Bank loan Data - Summary

1. KPI Requirements

- **Total Loan Applications**

```
SELECT COUNT(id) AS Total_Loan_Applications
FROM Bank_loan_data
```

	Total_Loan_Applications
1	38576

- **MTD Total Loan Applications (Outdated database, dynamic MAX selected)**

```
WITH MaxDate AS (
    SELECT
        YEAR(MAX(issue_date)) AS MaxYear,
        MONTH(MAX(issue_date)) AS MaxMonth
    FROM
        bank_loan_data
)
SELECT
    COUNT(id) AS MTD_Total_Loan_Applications
FROM
    bank_loan_data,
    MaxDate
WHERE YEAR(issue_date) = MaxYear AND MONTH(issue_date) = MaxMonth
```

	MTD_Total_Loan_Applications
1	4314

- **PMTD Total Loan Applications (Outdated database, dynamic PMAX selected)**

```
WITH MaxDate AS (
    SELECT
        YEAR(MAX(issue_date)) AS MaxYear,
        MONTH(MAX(issue_date)) AS MaxMonth
    FROM
        bank_loan_data
)
SELECT
    COUNT(id) AS PMTD_Total_Loan_Applications
FROM
    bank_loan_data,
    MaxDate
```

```
WHERE
    YEAR(issue_date) = CASE
                           WHEN (SELECT MaxMonth FROM MaxDate) = 1 THEN - 1
                           ELSE (SELECT MaxYear FROM MaxDate)
                           END
    AND MONTH(issue_date) = CASE
                                WHEN (SELECT MaxMonth FROM MaxDate) = 1 THEN
12
                                ELSE (SELECT MaxMonth FROM MaxDate) - 1
                                END
```

	PMTD_Total_Loan_Applications
1	4035

- **Total Funded Amount**

```
  SELECT SUM(loan_amount) AS Total_Funded_Amount
  FROM Bank_loan_data
```

	Total_Funded_Amount
1	435757075

- **MTD Total Funded AMount**

```
WITH MaxDate AS (
    SELECT
        YEAR(MAX(issue_date)) AS MaxYear,
        MONTH(MAX(issue_date)) AS MaxMonth
    FROM
        bank_loan_data
)
SELECT
    SUM(loan_amount) AS MTD_Total_Funded_Amount
FROM
    bank_loan_data,
    MaxDate
WHERE YEAR(issue_date) = MaxYear AND MONTH(issue_date) = MaxMonth
```

	MTD_Total_Funded_Amount
1	53981425

- **PMTD Total Funded Amount**

```
 WITH MaxDate AS (
    SELECT
        YEAR(MAX(issue_date)) AS MaxYear,
        MONTH(MAX(issue_date)) AS MaxMonth
    FROM
```

```
        bank_loan_data
)
SELECT
    SUM(loan_amount) AS PMTD_Total_Funded_Amount
FROM
    bank_loan_data,
    MaxDate
WHERE
    YEAR(issue_date) = CASE
                           WHEN (SELECT MaxMonth FROM MaxDate) = 1 THEN - 1
                           ELSE (SELECT MaxYear FROM MaxDate)
                           END
    AND MONTH(issue_date) = CASE
                                WHEN (SELECT MaxMonth FROM MaxDate) = 1 THEN
12
                                ELSE (SELECT MaxMonth FROM MaxDate) - 1
                                END
```

	PMTD_Total_Funded_Amount
1	47754825

- **MTD Total Amount Received**

```
WITH MaxDate AS (
    SELECT
        YEAR(MAX(issue_date)) AS MaxYear,
        MONTH(MAX(issue_date)) AS MaxMonth
    FROM
        bank_loan_data
)
SELECT
    SUM(total_payment) AS MTD_Total_Amount_Received
FROM
    bank_loan_data,
    MaxDate
WHERE YEAR(issue_date) = MaxYear AND MONTH(issue_date) = MaxMonth
```

	MTD_Total_Amount_Received
1	58074380

- **PMTD Total Amount Received**

```
 WITH MaxDate AS (
    SELECT
        YEAR(MAX(issue_date)) AS MaxYear,
        MONTH(MAX(issue_date)) AS MaxMonth
```

```
    FROM
        bank_loan_data
)
SELECT
    SUM(total_payment) AS PMTD_Total_Amount_Received
FROM
    bank_loan_data,
    MaxDate
WHERE
    YEAR(issue_date) = CASE
                           WHEN (SELECT MaxMonth FROM MaxDate) = 1 THEN - 1
                           ELSE (SELECT MaxYear FROM MaxDate)
                           END
    AND MONTH(issue_date) = CASE
                                WHEN (SELECT MaxMonth FROM MaxDate) = 1 THEN
12
                                ELSE (SELECT MaxMonth FROM MaxDate) - 1
                                END
```

	PMTD_Total_Amount_Received
1	50132030

- **Average Total interest Rate**

```
SELECT ROUND(AVG(int_rate), 4) * 100 AS Average_Total_Interest_Rate
FROM bank_loan_data
```

	Average_Total_Interest_Rate
1	12,05

- **MTD Average Total interest Rate**

```
WITH MaxDate AS (
    SELECT
        YEAR(MAX(issue_date)) AS MaxYear,
        MONTH(MAX(issue_date)) AS MaxMonth
    FROM
        bank_loan_data
)
SELECT
    ROUND(AVG(int_rate), 4) * 100 AS MTD_Average_Interest_Rate
FROM
    bank_loan_data,
    MaxDate
WHERE YEAR(issue_date) = MaxYear AND MONTH(issue_date) = MaxMonth
```

	MTD_Average_Interest_Rate
1	12,36

- **PMTD Average Total interest Rate**

```
 WITH MaxDate AS (
    SELECT
        YEAR(MAX(issue_date)) AS MaxYear,
        MONTH(MAX(issue_date)) AS MaxMonth
    FROM
        bank_loan_data
)
SELECT
    ROUND(AVG(int_rate), 4) * 100 AS PMTD_Average_Interest_Rate
FROM
    bank_loan_data,
    MaxDate
WHERE
    YEAR(issue_date) = CASE
                           WHEN (SELECT MaxMonth FROM MaxDate) = 1 THEN - 1
                           ELSE (SELECT MaxYear FROM MaxDate)
                           END
    AND MONTH(issue_date) = CASE
                                WHEN (SELECT MaxMonth FROM MaxDate) = 1 THEN
12
                                ELSE (SELECT MaxMonth FROM MaxDate) - 1
                                END
```

	PMTD_Average_Interest_Rate
1	11,94

- **Average Debt-to-Income Ratio (DTI)**

```
SELECT ROUND(AVG(dti), 4) * 100 AS Average_DTI_Ratio
FROM bank_loan_data
```

	Average_DTI_Ratio
1	13,33

- **Average MTD Debt-to-Income Ratio (DTI)**

```
WITH MaxDate AS (
    SELECT
        YEAR(MAX(issue_date)) AS MaxYear,
        MONTH(MAX(issue_date)) AS MaxMonth
    FROM
        bank_loan_data
```

```
)
SELECT
    ROUND(AVG(dti), 4) * 100 AS MTD_Average_DTI
FROM
    bank_loan_data,
    MaxDate
WHERE YEAR(issue_date) = MaxYear AND MONTH(issue_date) = MaxMonth
```

	MTD_Average_DTI
1	13,67

- **Average PMTD Debt-to-Income Ratio (DTI)**

```
 WITH MaxDate AS (
    SELECT
        YEAR(MAX(issue_date)) AS MaxYear,
        MONTH(MAX(issue_date)) AS MaxMonth
    FROM
        bank_loan_data
)
SELECT
    ROUND(AVG(dti), 4) * 100 AS PMTD_DTI
FROM
    bank_loan_data,
    MaxDate
WHERE
    YEAR(issue_date) = CASE
                           WHEN (SELECT MaxMonth FROM MaxDate) = 1 THEN - 1
                           ELSE (SELECT MaxYear FROM MaxDate)
                           END
    AND MONTH(issue_date) = CASE
                                WHEN (SELECT MaxMonth FROM MaxDate) = 1 THEN
12
                                ELSE (SELECT MaxMonth FROM MaxDate) - 1
                                END
```

	PMTD_DTI
1	13,3

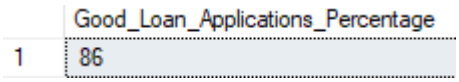
---

2. KPI Good Loans VS Bad Loans

- **Total Good Loans percentage**

```
SELECT
    ROUND(CAST((COUNT(CASE WHEN loan_status = 'Fully Paid' OR loan_status =
'Current' THEN id END) *100.0) / COUNT(id) AS FLOAT), 0) AS
```

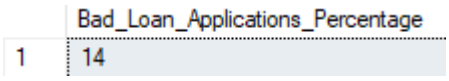
```
Good_Loan_Applications_Percentage
FROM bank_loan_data
```



	Good_Loan_Applications_Percentage
1	86

- **Total Bad Loans percentage**

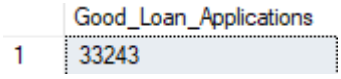
```
SELECT
    ROUND(CAST((COUNT(CASE WHEN loan_status = 'Charged Off' THEN id END)
*100.0) / COUNT(id) AS FLOAT), 0) AS Bad_Loan_Applications_Percentage
FROM bank_loan_data
```



	Bad_Loan_Applications_Percentage
1	14

- **Total Good Loans Applications**

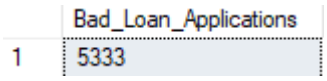
```
SELECT count(id) AS Good_Loan_Applications
FROM bank_loan_data
WHERE loan_status in ('Fully Paid', 'Current')
```



	Good_Loan_Applications
1	33243

- **Total Bad Loans Applications**

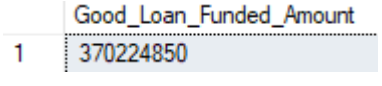
```
SELECT count(id) AS Bad_Loan_Applications
FROM bank_loan_data
WHERE loan_status = 'Charged Off'
```



	Bad_Loan_Applications
1	5333

- **Total Good Loans Funded Amount**

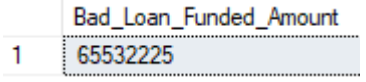
```
SELECT SUM(loan_amount) AS Good_Loan_Funded_Amount
FROM bank_loan_data
WHERE loan_status in ('Fully Paid', 'Current')
```



	Good_Loan_Funded_Amount
1	370224850

- **Total Bad Loans Funded Amount**

```
SELECT SUM(loan_amount) AS Bad_Loan_Funded_Amount
FROM bank_loan_data
WHERE loan_status = 'Charged Off'
```



	Bad_Loan_Funded_Amount
1	65532225

- **Total Good Loans Received Amount**

```
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

- **Total Bad Loans Received Amount**

```
SELECT SUM(total_payment) AS Bad_Loan_Received_Amount
FROM bank_loan_data
WHERE loan_status = 'Charged Off'
```

	Bad_Loan_Received_Amount
1	37284763

---

3. Loan Status Grid

- **Case Used : With our outdated database (general dynamic case):**

```
WITH LatestDate As (
    SELECT
        YEAR(MAX(issue_date)) AS latest_year,
        MONTH(MAX(issue_date)) as latest_month
    FROM bank_loan_data
    )
SELECT
    loan_status AS 'Loan Status',
    COUNT(id) AS 'Total Loan Applications',
    SUM(loan_amount) AS 'Total Funded Amount',
    SUM(total_payment) AS 'Total Amount Received',
    SUM(CASE WHEN YEAR(issue_date) = latest_year AND MONTH(issue_date) =
latest_month THEN loan_amount END) AS 'Month-to-date (MTD) Funded Amount',
    SUM(CASE WHEN YEAR(issue_date) = latest_year AND MONTH(issue_date) =
latest_month THEN total_payment END) AS 'Month-to-date (MTD) Amount
Received',
    ROUND(AVG(int_rate), 4) *100.0 AS 'Average Interest rate',
    ROUND(AVG(dti), 4) *100.0 AS 'Average Debt-to-Income Ratio (DTI)'
FROM
    bank_loan_data,
    LatestDate
GROUP BY loan_status
```

	Loan Status	Total Loan Applications	Total Funded Amount	Total Amount Received	Month-to-date (MTD) Funded Amount	Month-to-date (MTD) Amount Received	Average Interest rate	Average Debt-to-Income Ratio (DTI)
1	Fully Paid	32145	351358350	411586256	41302025	47815851	11,64	13,17
2	Charged Off	5333	65532225	37284763	8732775	5324211	13,88	14
3	Current	1098	18866500	24199914	3946625	4934318	15,1	14,72

Dashboard 2

- **Monthly trends By issue Date (Line Chart)**

```
WITH Date AS (
    SELECT
        FORMAT(issue_date, 'yyyy-MM') AS issue_year_month,
        id,
        loan_amount,
        total_payment
    FROM bank_loan_data
    )

SELECT
    issue_year_month as "Date",
    COUNT(id)    AS Total_Loan_Applications,
    SUM(loan_amount) AS Total_Funded_Amount,
    SUM(total_payment) AS Total_Received_Amount
FROM
    Date
GROUP BY
    issue_year_month
ORDER BY issue_year_month ASC
```

	Date	Total_Loan_Applications	Total_Funded_Amount	Total_Received_Amount
1	2021-01	2332	25031650	27578836
2	2021-02	2279	24647825	27717745
3	2021-03	2627	28875700	32264400
4	2021-04	2755	29800800	32495533
5	2021-05	2911	31738350	33750523
6	2021-06	3184	34161475	36164533
7	2021-07	3366	35813900	38827220
8	2021-08	3441	38149600	42682218
9	2021-09	3536	40907725	43983948
10	2021-10	3796	44893800	49399567
11	2021-11	4035	47754825	50132030
12	2021-12	4314	53981425	58074380

- **Regional Analysis (Filled Map)**

```
SELECT
    address_state AS State,
    COUNT(id)    AS Total_Loan_Applications,
```

```
    SUM(loan_amount) AS Total_Funded_Amount,
    SUM(total_payment) AS Total_Received_Amount
FROM
    bank_loan_data
GROUP BY
    address_state
```

	State	Total_Loan_Applications	Total_Funded_Amount	Total_Received_Amount
1	UT	252	2849225	2952412
2	NC	759	8787575	9534813
3	WI	446	5070450	5485161
4	MA	1310	15051000	16676279
5	MI	685	7829900	8543660
6	TN	17	162175	141522
7	NH	161	1917900	2101386
8	AK	78	1031800	1108570
9	OK	293	3365725	3712649
10	KY	320	3504100	3792530
11	CO	770	8976000	9845810
12	NV	482	5307375	5451443
13	SD	63	606150	656514
14	PA	1482	15826525	17462908
15	WV	167	1830525	1991936
16	GA	1355	15480325	16728040
17	RI	196	1883025	2001774
18	IN	9	86225	85521
19	DC	214	2652350	2921854
20	MD	1027	11911400	12985170
21	OR	436	4720150	4966903
22	CT	730	8435575	9357612
23	AR	236	2529700	2777875
24	MN	592	6302600	6750746
25	AL	432	4949225	5492272
26	ID	6	59750	65329
27	TX	2664	31236650	34392715
28	NM	183	1916775	2084485
29	ME	3	9200	10808
30	IL	1486	17124225	18875941
31	MO	660	7151175	7692732
32	SC	464	5080475	5462458
33	DE	110	1138100	1269136
34	FL	2773	30046125	31601905
35	CA	6894	78484125	83901234
36	WY	79	890750	1046050
37	HI	170	1850525	2080184
38	OH	1188	12991375	14330148
39	NE	5	31700	24542
40	VT	54	504100	534973
41	NY	3701	42077050	46108181
42	MS	19	139125	149342
43	NJ	1822	21657475	23425159
44	IA	5	56450	64482
45	KS	260	2872325	3247394
46	LA	426	4498900	5001160
47	WA	805	8855525	9531739
48	AZ	833	9206000	10041986
49	VA	1375	15982650	17711443
50	MT	79	829525	892047

- **Loan term Analysis (Donut Chart)**

```sql
SELECT
    term AS Loan_Term,
    COUNT(id)   AS Total_Loan_Applications,
    SUM(loan_amount) AS Total_Funded_Amount,
    SUM(total_payment) AS Total_Received_Amount
FROM
    bank_loan_data
GROUP BY
    term
```

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

- **Employee Length Analysis (Bar Chart)**

```sql
SELECT
    emp_length AS Employee_Length,
    COUNT(id)   AS Total_Loan_Applications,
    SUM(loan_amount) AS Total_Funded_Amount,
    SUM(total_payment) AS Total_Received_Amount
FROM
    bank_loan_data
GROUP BY
    emp_length
ORDER BY
    CASE
        WHEN emp_length = '10+ years' THEN 11
        WHEN emp_length = '< 1 year' THEN 1
        WHEN emp_length = '1 year' THEN 2
        WHEN emp_length = '2 years' THEN 3
        WHEN emp_length = '3 years' THEN 4
        WHEN emp_length = '4 years' THEN 5
        WHEN emp_length = '5 years' THEN 6
        WHEN emp_length = '6 years' THEN 7
        WHEN emp_length = '7 years' THEN 8
        WHEN emp_length = '8 years' THEN 9
        WHEN emp_length = '9 years' THEN 10
    END
```

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

- **Loan Purpose breakdown (Bar Chart)**

```
SELECT
    purpose AS Loan_Purpose,
    COUNT(id)   AS Total_Loan_Applications,
    SUM(loan_amount) AS Total_Funded_Amount,
    SUM(total_payment) AS Total_Received_Amount
FROM
    bank_loan_data
GROUP BY
    purpose
ORDER BY
    Total_Loan_Applications DESC
```

	Loan_Purpose	Total_Loan_Applications	Total_Funded_Amount	Total_Received_Amount
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

- **Home Ownership Analysis (Tree Map)**

```
SELECT
    home_ownership AS Home_Ownership,
    COUNT(id)   AS Total_Loan_Applications,
    SUM(loan_amount) AS Total_Funded_Amount,
    SUM(total_payment) AS Total_Received_Amount
```

```
FROM
    bank_loan_data
GROUP BY
    home_ownership
ORDER BY
    Total_Loan_Applications DESC
```

	Home_Ownership	Total_Loan_Applications	Total_Funded_Amount	Total_Received_Amount
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