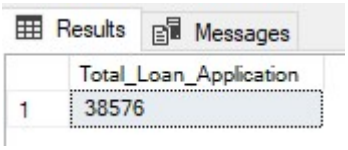
BANK LOAN SQL QUERIES

A. KPI's

1) Total Loan Application:

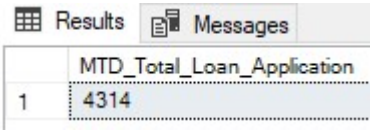
```
select count(id) as Total_Loan_Application
from loan_data
```



	Total_Loan_Application
1	38576

MTD Loan Application:

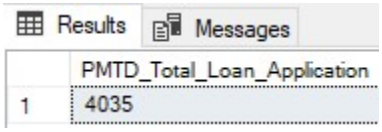
```
select count(id) as MTD_Total_Loan_Application
from loan_data
where month(issue_date) = 12 and year(issue_date) = 2021
```



	MTD_Total_Loan_Application
1	4314

PMTD Loan Application:

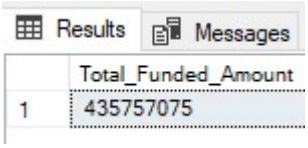
```
select count(id) as PMTD_Total_Loan_Application
from loan_data
where month(issue_date) = 11 and year(issue_date) = 2021
```



	PMTD_Total_Loan_Application
1	4035

2) Total Funded Amount:

```
select sum(loan_amount) as Total_Funded_Amount
from loan_data
```

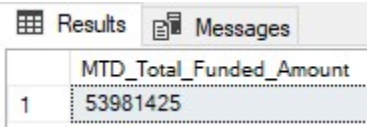


	Total_Funded_Amount
1	435757075

MTD Funded Amount:

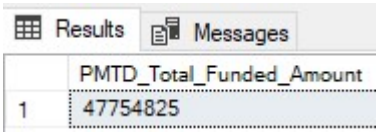
```
select sum(loan_amount) as MTD_Total_Funded_Amount
from loan_data
```

```
where month(issue_date) = 12 and year(issue_date) = 2021
```



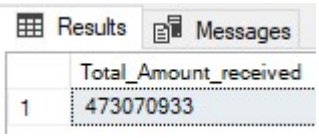
PMTD Funded Amount:

```
select sum(loan_amount) as PMTD_Total_Funded_Amount
from loan_data
where month(issue_date) = 11 and year(issue_date) = 2021
```



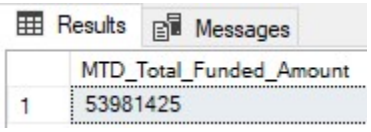
3) Total Amount Received:

```
select sum(total_payment) as Total_Amount_received
from loan_data
```



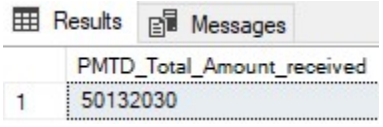
MTD Amount Received:

```
select sum(total_payment) as MTD_Total_Amount_received
from loan_data
where month(issue_date) = 12 and year(issue_date) = 2021
```



PMTD Amount Received:

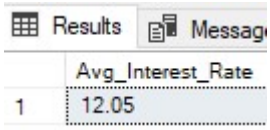
```
select sum(total_payment) as PMTD_Total_Amount_received
from loan_data
where month(issue_date) = 11 and year(issue_date) = 2021
```



4) Average Interest Rate:

```
select round(avg(int_rate)*100, 2) as Avg_Interest_Rate
```

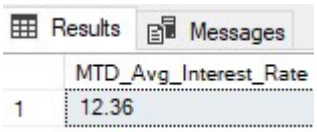
```
from loan_data
```



	Avg_Interest_Rate
1	12.05

MTD Amount Received:

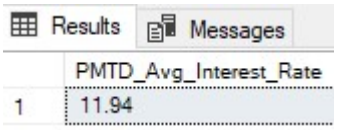
```
select round(avg(int_rate)*100, 2) as MTD_Avg_Interest_Rate
from loan_data
where month(issue_date) = 12 and year(issue_date) = 2021
```



	MTD_Avg_Interest_Rate
1	12.36

PMTD Amount Received:

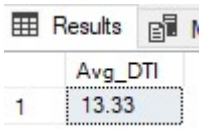
```
select round(avg(int_rate)*100, 2) as PMTD_Avg_Interest_Rate
from loan_data
where month(issue_date) = 11 and year(issue_date) = 2021
```



	PMTD_Avg_Interest_Rate
1	11.94

5) Average Debt-to-Income Ratio (DTI) :

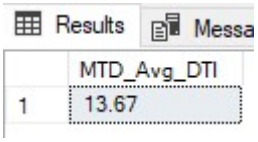
```
select round(avg(dti)*100, 2) as Avg_DTI
from loan_data
```



	Avg_DTI
1	13.33

MTD Amount Received:

```
select round(avg(dti)*100, 2) as MTD_Avg_DTI
from loan_data
where month(issue_date) = 12 and year(issue_date) = 2021
```

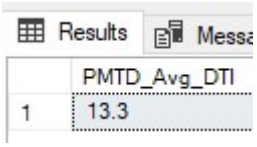


	MTD_Avg_DTI
1	13.67

PMTD Amount Received:

```
select round(avg(dti)*100, 2) as PMTD_Avg_ DTI
```

```
from loan_data
where month(issue_date) = 11 and year(issue_date) = 2021
```



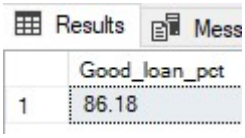
	PMTD_Avg_DTI
1	13.3

B. Good Loan vs Bad Loan KPI's

i) Good Loans KPI's:

1) Good Loan Application Percentage:

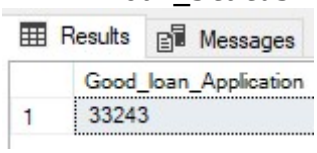
```
select
     cast(round((count(
          case when loan_status = 'Fully Paid' or
                                  loan_status = 'Current'
          then id end)* 100.0)
     / count(id), 2) as decimal(10,2)) as Good_loan_pct
from loan_data
```



	Good_loan_pct
1	86.18

2) Good Loan Applications:

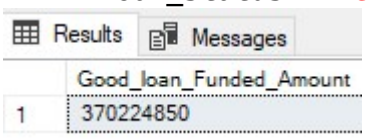
```
select count(id) as Good_loan_Application
from loan_data
where loan_status = 'Fully Paid' or
      loan_status = 'Current'
```



	Good_loan_Application
1	33243

3) Good Loan Funded Amount:

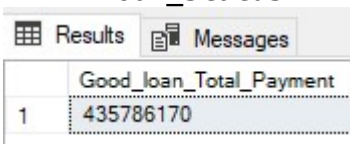
```
select sum(loan_amount) as Good_loan_Funded_Amount
from loan_data
where loan_status = 'Fully Paid' or
      loan_status = 'Current'
```



	Good_loan_Funded_Amount
1	370224850

4) **Good Loan Total Received Amount:**

```
select sum(total_payment) as Good_loan_Total_Payment
from loan_data
where loan_status = 'Fully Paid' or
      loan_status = 'Current'
```



	Good_loan_Total_Payment
1	435786170

ii) Bad Loans KPI's:

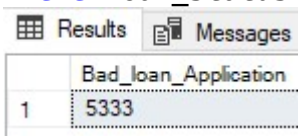
1) **Bad Loan Application Percentage:**

```
select
     cast(round((count(
                case when loan_status = 'Charged Off'
                then id end)* 100.0)
     / count(id), 2) as decimal(10,2)) as Bad_loan_pct
from loan_data
```

	Bad_loan_pct
1	13.82

2) **Bad Loan Applications:**

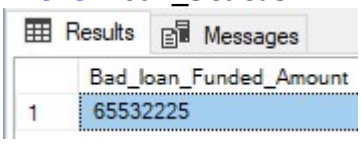
```
select count(id) as Bad_loan_Application
from loan_data
where loan_status = 'Charged Off'
```



	Bad_loan_Application
1	5333

3) **Bad Loan Funded Amount:**

```
select sum(loan_amount) as Bad_loan_Funded_Amount
from loan_data
where loan_status = 'Charged Off'
```



	Bad_loan_Funded_Amount
1	65532225

4) **Bad Loan Total Received Amount:**

```sql
select sum(total_payment) as Bad_loan_Total_Payment
from loan_data
where loan_status = 'Charged Off'
```

Results | Messages

	Bad_loan_Total_Payment
1	37284763

C. LOAN STATUS

```sql
select loan_status,
        count(id) as Total_Loan_Applications,
        sum(total_payment) as Total_Amount_received,
        sum(loan_amount) as Total_Funded_Amount,
        round(avg(int_rate)*100, 2) as Avg_Interest_Rate,
        round(avg(dti)*100, 2) as Avg_DTI
from loan_data
group by loan_status
```

Results | Messages

	loan_status	Total_Loan_Applications	Total_Amount_received	Total_Funded_Amount	Avg_Interest_Rate	Avg_DTI
1	Charged Off	5333	37284763	65532225	13.88	14
2	Fully Paid	32145	411586256	351358350	11.64	13.17
3	Current	1098	24199914	18866500	15.1	14.72

```sql
select loan_status,
        sum(total_payment) as MTD_Total_Amount_received,
        sum(loan_amount) as MTD_Total_Funded_Amount
from loan_data
where month(issue_date) = 12 and year(issue_date) = 2021
group by loan_status
```

Results | Messages

	loan_status	MTD_Total_Amount_received	MTD_Total_Funded_Amount
1	Charged Off	5324211	8732775
2	Fully Paid	47815851	41302025
3	Current	4934318	3946625

D. Charts

1) Monthly Trends by Issue Date:

```sql
select datename(month, issue_date) as Month,
        count(id) as Total_Loan_Applications,
        sum(loan_Amount) as Total_Funded_Amount,
        sum(total_payment) as Total_Amount_received
```

```
from loan_data
group by datename(month, issue_date),
            datepart(month, issue_date)
order by datepart(month, issue_date)
```

Results | Messages

	Month	Total_Loan_Applications	Total_Funded_Amount	Total_Amount_received
1	January	2332	25031650	27578836
2	February	2279	24647825	27717745
3	March	2627	28875700	32264400
4	April	2755	29800800	32495533
5	May	2911	31738350	33750523
6	June	3184	34161475	36164533
7	July	3366	35813900	38827220
8	August	3441	38149600	42682218
9	September	3536	40907725	43983948
10	October	3796	44893800	49399567
11	November	4035	47754825	50132030
12	December	4314	53981425	58074380

2) Regional Analysis by State:

```
select address_state as State,
        count(id) as Total_Loan_Applications,
        sum(loan_Amount) as Total_Funded_Amount,
        sum(total_payment) as Total_Amount_received
from loan_data
group by address_state
order by count(id) desc
```

Results | Messages

	State	Total_Loan_Applications	Total_Funded_Amount	Total_Amount_received
1	CA	6894	78484125	83901234
2	NY	3701	42077050	46108181
3	FL	2773	30046125	31601905
4	TX	2664	31236650	34392715
5	NJ	1822	21657475	23425159
6	IL	1486	17124225	18875941
7	PA	1482	15826525	17462908

3) Loan Term Analysis:

```
select term as Loan_Term,
        count(id) as Total_Loan_Applications,
        sum(loan_Amount) as Total_Funded_Amount,
        sum(total_payment) as Total_Amount_received
from loan_data
group by term
order by term
```

Results | Messages

	Loan_Term	Total_Loan_Applications	Total_Funded_Amount	Total_Amount_received
1	36 months	28237	273041225	294709458
2	60 months	10339	162715850	178361475

4) Employee Length Analysis:

```
select emp_length as Employee_Length,
        count(id) as Total_Loan_Applications,
        sum(loan_Amount) as Total_Funded_Amount,
        sum(total_payment) as Total_Amount_received
from loan_data
group by emp_length
order by emp_length
```

Results | Messages

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

5) Loan Purpose Breakdown:

```
select purpose as Loan_ Purpose,
        count(id) as Total_Loan_Applications,
        sum(loan_Amount) as Total_Funded_Amount,
        sum(total_payment) as Total_Amount_received
from loan_data
group by purpose
order by count(id)
```

Results | Messages

	Loan_Purpose	Total_Loan_Applications	Total_Funded_Amount	Total_Amount_received
1	Debt consolidation	18214	232459675	253801871
2	credit card	4998	58885175	65214084
3	other	3824	31155750	33289676
4	home improvement	2876	33350775	36380930
5	major purchase	2110	17251600	18676927
6	small business	1776	24123100	23814817
7	car	1497	10223575	11324914
8	wedding	928	9225800	10266856
9	medical	667	5533225	5851372
10	moving	559	3748125	3999899
11	house	366	4824925	5185538
12	vacation	352	1967950	2116738
13	educational	315	2161650	2248380
14	renewable_energy	94	845750	898931

6) Home Ownership Analysis:

```
select home_ownershipas Home_Ownership,
        count(id) as Total_Loan_Applications,
        sum(loan_Amount) as Total_Funded_Amount,
        sum(total_payment) as Total_Amount_received
from loan_data
group by home_ownership
order by term
```

Results | Messages

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

NOTE:

In our scenario, specifying 'year(issue_date) = 2021' is unnecessary when using Month-to-Date (MTD) or Previous Month-to-Date (PMTD) calculations. However, if our database contains data spanning multiple years, we should indicate the specific year from which to retrieve data.

```
select sum(total_payment) as MTD_Total_Amount_received
from loan_data
where month(issue_date) = 12 and year(issue_date) = 2021
```