

Here is the expected output for each SQL query. I am using **MS SQL** server to import the dataset and create the database and table.

MTD : Month to Date -> Current month (I used December as data is from Jan to Dec 2021).

Similarly we can use **MoM** : Month on Month -> Use previous month data and current month to calculate the growth with respect to previous month.

```
select * from bank_loan_data;
```

	id	address_state	application_type	emp_length	emp_title	grade	home_ownership	issue_date	last_credit_pull_date	last_payment_date	loan_status
1	54734	CA	INDIVIDUAL	< 1 year	NULL	B	RENT	2021-08-09	2021-08-12	2021-10-11	Fully Paid
2	55742	NY	INDIVIDUAL	< 1 year	CNN	B	RENT	2021-05-08	2021-08-12	2021-06-11	Fully Paid
3	57245	TX	INDIVIDUAL	10+ years	city of beaumont texas	C	OWN	2021-03-10	2021-05-16	2021-03-13	Fully Paid
4	57416	CT	INDIVIDUAL	6 years	State Farm Insurance	C	RENT	2021-11-09	2021-05-16	2021-11-12	Fully Paid
5	58915	CA	INDIVIDUAL	3 years	Qualcomm Inc	B	RENT	2021-04-08	2021-03-14	2021-04-11	Fully Paid
6	59006	TX	INDIVIDUAL	3 years	NULL	C	MORTGAGE	2021-09-09	2021-09-12	2021-10-12	Fully Paid
7	61390	TX	INDIVIDUAL	< 1 year	NULL	A	MORTGAGE	2021-02-10	2021-03-12	2021-03-12	Fully Paid
8	61419	MD	INDIVIDUAL	1 year	Pension Benefit Guaranty Corporation	D	RENT	2021-02-10	2021-03-13	2021-10-12	Charged Off
9	62102	MA	INDIVIDUAL	5 years	Rockwell Automation Inc.	B	RENT	2021-04-10	2021-03-13	2021-02-11	Fully Paid
10	65426	MI	INDIVIDUAL	< 1 year	Infotrieve, Inc.	B	MORTGAGE	2021-08-09	2021-05-16	2021-06-11	Charged Off
11	65640	CA	INDIVIDUAL	10+ years	kmart/innisfree	C	MORTGAGE	2021-05-08	2021-04-15	2021-05-11	Fully Paid

```
-- total loan application issued
```

```
select count(*) as Total_Loan_Application from bank_loan_data;
```

	Total_Loan_Application
1	38576

```
-- total application in a certain month
```

```
select count(*) as MTD_Total_Loan_Application from bank_loan_data  
where MONTH(issue_date) = 12 and YEAR(issue_date) = 2021;
```

	MTD_Total_Loan_Application
1	4314

```
-- total loan amount till now
```

```
select sum(loan_amount) as Total_Funded_Amount from bank_loan_data;
```

	Total_Funded_Amount
1	435757075

```
-- total loan amount of a certain month
```

```
select sum(loan_amount) as MTD_Total_Funded_Amount from bank_loan_data  
where MONTH(issue_date) = 12 and YEAR(issue_date) = 2021;
```

	MTD_Total_Funded_Amount
1	53981425

```
-- total amount received back to the bank
```

```
select sum(total_payment) as Total_Amount_Received from bank_loan_data;
```

	Total_Amount_Received
1	473070933

```
-- total amount received back to the bank in a certain month
select sum(total_payment) as MTD_Total_Amount_Received from bank_loan_data
where MONTH(issue_date) = 12 and YEAR(issue_date) = 2021;
```

	MTD_Total_Amount_Received
1	58074380

```
-- Average interest rate
select round(avg(int_rate)*100, 2) as Avg_Interest_Rate from bank_loan_data;
```

	Avg_Interest_Rate
1	12.05

```
-- Average interest rate by month
select round(avg(int_rate)*100, 2) as MTD_Avg_Interest_Rate from bank_loan_data
where MONTH(issue_date) = 12 and YEAR(issue_date) = 2021;
```

	MTD_Avg_Interest_Rate
1	12.36

```
-- Average debt to income ratio
select round(avg(dti)*100, 2) as Avg_DTI from bank_loan_data;
```

	Avg_DTI
1	13.33

```
-- Average debt to income ratio by month
select round(avg(dti)*100, 2) as MTD_Avg_DTI from bank_loan_data
where MONTH(issue_date) = 12 and YEAR(issue_date) = 2021;
```

	MTD_Avg_DTI
1	13.67

```
-- Good loan vs Bad loan
select loan_status from bank_loan_data;
```

	loan_status
1	Fully Paid
2	Fully Paid
3	Fully Paid
4	Fully Paid
5	Fully Paid
6	Fully Paid
7	Fully Paid
8	Charged Off
9	Fully Paid
10	Charged Off
11	Fully Paid
12	Fully Paid

```
-- Good loan: Current or Fully Paid
select (count(case when loan_status in('Fully Paid', 'Current') then id
end)*100.0)/count(id)
as Good_Loan_Percentage from bank_loan_data;
```

	Good_Loan_Percentage
1	86.175342181667

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

	Good_Loan_Application
1	33243

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

	Good_Loan_Funded_Amount
1	370224850

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

	Good_Loan_Received_Amount
1	435786170

```
-- Bad loan: Charged Off
select (count(case when loan_status = 'Charged Off' then id end)*100.0)/count(id)
as Bad_Loan_Percentage from bank_loan_data;
```

	Bad_Loan_Percentage
1	13.824657818332

```
select count(id) as Bad_Loan_Application from bank_loan_data
where loan_status = 'Charged Off';
```

	Bad_Loan_Application
1	5333

```
select sum(loan_amount) as Bad_Loan_Funded_Amount from bank_loan_data
where loan_status = 'Charged Off';
```

	Bad_Loan_Funded_Amount
1	65532225

```
select sum(total_payment) as Bad_Loan_Received_Amount from bank_loan_data
where loan_status = 'Charged Off';
```

	Bad_Loan_Received_Amount
1	37284763

```
-- Loan Status
select
    loan_status,
    count(id) as Total_Loan_Application,
    sum(total_payment) as Total_Amount_Received,
    sum(loan_amount) as Total_Funded_Amount,
    avg(int_rate) as Avg_Interest_Rate,
    avg(dti) as Avg_DTI
from bank_loan_data
group by loan_status;
```

	loan_status	Total_Loan_Application	Total_Amount_Received	Total_Funded_Amount	Avg_Interest_Rate	Avg_DTI
1	Fully Paid	32145	411586256	351358350	0.116410707918092	0.131673507557434
2	Charged Off	5333	37284763	65532225	0.138785749318289	0.140047328005517
3	Current	1098	24199914	18866500	0.150993260800947	0.147243442736843

```
-- Loan Status of a month
select
    loan_status,
    count(id) as Total_Loan_Application,
    sum(total_payment) as Total_Amount_Received,
    sum(loan_amount) as Total_Funded_Amount
from bank_loan_data where month(issue_date) = 12
group by loan_status;
```

	loan_status	Total_Loan_Application	Total_Amount_Received	Total_Funded_Amount
1	Fully Paid	3452	47815851	41302025
2	Charged	324211	8732775	
3	Current	213	4934318	3946625

-- Month wise analysis

```
select
    month(issue_date) as Month_Number,
    datename(month, issue_date) as Month_Name,
    count(id) as Total_Loan_Application,
    sum(total_payment) as Total_Amount_Received,
    sum(loan_amount) as Total_Funded_Amount
from bank_loan_data
group by month(issue_date), datename(month, issue_date)
order by month(issue_date);
```

	Month_Number	Month_Name	Total_Loan_Application	Total_Amount_Received	Total_Funded_Amo
1	1	January	2332	27578836	25031650
2	2	February	2279	27717745	24647825
3	3	March	2627	32264400	28875700
4	4	April	2755	32495533	29800800
5	5	May	2911	33750523	31738350
6	6	June	3184	36164533	34161475
7	7	July	3366	38827220	35813900
8	8	August	3441	42682218	38149600
9	9	September	3536	43983948	40907725
10	10	October	3796	49399567	44893800
11	11	November	4035	50132030	47754825
12	12	December	4314	58074380	53081425

-- State wise analysis

```
select
    address_state,
    count(id) as Total_Loan_Application,
    sum(total_payment) as Total_Amount_Received,
    sum(loan_amount) as Total_Funded_Amount
from bank_loan_data
group by address_state
order by count(id) desc;
```

	address_state	Total_Loan_Application	Total_Amount_Received	Total_Funded_Amount
1	CA	6894	83901234	78484125
2	NY	3701	46108181	42077050
3	FL	2773	31601905	30046125
4	TX	2664	34392715	31236650
5	NJ	1822	23425159	21657475
6	IL	1486	18875941	17124225
7	PA	1482	17462908	15826525
8	VA	1375	17711443	15982650
9	GA	1355	16728040	15480325
10	MA	1310	16676279	15051000
11	OH	1188	14330148	12991375
12	MD	1027	12985170	11911400

```
-- Term wise analysis
select
    term,
    count(id) as Total_Loan_Application,
    sum(total_payment) as Total_Amount_Received,
    sum(loan_amount) as Total_Funded_Amount
from bank_loan_data
group by term
order by term;
```

	term	Total_Loan_Application	Total_Amount_Received	Total_Funded_Amount
1	36 months	28237	294709458	273041225
2	60 months	10339	178361475	162715850

```
-- Employment wise analysis
select
    emp_length,
    count(id) as Total_Loan_Application,
    sum(total_payment) as Total_Amount_Received,
    sum(loan_amount) as Total_Funded_Amount
from bank_loan_data
group by emp_length
order by count(id) desc;
```

	emp_length	Total_Loan_Application	Total_Amount_Received	Total_Funded_Amount
1	10+ years	8870	125871616	116115950
2	< 1 year	4575	47545011	44210625
3	2 years	4382	49206961	44967975
4	3 years	4088	47551832	43937850
5	4 years	3428	40964850	37600375
6	5 years	3273	40397571	36973625
7	1 year	3229	35498348	32883125
8	6 years	2228	27908658	25612650
9	7 years	1772	22584136	20811725
10	8 years	1476	19025777	17558950
11	9 years	1255	16516173	15084225

```
-- Loan purpose analysis
select
    purpose,
    count(id) as Total_Loan_Application,
    sum(total_payment) as Total_Amount_Received,
    sum(loan_amount) as Total_Funded_Amount
from bank_loan_data
group by purpose
order by count(id) desc;
```

	purpose	Total_Loan_Application	Total_Amount_Received	Total_Funded_Amount
1	Debt consolidation	18214	253801871	232459675
2	credit card	4998	65214084	58885175
3	other	3824	33289676	31155750
4	home improvement	2876	36380930	33350775
5	major purchase	2110	18676927	17251600
6	small business	1776	23814817	24123100
7	car	1497	11324914	10223575
8	wedding	928	10266856	9225800
9	medical	667	5851372	5533225
10	moving	559	3999899	3748125
11	house	366	5185538	4824925
12	vacation	352	2116738	1967950

```
-- Home ownership wise analysis
select
    home_ownership,
    count(id) as Total_Loan_Application,
    sum(total_payment) as Total_Amount_Received,
    sum(loan_amount) as Total_Funded_Amount
from bank_loan_data
group by home_ownership
order by count(id) desc;
```

	home_ownership	Total_Loan_Application	Total_Amount_Received	Total_Funded_Amount
1	RENT	18439	201823056	185768475
2	MORTGAGE	17198	238474438	219329150
3	OWN	2838	31729129	29597675
4	OTHER	98	1025257	1044975
5	NONE	3	19053	16800