

Bank_loan.sql - VINAY\SQLEXPRESS.bank_loan (VINAY\vinay (53))* - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

New Query MDX DMX XMLA DAX

bank_loan Execute

Object Explorer

VINAY\SQLEXPRESS (SQL Server 16.0.1135 - Vin)

- Databases
- System Databases
- Database Snapshots
- AdventureWorks2022
- AdventureWorksDW2022
- bank_loan
 - Database Diagrams
 - Tables
 - System Tables
 - FileTables
 - External Tables
 - Graph Tables
- dbo.loanData
 - Columns
 - id (PK, int, not null)
 - address_state (varchar(50), not null)
 - application_type (varchar(50), not null)
 - emp_length (varchar(50), not null)
 - emp_title (varchar(50), not null)
 - grade (varchar(50), not null)
 - home_ownership (varchar(50), not null)
 - issue_date (date, not null)
 - last_credit_pull_date (date, not null)
 - last_payment_date (date, not null)
 - loan_status (varchar(50), not null)
 - next_payment_date (date, not null)

--KPI Calculations

-- 1. Total Loan Applications (Overall & MTD)

```
select count(id) as Total_application,
       count(case when month(issue_date) = month(getdate()) and
year(issue_date) = year(getdate()) then id end) as MTD_Application
  from loandata;
```

Results

Total_application	MTD_Application
40000	511

Query executed successfully.

VINAY\SQLEXPRESS (16.0 RTM) | VINAY\vinay (53) | bank_loan | 00:00:00 | 1 rows

Ready

Ln 9 Col 15 Ch 15 INS

Bank_loan.sql - VINAY\SQLEXPRESS.bank_loan (VINAY\vinay (53))* - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

New Query MDX DMX XMLA DAX

bank_loan Execute

Object Explorer

VINAY\SQLEXPRESS (SQL Server 16.0.1135 - Vin)

- Databases
- System Databases
- Database Snapshots
- AdventureWorks2022
- AdventureWorksDW2022
- bank_loan
 - Database Diagrams
 - Tables
 - System Tables
 - FileTables
 - External Tables
 - Graph Tables
 - dbo.loanData
 - Columns
 - id (PK, int, not null)
 - address_state (varchar(50), not null)
 - application_type (varchar(50), not null)
 - emp_length (varchar(50), not null)
 - emp_title (varchar(50), not null)
 - grade (varchar(50), not null)
 - home_ownership (varchar(50), not null)
 - issue_date (date, not null)
 - last_credit_pull_date (date, not null)
 - last_payment_date (date, not null)
 - loan_status (varchar(50), not null)
 - next_payment_date (date, not null)

-- 2. Total Funded Amount (Overall & MTD)

```
select sum(loan_amount) as Overall_fund,
sum(case when month(issue_date) = month(getdate()) and
year(issue_date) = year(getdate()) then loan_amount else 0 end ) as MTD_total_fund
from loandata;
```

Results

	Overall_fund	MTD_total_fund
1	1040622620	13606316

Query executed successfully.

VINAY\SQLEXPRESS (16.0 RTM) | VINAY\vinay (53) | bank_loan | 00:00:00 | 1 rows

Ln 20 Col 1 Ch 1 INS

Ready

Bank_loan.sql - VINAY\SQLEXPRESS.bank_loan (VINAY\vinay (53))* - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

New Query MDX DMX XMLA DAX

bank_loan Execute

Object Explorer

VINAY\SQLEXPRESS (SQL Server 16.0.1135 - Vin)

- Databases
 - System Databases
 - Database Snapshots
 - AdventureWorks2022
 - AdventureWorksDW2022
- bank_loan
 - Database Diagrams
 - Tables
 - System Tables
 - FileTables
 - External Tables
 - Graph Tables
 - dbo.loanData
 - Columns
 - id (PK, int, not null)
 - address_state (varchar(50), not null)
 - application_type (varchar(50), not null)
 - emp_length (varchar(50), not null)
 - emp_title (varchar(50), not null)
 - grade (varchar(50), not null)
 - home_ownership (varchar(50), not null)
 - issue_date (date, not null)
 - last_credit_pull_date (date, not null)
 - last_payment_date (date, not null)
 - loan_status (varchar(50), not null)
 - next_payment_date (date, not null)

--3. Total Amount Received (Overall & MTD)

```
select sum(total_payment) as Overall_amount_recieved,
sum(case when month(issue_date) = month(getdate()) and
year(issue_date) = year(getdate()) then total_payment else 0 end) as MTD_amount_recieved
from loandata;
```

Results

	Overall_amount_recieved	MTD_amount_recieved
1	420942275	5506303

Query executed successfully.

VINAY\SQLEXPRESS (16.0 RTM) | VINAY\vinay (53) | bank_loan | 00:00:00 | 1 rows

Ln 27 Col 1 Ch 1 INS

Ready

Bank_loan.sql - VINAY\SQLEXPRESS.bank_loan (VINAY\vinay (53))* - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

New Query MDX DMX XMLA DAX

bank_loan Execute

Object Explorer

VINAY\SQLEXPRESS (SQL Server 16.0.1135 - Vin)

- Databases
 - System Databases
 - Database Snapshots
 - AdventureWorks2022
 - AdventureWorksDW2022
- bank_loan
 - Database Diagrams
 - Tables
 - System Tables
 - FileTables
 - External Tables
 - Graph Tables
 - dbo.loanData
 - Columns
 - id (PK, int, not null)
 - address_state (varchar(50), not null)
 - application_type (varchar(50), not null)
 - emp_length (varchar(50), not null)
 - emp_title (varchar(50), not null)
 - grade (varchar(50), not null)
 - home_ownership (varchar(50), not null)
 - issue_date (date, not null)
 - last_credit_pull_date (date, not null)
 - last_payment_date (date, not null)
 - loan_status (varchar(50), not null)
 - next_payment_date (date, not null)

--4. Average Interest Rate (Overall & MTD)

```
select round(avg(int_rate)*100.0,3) as Overall_intrest_rate,
round(avg(case when month(issue_date) = month(getdate()) and
year(issue_date) = year(getdate()) then int_rate end)*100.0,3) as MTD_Intrest_rate
from loandata;
```

Results Messages

	Overall_intrest_rate	MTD_Intrest_rate
1	12.511	12.439

Query executed successfully.

VINAY\SQLEXPRESS (16.0 RTM) | VINAY\vinay (53) | bank_loan | 00:00:00 | 1 rows

Ready Ln 40 Col 1 Ch 1 INS

Bank_loan.sql - VINAY\SQLEXPRESS.bank_loan (VINAY\vinay (53))* - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

New Query MDX DMX XMLA DAX

bank_loan Execute

Object Explorer

VINAY\SQLEXPRESS (SQL Server 16.0.1135 - Vin)

- Databases
 - System Databases
 - Database Snapshots
- AdventureWorks2022
- AdventureWorksDW2022
- bank_loan
 - Database Diagrams
 - Tables
 - System Tables
 - FileTables
 - External Tables
 - Graph Tables
 - dbo.loanData
 - Columns
 - id (PK, int, not null)
 - address_state (varchar(50), not null)
 - application_type (varchar(50), not null)
 - emp_length (varchar(50), not null)
 - emp_title (varchar(50), not null)
 - grade (varchar(50), not null)
 - home_ownership (varchar(50), not null)
 - issue_date (date, not null)
 - last_credit_pull_date (date, not null)
 - last_payment_date (date, not null)
 - loan_status (varchar(50), not null)
 - next_payment_date (date, not null)

--5. Average Debt-to-Income Ratio (DTI) (Overall & MTD)

```
select round(avg(dtি)*100.0,3) as Overall_Dti,
round(avg(case when month(issue_date) = month(getdate()) and
year(issue_date) = year(getdate()) then dtি end)*100.0,3) as MTD_Dti
from loandata;
```

Results

	Overall_Dti	MTD_Dti
1	15.468	14.766

Query executed successfully.

VINAY\SQLEXPRESS (16.0 RTM) | VINAY\vinay (53) | bank_loan | 00:00:00 | 1 rows

Ready

Ln 47 Col 15 Ch 15 INS

Bank_loan.sql - VINAY\SQLEXPRESS.bank_loan (VINAY\vinay (53))* - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

New Query MDX DMX XMLA DAX

bank_loan Execute

Object Explorer

VINAY\SQLEXPRESS (SQL Server 16.0.1135 - Vin)

- Databases
- System Databases
- Database Snapshots
- AdventureWorks2022
- AdventureWorksDW2022
- bank_loan
 - Database Diagrams
 - Tables
 - System Tables
 - FileTables
 - External Tables
 - Graph Tables
 - dbo.loanData
 - Columns
 - id (PK, int, not null)
 - address_state (varchar(50), not null)
 - application_type (varchar(50), not null)
 - emp_length (varchar(50), not null)
 - emp_title (varchar(50), not null)
 - grade (varchar(50), not null)
 - home_ownership (varchar(50), not null)
 - issue_date (date, not null)
 - last_credit_pull_date (date, not null)
 - last_payment_date (date, not null)
 - loan_status (varchar(50), not null)
 - next_payment_date (date, not null)

--1. Good Loan Application Percentage

```
select (count(case when loan_status in ('Fully Paid', 'Current') then id end)*100.0/count(id)) as good_loan_percentage from loandata;
```

Results

good_loan_percentage
50.245000000000

Messages

Query executed successfully.

VINAY\SQLEXPRESS (16.0 RTM) | VINAY\vinay (53) | bank_loan | 00:00:00 | 1 rows

Ln 58 Col 1 Ch 1 INS

Ready

Bank_loan.sql - VINAY\SQLEXPRESS.bank_loan (VINAY\vinay (53))* - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

New Query MDX DML XMLA DAX

bank_loan Execute

Object Explorer

VINAY\SQLEXPRESS (SQL Server 16.0.1135 - Vin)

- Databases
 - System Databases
 - Database Snapshots
- AdventureWorks2022
- AdventureWorksDW2022
- bank_loan
 - Database Diagrams
 - Tables
 - System Tables
 - FileTables
 - External Tables
 - Graph Tables
 - dbo.loanData
 - Columns
 - id (PK, int, not null)
 - address_state (varchar(50), not null)
 - application_type (varchar(50), not null)
 - emp_length (varchar(50), not null)
 - emp_title (varchar(50), not null)
 - grade (varchar(50), not null)
 - home_ownership (varchar(50), not null)
 - issue_date (date, not null)
 - last_credit_pull_date (date, not null)
 - last_payment_date (date, not null)
 - loan_status (varchar(50), not null)
 - next_payment_date (date, not null)

-- 2. Good Loan Applications

```
select count(id) as good_loan_application from loandata
where loan_status in ('Fully Paid', 'Current');
```

Results

good_loan_application
1 20098

Query executed successfully.

VINAY\SQLEXPRESS (16.0 RTM) | VINAY\vinay (53) | bank_loan | 00:00:00 | 1 rows

Ln 65 Col 1 Ch 1 INS

Ready

Bank_loan.sql - VINAY\SQLEXPRESS.bank_loan (VINAY\vinay (53))* - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

New Query MDX DMX XMLA DAX

bank_loan Execute

Object Explorer

VINAY\SQLEXPRESS (SQL Server 16.0.1135 - Vin)

- Databases
- System Databases
- Database Snapshots
- AdventureWorks2022
- AdventureWorksDW2022
- bank_loan
 - Database Diagrams
 - Tables
 - System Tables
 - FileTables
 - External Tables
 - Graph Tables
 - dbo.loanData
 - Columns
 - id (PK, int, not null)
 - address_state (varchar(50), not null)
 - application_type (varchar(50), not null)
 - emp_length (varchar(50), not null)
 - emp_title (varchar(50), not null)
 - grade (varchar(50), not null)
 - home_ownership (varchar(50), not null)
 - issue_date (date, not null)
 - last_credit_pull_date (date, not null)
 - last_payment_date (date, not null)
 - loan_status (varchar(50), not null)
 - next_payment_date (date, not null)

--3. Good Loan Funded Amount

```
select sum(loan_amount) as Total_Good_load_fund
from loandata
where loan_status in ('Fully Paid', 'Current');
```

Results

Total_Good_load_fund
521994347

Messages

Query executed successfully.

VINAY\SQLEXPRESS (16.0 RTM) | VINAY\vinay (53) | bank_loan | 00:00:03 | 1 rows

Ln 73 Col 1 Ch 1 INS

Ready

Bank_loan.sql - VINAY\SQLEXPRESS.bank_loan (VINAY\vinay (53))* - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

New Query MDX DML XMLE DAX

bank_loan Execute

Object Explorer

VINAY\SQLEXPRESS (SQL Server 16.0.1135 - Vin)

- Databases
- System Databases
- Database Snapshots
- AdventureWorks2022
- AdventureWorksDW2022
- bank_loan
 - Database Diagrams
 - Tables
 - System Tables
 - FileTables
 - External Tables
 - Graph Tables
 - dbo.loanData
 - Columns
 - id (PK, int, not null)
 - address_state (varchar(50), not null)
 - application_type (varchar(50), not null)
 - emp_length (varchar(50), not null)
 - emp_title (varchar(50), not null)
 - grade (varchar(50), not null)
 - home_ownership (varchar(50), not null)
 - issue_date (date, not null)
 - last_credit_pull_date (date, not null)
 - last_payment_date (date, not null)
 - loan_status (varchar(50), not null)
 - next_payment_date (date, not null)

--4. Good Loan Total Received Amount

```
select sum(total_payment) as Total_Received_Good_loan_amount
from loandata
where loan_status in ('Fully Paid', 'Current');
```

Results

Total_Received_Good_loan_amount
1 212294767

Messages

Query executed successfully.

VINAY\SQLEXPRESS (16.0 RTM) | VINAY\vinay (53) | bank_loan | 00:00:00 | 1 rows

Ln 79 Col 1 Ch 1 INS

Ready

Bank_loan.sql - VINAY\SQLEXPRESS.bank_loan (VINAY\vinay (53))* - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

New Query MDX DMX XMLA DAX

bank_loan Execute

Object Explorer

VINAY\SQLEXPRESS (SQL Server 16.0.1135 - Vin)

- Databases
 - System Databases
 - Database Snapshots
 - AdventureWorks2022
 - AdventureWorksDW2022
- bank_loan
 - Database Diagrams
 - Tables
 - System Tables
 - FileTables
 - External Tables
 - Graph Tables
 - dbo.loanData
 - Columns
 - id (PK, int, not null)
 - address_state (varchar(50), not null)
 - application_type (varchar(50), not null)
 - emp_length (varchar(50), not null)
 - emp_title (varchar(50), not null)
 - grade (varchar(50), not null)
 - home_ownership (varchar(50), not null)
 - issue_date (date, not null)
 - last_credit_pull_date (date, not null)
 - last_payment_date (date, not null)
 - loan_status (varchar(50), not null)
 - next_payment_date (date, not null)

--5. Bad Loan Application Percentage

```
select count(case when loan_status = 'Charged Off' then id end)*100.0/count(id)
as Bad_loan_percentage
from loandata;
```

Results

Bad_loan_percentage
1 24.830000000000

Query executed successfully.

VINAY\SQLEXPRESS (16.0 RTM) | VINAY\vinay (53) | bank_loan | 00:00:00 | 1 rows

Ready Ln 87 Col 1 Ch 1 INS

Bank_loan.sql - VINAY\SQLEXPRESS.bank_loan (VINAY\vinay (53))* - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

New Query MDX DMX XMLA DAX

bank_loan Execute

Object Explorer

VINAY\SQLEXPRESS (SQL Server 16.0.1135 - Vin)

- Databases
- System Databases
- Database Snapshots
- AdventureWorks2022
- AdventureWorksDW2022
- bank_loan
 - Database Diagrams
 - Tables
 - System Tables
 - FileTables
 - External Tables
 - Graph Tables
 - dbo.loanData
 - Columns
 - id (PK, int, not null)
 - address_state (varchar(50), not null)
 - application_type (varchar(50), not null)
 - emp_length (varchar(50), not null)
 - emp_title (varchar(50), not null)
 - grade (varchar(50), not null)
 - home_ownership (varchar(50), not null)
 - issue_date (date, not null)
 - last_credit_pull_date (date, not null)
 - last_payment_date (date, not null)
 - loan_status (varchar(50), not null)
 - next_payment_date (date, not null)

--6. Bad Loan Applications

```
select count(id) as Bad_loan_application
from loandata
where loan_status = 'Charged Off';
```

Results

Bad_loan_application
9932

Query executed successfully.

VINAY\SQLEXPRESS (16.0 RTM) | VINAY\vinay (53) | bank_loan | 00:00:00 | 1 rows

Ready Ln 94 Col 1 Ch 1 INS

Bank_loan.sql - VINAY\SQLEXPRESS.bank_loan (VINAY\vinay (53))* - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

New Query MDX DMX XMLA DAX

bank_loan Execute

Object Explorer

VINAY\SQLEXPRESS (SQL Server 16.0.1135 - Vin)

- Databases
- System Databases
- Database Snapshots
- AdventureWorks2022
- AdventureWorksDW2022
- bank_loan
 - Database Diagrams
 - Tables
 - System Tables
 - FileTables
 - External Tables
 - Graph Tables
 - dbo.loanData
 - Columns
 - id (PK, int, not null)
 - address_state (varchar(50), not null)
 - application_type (varchar(50), not null)
 - emp_length (varchar(50), not null)
 - emp_title (varchar(50), not null)
 - grade (varchar(50), not null)
 - home_ownership (varchar(50), not null)
 - issue_date (date, not null)
 - last_credit_pull_date (date, not null)
 - last_payment_date (date, not null)
 - loan_status (varchar(50), not null)
 - next_payment_date (date, not null)

--7. Bad Loan Funded Amount

```
select sum(loan_amount) as Total_Bad_loan_fund
from loandata
where loan_status = 'Charged off';
```

Results

Total_Bad_loan_fund
1 257940383

Messages

Query executed successfully.

VINAY\SQLEXPRESS (16.0 RTM) | VINAY\vinay (53) | bank_loan | 00:00:00 | 1 rows

Ln 102 Col 1 Ch 1 INS

Ready

Bank_loan.sql - VINAY\SQLEXPRESS.bank_loan (VINAY\vinay (53))* - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

New Query MDX DML XMLA DAX

bank_loan Execute

Object Explorer

VINAY\SQLEXPRESS (SQL Server 16.0.1135 - Vin)

- Databases
- System Databases
- Database Snapshots
- AdventureWorks2022
- AdventureWorksDW2022
- bank_loan
 - Database Diagrams
 - Tables
 - System Tables
 - FileTables
 - External Tables
 - Graph Tables
 - dbo.loanData
 - Columns
 - id (PK, int, not null)
 - address_state (varchar(50), not null)
 - application_type (varchar(50), not null)
 - emp_length (varchar(50), not null)
 - emp_title (varchar(50), not null)
 - grade (varchar(50), not null)
 - home_ownership (varchar(50), not null)
 - issue_date (date, not null)
 - last_credit_pull_date (date, not null)
 - last_payment_date (date, not null)
 - loan_status (varchar(50), not null)
 - next_payment_date (date, not null)

--8. Bad Loan Total Received Amount

```
select sum(total_payment) as Total_Received_Bad_loan_amount
from loandata
where loan_status = 'Charged off';
```

121 %

Results Messages

Total_Received_Bad_loan_amount
104475080

Query executed successfully.

VINAY\SQLEXPRESS (16.0 RTM) | VINAY\vinay (53) | bank_loan | 00:00:00 | 1 rows

Ready Ln 108 Col 35 Ch 35 INS

Bank_loan.sql - VINAY\SQLEXPRESS.bank_loan (VINAY\vinay (53))* - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

New Query MDX DMX XMLA DAX

bank_loan Execute

Object Explorer

VINAY\SQLEXPRESS (SQL Server 16.0.1135 - Vin)

- Databases
- System Databases
- Database Snapshots
- AdventureWorks2022
- AdventureWorksDW2022
- bank_loan
 - Database Diagrams
 - Tables
 - System Tables
 - FileTables
 - External Tables
 - Graph Tables
 - dbo.loanData
 - Columns
 - id (PK, int, not null)
 - address_state (varchar(50), not null)
 - application_type (varchar(50), not null)
 - emp_length (varchar(50), not null)
 - emp_title (varchar(50), not null)
 - grade (varchar(50), not null)
 - home_ownership (varchar(50), not null)
 - issue_date (date, not null)
 - last_credit_pull_date (date, not null)
 - last_payment_date (date, not null)
 - loan_status (varchar(50), not null)
 - next_payment_date (date, not null)

-- Loan Status Grid View Report

/*Question:
How can we analyze the distribution of loans based on their status
while tracking key financial metrics such as total loan applications,
funded amounts, total received payments, month-to-date (MTD) funded amounts,
MTD received amounts, average interest rates, and average debt-to-income (DTI) ratios? */

```
select loan_status,
count(id) as Total_loan_applications,
sum(loan_amount) as Total_funded_amount,
sum(total_payment) as Total_recieved_amount,
sum(case when month(issue_date) = month(getdate()) and year(issue_date) = year(getdate()) then loan_amount end) as MTD_Funded_amount,
sum(case when month(issue_date) = month(getdate()) and year(issue_date) = year(getdate()) then total_payment end) as MTD_Received_amount,
round(avg(int_rate)*100.0,5) as Average_intrest_rate,
round(avg(dtci)*100.0,5) as Average_Debt_to_income
from loandata
group by loan_status;
```

Advanced SQL Questions

Results Messages

loan_status	Total_loan_applications	Total_funded_amount	Total_recieved_amount	MTD_Funded_amount	MTD_Received_amount	Average_intrest_rate	Average_Debt_to_income
1 Late	9970	260687890	104172428	3286443	1255046	12.52602	15.37287
2 Fully Paid	9989	261501220	106198180	3307645	1339734	12.50642	15.38698
3 Charged Off	9932	257940383	104475080	2799953	1181065	12.52487	15.58348
4 Current	10109	260493127	106096587	4212275	1730458	12.4861	15.52945

Query executed successfully.

VINAY\SQLEXPRESS (16.0 RTM) | VINAY\vinay (53) | bank_loan | 00:00:00 | 4 rows

Ln 130 Col 1 Ch 1 INS

Ready

Bank_loan.sql - VINAY\SQLEXPRESS.bank_loan (VINAY\vinay (53))* - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

New Query MDX DML XMLE DAX

bank_loan Execute

Object Explorer

VINAY\SQLEXPRESS (SQL Server 16.0.1135 - Vin)

- Databases
- System Databases
- Database Snapshots
- AdventureWorks2022
- AdventureWorksDW2022
- bank_loan
 - Database Diagrams
 - Tables
 - System Tables
 - FileTables
 - External Tables
 - Graph Tables
 - dbo.loanData
 - Columns
 - id (PK, int, not null)
 - address_state (varchar(50), not null)
 - application_type (varchar(50), not null)
 - emp_length (varchar(50), not null)
 - emp_title (varchar(50), not null)
 - grade (varchar(50), not null)
 - home_ownership (varchar(50), not null)
 - issue_date (date, not null)
 - last_credit_pull_date (date, not null)
 - last_payment_date (date, not null)
 - loan_status (varchar(50), not null)
 - next_payment_date (date, not null)

--Advanced SQL Questions

--1. Loan Performance Over Time

```
/* Question: How has the total loan amount, total received amount, and average interest rate changed over the past 12 months? */

select year(issue_date) as year,
       datename(month,issue_date) as month,
       count(id) as Total_Loan_applications,
       sum(loan_amount) as Total_loan_amount,
       sum(total_payment) as Total_received_amount,
       round(avg(int_rate)*100.0,5) as Average_interest_rate
  from loandata
 where issue_date >= dateadd(year,-1,getdate())
 group by year(issue_date),datename(month,issue_date),month(issue_date)
 order by year(issue_date) desc,month(issue_date) desc;
```

Results

year	month	Total_Loan_applications	Total_loan_amount	Total_received_amount	Average_interest_rate	
1	2025	February	511	13606316	5506303	12.43885
2	2025	January	3032	78128896	32404216	12.50447
3	2024	December	3064	79759982	32316015	12.42487
4	2024	November	2896	75548575	30328762	12.56231
5	2024	October	3033	78047857	32175492	12.4959
6	2024	September	2954	77473267	31006495	12.64045
7	2024	August	3042	78291972	32315164	12.3187
8	2024	July	3096	79950293	32249641	12.48776

Query executed successfully.

VINAY\SQLEXPRESS (16.0 RTM) | VINAY\vinay (53) | bank_loan | 00:00:00 | 13 rows

Ready

Ln 140 Col 39 Ch 39 INS

Bank_loan.sql - VINAY\SQLEXPRESS.bank_loan (VINAY\vinay (53))* - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

New Query MDX DMX XMLA DAX

bank_loan Execute

Object Explorer

VINAY\SQLEXPRESS (SQL Server 16.0.1135 - Vin)

- Databases
 - System Databases
 - Database Snapshots
- AdventureWorks2022
- AdventureWorksDW2022
- bank_loan
 - Database Diagrams
 - Tables
 - System Tables
 - FileTables
 - External Tables
 - Graph Tables
- dbo.loanData
 - Columns
 - id (PK, int, not null)
 - address_state (varchar(50), not null)
 - application_type (varchar(50), not null)
 - emp_length (varchar(50), not null)
 - emp_title (varchar(50), not null)
 - grade (varchar(50), not null)
 - home_ownership (varchar(50), not null)
 - issue_date (date, not null)
 - last_credit_pull_date (date, not null)
 - last_payment_date (date, not null)
 - loan_status (varchar(50), not null)
 - next_payment_date (date, not null)

--2. Loan Default Risk Analysis
/* Question: Which states have the highest percentage of 'Charged Off' loans,
and how does it compare to the total loans issued in each state? */

```
select address_state,
       count(id) as Total_loan_applications,
       count(case when loan_status = 'Charged off' then id end)*100.0/count(id) as default_Percentage
  from loandata
 group by address_state
 order by count(case when loan_status = 'Charged off' then id end) desc;
```

Results Messages

	address_state	Total_loan_applications	default_Percentage
1	Madhya Pradesh	4056	25.394477317554
2	Tamil Nadu	4061	25.092341787737
3	Maharashtra	4072	24.729862475442
4	West Bengal	4026	24.937903626428
5	Telangana	3962	25.214538112064
6	Karnataka	3984	25.075301204819
7	Uttar Pradesh	3966	24.962178517397
8	Rajasthan	4043	23.868414543655
9	Gujarat	3953	24.361244624335
10	Delhi	3877	24.658240907918

Query executed successfully.

VINAY\SQLEXPRESS (16.0 RTM) | VINAY\vinay (53) | bank_loan | 00:00:00 | 10 rows

Ln 160 Col 72 Ch 72 INS

Ready

Bank_loan.sql - VINAY\SQLEXPRESS.bank_loan (VINAY\vinay (53))* - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

New Query MDX DMX XMLA DAX

bank_loan Execute

Object Explorer

VINAY\SQLEXPRESS (SQL Server 16.0.1135 - Vin)

- Databases
- System Databases
- Database Snapshots
- AdventureWorks2022
- AdventureWorksDW2022
- bank_loan
 - Database Diagrams
 - Tables
 - System Tables
 - FileTables
 - External Tables
 - Graph Tables
 - dbo.loanData
 - Columns
 - id (PK, int, not null)
 - address_state (varchar(50), not null)
 - application_type (varchar(50), not null)
 - emp_length (varchar(50), not null)
 - emp_title (varchar(50), not null)
 - grade (varchar(50), not null)
 - home_ownership (varchar(50), not null)
 - issue_date (date, not null)
 - last_credit_pull_date (date, not null)
 - last_payment_date (date, not null)
 - loan_status (varchar(50), not null)
 - next_payment_date (date, not null)

--3. Borrowers with High Debt-to-Income (DTI) Ratio
/* Question: Which loan applicants have the highest debt-to-income (DTI) ratios, and what is their repayment behavior? */

```
select top 5 emp_title,annual_income,
dti*100.0 as debt_to_income_ratio,
loan_amount,total_payment,loan_status
from loandata
order by dti desc;
```

Results Messages

	emp_title	annual_income	debt_to_income_ratio	loan_amount	total_payment	loan_status
1	Paytm	62870	30.0000011920929	39113	19143	Charged Off
2	Bharat Petroleum	104608	30.0000011920929	24314	3266	Late
3	IndusInd Bank	103413	30.0000011920929	35680	4345	Charged Off
4	Mahindra & Mahindra	88730	30.0000011920929	7978	5369	Charged Off
5	Reliance Industries	62719	30.0000011920929	24184	8926	Current

Query executed successfully.

VINAY\SQLEXPRESS (16.0 RTM) | VINAY\vinay (53) | bank_loan | 00:00:00 | 5 rows

Ready Ln 176 Col 1 Ch 1 INS

Bank_loan.sql - VINAY\SQLEXPRESS.bank_loan (VINAY\vinay (53))* - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

New Query MDX DMX XMLA DAX

bank_loan Execute

Object Explorer

VINAY\SQLEXPRESS (SQL Server 16.0.1135 - Vin)

- Databases
- System Databases
- Database Snapshots
- AdventureWorks2022
- AdventureWorksDW2022
- bank_loan
 - Database Diagrams
 - Tables
 - System Tables
 - FileTables
 - External Tables
 - Graph Tables
- dbo.loanData
 - Columns
 - id (PK, int, not null)
 - address_state (varchar(50), not null)
 - application_type (varchar(50), not null)
 - emp_length (varchar(50), not null)
 - emp_title (varchar(50), not null)
 - grade (varchar(50), not null)
 - home_ownership (varchar(50), not null)
 - issue_date (date, not null)
 - last_credit_pull_date (date, not null)
 - last_payment_date (date, not null)
 - loan_status (varchar(50), not null)
 - next_payment_date (date, not null)

-- 4. Good Loan vs. Bad Loan Funded Amount Trend
/* Question: How has the monthly funded amount for 'Good Loans' (Fully Paid, Current) and 'Bad Loans' (Charged Off) changed over the last year? */

```
select year(issue_date) as year,
       datename(month, issue_date) as month,
       sum(case when loan_status in ('Fully Paid', 'Current') then loan_amount else 0 end) as Total_Good_loan_fund,
       sum(case when loan_status = 'Charged off' then loan_amount else 0 end) as total_bad_loan_fund
  from loandata
 where issue_date >= dateadd(year, -1, getdate())
 group by year(issue_date), month(issue_date), datename(month, issue_date)
 order by year(issue_date) desc, month(issue_date) desc, datename(month, issue_date) desc;
```

Results

	year	month	Total_Good_loan_fund	total_bad_loan_fund
1	2025	February	7519920	2799953
2	2025	January	38933859	18833550
3	2024	December	39845021	20283984
4	2024	November	36579575	19145805
5	2024	October	40490217	19126882
6	2024	September	38023553	19551310
7	2024	August	38447273	19006219
8	2024	July	39720826	20137740
9	2024	June	40169863	19535792
10	2024	May	39984573	19175823
11	2024	April	40834186	20497779
12	2024	March	41647911	19163385
13	2024	February	31754524	15425079

Query executed successfully.

VINAY\SQLEXPRESS (16.0 RTM) | VINAY\vinay (53) | bank_loan | 00:00:00 | 13 rows

Ready Ln 190 Col 87 Ch 87 INS

Bank_loan.sql - VINAY\SQLEXPRESS.bank_loan (VINAY\vinay (53))* - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

New Query MDX DMX XMLA DAX

bank_loan Execute

Object Explorer

VINAY\SQLEXPRESS (SQL Server 16.0.1135 - Vin)

- Databases
 - System Databases
 - Database Snapshots
 - AdventureWorks2022
 - AdventureWorksDW2022
 - bank_loan
 - Database Diagrams
 - Tables
 - System Tables
 - FileTables
 - External Tables
 - Graph Tables
 - dbo.loanData
 - Columns
 - id (PK, int, not null)
 - address_state (varchar(50), not null)
 - application_type (varchar(50), not null)
 - emp_length (varchar(50), not null)
 - emp_title (varchar(50), not null)
 - grade (varchar(50), not null)
 - home_ownership (varchar(50), not null)
 - issue_date (date, not null)
 - last_credit_pull_date (date, not null)
 - last_payment_date (date, not null)
 - loan_status (varchar(50), not null)
 - next_payment_date (date, not null)

-- 5. Late Payments Analysis
/* Question: Which borrowers have the highest number of late payments, and how does their loan status compare? */

```
select top 5 id,emp_title,loan_status,total_payment,last_payment_date,
datediff(day,last_payment_date,getdate()) as days_since_last_payment
from loandata
where loan_status in ('charged off','late') and
last_payment_date is NOT NULL
group by id,emp_title,loan_status,total_payment,last_payment_date
order by datediff(day,last_payment_date,getdate()) desc;
```

Results

	id	emp_title	loan_status	total_payment	last_payment_date	days_since_last_payment
1	1002788	Nestle India	Charged Off	9973	2024-01-01	402
2	1002847	ITC Limited	Late	5137	2024-01-01	402
3	1003448	HCL Technologies	Late	7085	2024-01-01	402
4	1004007	Zomato	Charged Off	9417	2024-01-01	402
5	1004571	Eicher Motors	Late	2374	2024-01-01	402

Query executed successfully.

VINAY\SQLEXPRESS (16.0 RTM) | VINAY\vinay (53) | bank_loan | 00:00:00 | 5 rows

Ready Ln 204 Col 1 Ch 1 INS

Bank_loan.sql - VINAY\SQLEXPRESS.bank_loan (VINAY\vinay (53))* - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

New Query MDX DMX XMLA DAX

bank_loan Execute

Object Explorer

VINAY\SQLEXPRESS (SQL Server 16.0.1135 - Vin)

- Databases
- System Databases
- Database Snapshots
- AdventureWorks2022
- AdventureWorksDW2022
- bank_loan
 - Database Diagrams
 - Tables
 - System Tables
 - FileTables
 - External Tables
 - Graph Tables
- dbo.loanData
 - Columns
 - id (PK, int, not null)
 - address_state (varchar(50), not null)
 - application_type (varchar(50), not null)
 - emp_length (varchar(50), not null)
 - emp_title (varchar(50), not null)
 - grade (varchar(50), not null)
 - home_ownership (varchar(50), not null)
 - issue_date (date, not null)
 - last_credit_pull_date (date, not null)
 - last_payment_date (date, not null)
 - loan_status (varchar(50), not null)
 - next_payment_date (date, not null)

Bank_loan.sql - VIN... (VINAY\vinay (53))*

```
-- 6. Loan Repayment Behavior Based on Employment Title
/* Question: Which employment titles have the highest average loan amounts,
and how does their repayment behavior differ? */

select top 5 emp_title,
count(id) as Loan_count,
avg(Loan_amount) as Average_Loan_amount,
sum(total_payment)*100.0/sum(loan_amount) as Percentage_of_repayment
from loandata
group by emp_title
order by avg(Loan_amount) desc;
```

Results

emp_title	Loan_count	Average_Loan_amount	Percentage_of_repayment
Larsen & Toubro	947	27186	37.953469673914
Reliance Industries	914	26816	40.227684127348
Ola Electric	947	26694	38.902974363583
Wipro	943	26693	38.535037818895
Adani Group	928	26594	38.114835984916

Query executed successfully.

VINAY\SQLEXPRESS (16.0 RTM) | VINAY\vinay (53) | bank_loan | 00:00:00 | 5 rows

Ready Ln 218 Col 1 Ch 1 INS