length Analysis**

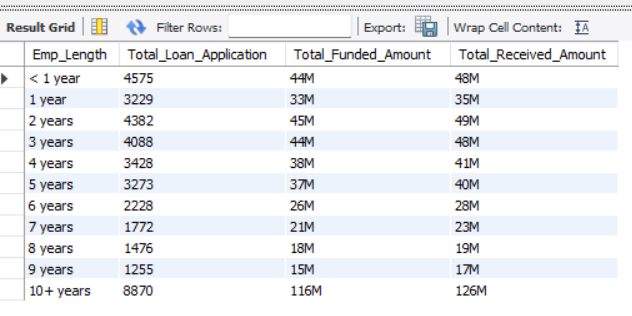
SELECT emp\_length AS 'Emp\_Length' ,COUNT(id) AS 'Total\_Loan\_Application',

CONCAT(ROUND(SUM(loan\_amount)/1000000),"M") AS 'Total\_Funded\_Amount' ,

CONCAT(ROUND(SUM(total\_payment)/1000000),"M") AS 'Total\_Received\_Amount' FROM bank\_loan

GROUP BY emp\_length

ORDER BY CAST(SUBSTRING(emp\_length,1,2) AS UNSIGNED) ASC;

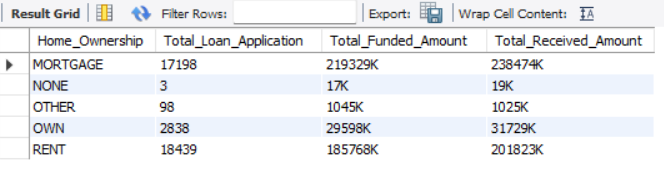


1. **Home Ownership Analysis**

SELECT home\_ownership AS 'Home\_Ownership',COUNT(id) AS 'Total\_Loan\_Application',CONCAT(ROUND(SUM(loan\_amount)/1000),"K") AS 'Total\_Funded\_Amount' ,

CONCAT(ROUND(SUM(total\_payment)/1000),"K") AS 'Total\_Received\_Amount' FROM bank\_loan

GROUP BY home\_ownership

ORDER BY home\_ownership ASC;

1. **Loan Purpose Analysis**

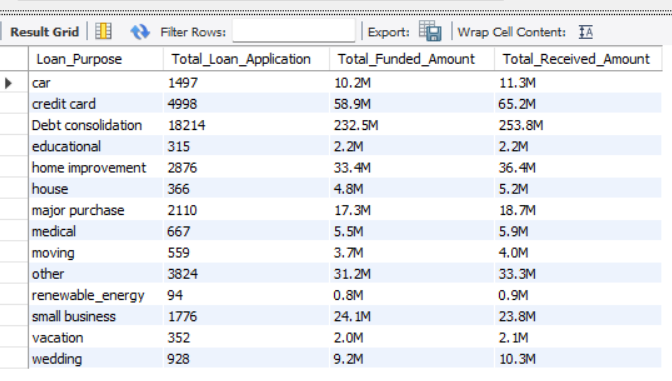
SELECT purpose AS 'Loan\_Purpose',COUNT(id) AS 'Total\_Loan\_Application',

CONCAT(ROUND(SUM(loan\_amount)/1000000,1),"M") AS 'Total\_Funded\_Amount' ,

CONCAT(ROUND(SUM(total\_payment)/1000000,1),"M") AS 'Total\_Received\_Amount' FROM bank\_loan

GROUP BY purpose

ORDER BY purpose ASC;



1. **Overall Detailed Analysis**

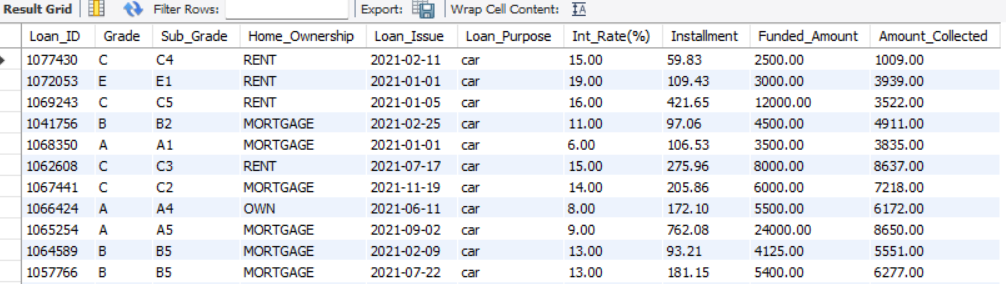
SELECT id AS 'Loan\_ID', grade AS 'Grade' , sub\_grade AS 'Sub\_Grade', home\_ownership AS 'Home\_Ownership',

issue\_date AS 'Loan\_Issue',

purpose AS 'Loan\_Purpose',

int\_rate\*100 AS 'Int\_Rate(%)',installment AS Installment, loan\_amount AS 'Funded\_Amount',

total\_payment AS 'Amount\_Collected' FROM Bank\_loan;

****