BANK LOAN REPORT QUERY DOCUMENT

A. BANK LOAN REPORT | SUMMARY

KPI's:

Total Loan Applications

```
SELECT COUNT(id) AS Total_Applications FROM bank_loan_data
```

Total_Applications
38576

MTD Loan Applications

```
SELECT COUNT(id) AS Total_Applications FROM bank_loan_data
WHERE MONTH(issue_date) = 12
```

Total_Applications
4314

PMTD Loan Applications

```
SELECT COUNT(id) AS Total_Applications FROM bank_loan_data
WHERE MONTH(issue_date) = 11
```

Total_Applications
4035

Total Funded Amount

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

Total_Funded_Amount
435757075

MTD Total Funded Amount

```
SELECT SUM(loan_amount) AS Total_Funded_Amount FROM bank_loan_data
WHERE MONTH(issue_date) = 12
```

Total_Funded_Amount
53981425

PMTD Total Funded Amount

```
SELECT SUM(loan_amount) AS Total_Funded_Amount FROM bank_loan_data
WHERE MONTH(issue_date) = 11
```

Total_Funded_Amount
47754825

Total Amount Received

```
SELECT SUM(total_payment) AS Total_Amount_Collected FROM bank_loan_data
```

Total_Amount_Collected
473070933

MTD Total Amount Received

```
SELECT SUM(total_payment) AS Total_Amount_Collected FROM bank_loan_data
WHERE MONTH(issue_date) = 12
```

Total_Amount_Collected
58074380

PMTD Total Amount Received

```
SELECT SUM(total_payment) AS Total_Amount_Collected FROM bank_loan_data
WHERE MONTH(issue_date) = 11
```

Total_Amount_Collected
50132030

Average Interest Rate

```
SELECT AVG(int_rate)*100 AS Avg_Int_Rate FROM bank_loan_data
```

Avg_Int_Rate
12.0488314172048

MTD Average Interest

```
SELECT AVG(int_rate)*100 AS MTD_Avg_Int_Rate FROM bank_loan_data
WHERE MONTH(issue_date) = 12
```

MTD_Avg_Int_Rate
12.3560408676042

PMTD Average Interest

```
SELECT AVG(int_rate)*100 AS PMTD_Avg_Int_Rate FROM bank_loan_data
WHERE MONTH(issue_date) = 11
```

PMTD_Avg_Int_Rate
11.9417175498261

Avg DTI

```
SELECT AVG(dti)*100 AS Avg_DTI FROM bank_loan_data
```

Avg_DTI
13.3274331211432

MTD Avg DTI

```
SELECT AVG(dti)*100 AS MTD_Avg_DTI FROM bank_loan_data
WHERE MONTH(issue_date) = 12
```

MTD_Avg_DTI
13.6655377880425

PMTD Avg DTI

```
SELECT AVG(dti)*100 AS PMTD_Avg_DTI FROM bank_loan_data
WHERE MONTH(issue_date) = 11
```

PMTD_Avg_DTI
13.3027335836364

GOOD LOAN ISSUED

Good Loan Percentage

```
SELECT
    (COUNT(CASE WHEN loan_status = 'Fully Paid' OR loan_status = 'Current' THEN id
END) * 100.0) /
       COUNT(id) AS Good_Loan_Percentage
FROM bank_loan_data
```

Good_Loan_Percentage
86.175342181667

Good Loan Applications

```
SELECT COUNT(id) AS Good_Loan_Applications FROM bank_loan_data
WHERE loan_status = 'Fully Paid' OR loan_status = 'Current'
```

Good_Loan_Applications
33243

Good Loan Funded Amount

```
SELECT SUM(loan_amount) AS Good_Loan_Funded_amount FROM bank_loan_data
WHERE loan_status = 'Fully Paid' OR loan_status = 'Current'
```

Good_Loan_Funded_amount
370224850

Good Loan Amount Received

```
SELECT SUM(total_payment) AS Good_Loan_amount_received FROM bank_loan_data
WHERE loan_status = 'Fully Paid' OR loan_status = 'Current'
```

Good_Loan_amount_received
435786170

BAD LOAN ISSUED

Bad Loan Percentage

```
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
13.824657818332

Bad Loan Applications

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

Bad_Loan_Applications
5333

Bad Loan Funded Amount

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

Bad_Loan_Funded_amount
65532225

Bad Loan Amount Received

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

Bad_Loan_amount_received
37284763

LOAN STATUS

```
SELECT
 loan_status,
 COUNT(id) AS LoanCount,
 SUM(total_payment) AS Total_Amount_Received,
 SUM(loan_amount) AS Total_Funded_Amount,
 AVG(int_rate * 100) AS Interest_Rate,
 AVG(dti * 100) AS DTI
FROM
 bank_loan_data
GROUP BY
 loan_status
```

	loan_status	LoanCount	Total_Amount_Received	Total_Funded_Amount	Interest_Rate	DTI
1	Fully Paid	32145	411586256	351358350	11.6410707918092	13.1673507557434
2	Charged Off	5333	37284763	65532225	13.8785749318289	14.0047328005517
3	Current	1098	24199914	18866500	15.0993260800947	14.7243442736843

```
SELECT
 loan_status,
 SUM(total_payment) AS MTD_Total_Amount_Received,
 SUM(loan_amount) AS MTD_Total_Funded_Amount
FROM bank_loan_data
WHERE MONTH(issue_date) = 12
GROUP BY loan_status
```

loan_status	MTD_Total_Amount_Received	MTD_Total_Funded_Amount
Fully Paid	47815851	41302025
Charged Off	5324211	8732775
Current	4934318	3946625

B. BANK LOAN REPORT | OVERVIEW

MONTH

```
SELECT
	MONTH(issue_date) AS Month_Munber,
	DATENAME(MONTH, issue_date) AS Month_name,
	COUNT(id) AS Total_Loan_Applications,
	SUM(loan_amount) AS Total_Funded_Amount,
	SUM(total_payment) AS Total_Amount_Received
FROM bank_loan_data
GROUP BY MONTH(issue_date), DATENAME(MONTH, issue_date)
ORDER BY MONTH(issue_date)
```

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

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 bank_loan_data
GROUP BY address_state
ORDER BY address_state
```

	State	Total_Loan_Applications	Total_Funded_Amount	Total_Amount_Received
1	AK	78	1031800	1108570
2	AL	432	4949225	5492272
3	AR	236	2529700	2777875
4	AZ	833	9206000	10041986
5	CA	6894	78484125	83901234
6	CO	770	8976000	9845810
7	CT	730	8435575	9357612
8	DC	214	2652350	2921854
9	DE	110	1138100	1269136
10	FL	2773	30046125	31601905
11	GA	1355	15480325	16728040
12	HI	170	1850525	2080184
13	IA	5	56450	64482
14	ID	6	59750	65329
15	IL	1486	17124225	18875941
16	IN	9	86225	85521
17	KS	260	2872325	3247394
18	KY	320	3504100	3792530
19	LA	426	4498900	5001160
20	MA	1310	15051000	16676279
21	MD	1027	11911400	12985170
22	ME	3	9200	10808
23	MI	685	7829900	8543660
24	MN	592	6302600	6750746
25	MO	660	7151175	7692732
26	MS	19	139125	149342
27	MT	79	829525	892047
28	NC	759	8787575	9534813
29	NE	5	31700	24542
30	NH	161	1917900	2101386
31	NJ	1822	21657475	23425159
32	NM	183	1916775	2084485
33	NV	482	5307375	5451443
34	NY	3701	42077050	46108181
35	OH	1188	12991375	14330148
36	OK	293	3365725	3712649
37	OR	436	4720150	4966903
38	PA	1482	15826525	17462908
39	RI	196	1883025	2001774

TERM

```
SELECT
	term AS Term,
	COUNT(id) AS Total_Loan_Applications,
	SUM(loan_amount) AS Total_Funded_Amount,
	SUM(total_payment) AS Total_Amount_Received
FROM bank_loan_data
GROUP BY term
ORDER BY term
```

	Term	Total_Loan_Applications	Total_Funded_Amount	Total_Amount_Received
1	36 months	28237	273041225	294709458
2	60 months	10339	162715850	178361475

EMPLOYEE LENGTH

```
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 bank_loan_data
GROUP BY emp_length
ORDER BY emp_length
```

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

PURPOSE

```
SELECT
	purpose AS PURPOSE,
	COUNT(id) AS Total_Loan_Applications,
	SUM(loan_amount) AS Total_Funded_Amount,
	SUM(total_payment) AS Total_Amount_Received
FROM bank_loan_data
GROUP BY purpose
ORDER BY purpose
```

PURPOSE	Total_Loan_Applications	Total_Funded_Amount	Total_Amount_Received
car	1497	10223575	11324914
credit card	4998	58885175	65214084
Debt consolidation	18214	232459675	253801871
educational	315	2161650	2248380
home improvement	2876	33350775	36380930
house	366	4824925	5185538
major purchase	2110	17251600	18676927
medical	667	5533225	5851372
moving	559	3748125	3999899
other	3824	31155750	33289676
renewable_energy	94	845750	898931
small business	1776	24123100	23814817
vacation	352	1967950	2116738
wedding	928	9225800	10266856

HOME OWNERSHIP

```
SELECT
	home_ownership AS Home_Ownership,
	COUNT(id) AS Total_Loan_Applications,
	SUM(loan_amount) AS Total_Funded_Amount,
	SUM(total_payment) AS Total_Amount_Received
FROM bank_loan_data
GROUP BY home_ownership
ORDER BY home_ownership
```

Home_Ownership	Total_Loan_Applications	Total_Funded_Amount	Total_Amount_Received
MORTGAGE	17198	219329150	238474438
NONE	3	16800	19053
OTHER	98	1044975	1025257
OWN	2838	29597675	31729129
RENT	18439	185768475	201823056

Note: We have applied multiple Filters on all the dashboards. You can check the results for the filters as well by modifying the query and comparing the results.

For e.g

See the results when we hit the Grade A in the filters for dashboards.

```
SELECT
	purpose AS PURPOSE,
	COUNT(id) AS Total_Loan_Applications,
	SUM(loan_amount) AS Total_Funded_Amount,
	SUM(total_payment) AS Total_Amount_Received
FROM bank_loan_data
WHERE grade = 'A'
GROUP BY purpose
ORDER BY purpose
```

BANK LOAN REPORT

TERMINOLOGIES USED IN DATA

Fields Used in Data

Loan ID:

Purpose: Loan ID is a unique identifier assigned to each loan application or loan account. It serves as a primary key for tracking and managing individual loans.

Use for Banks: Banks use Loan IDs to efficiently manage and track loans throughout their lifecycle. It aids in organizing loan records, monitoring repayments, and addressing customer inquiries.

Address State:

Purpose: Address State indicates the borrower's location. It helps in assessing regional risk factors, compliance with state regulations, and estimating default probabilities.

Use for Banks: Banks use this information to identify regional trends in loan demand, adjust marketing strategies, and manage risk portfolios based on geographic regions.

Employee Length:

Purpose: Employee Length provides insights into the borrower's employment stability. Longer employment durations may indicate greater job security.

Use for Banks: Banks consider employment length when assessing a borrower's ability to repay. Stable employment often translates to a lower default risk.

Employee Title:

Purpose: Employee Title specifies the borrower's occupation or job title. It helps lenders understand the source of the borrower's income.

Use for Banks: Banks use this field to verify income sources, assess the borrower's financial capacity, and tailor loan offers to different professions.

Grade:

Purpose: Grade represents a risk classification assigned to the loan based on creditworthiness. Higher grades signify lower risk.

Use for Banks: Banks use the grade to price loans and manage risk. Higher-grade loans typically receive lower interest rates and are more attractive to investors.

Sub Grade:

Purpose: Sub Grade refines the risk assessment within a grade, providing additional risk differentiation.

Use for Banks: Sub Grades offer a finer level of risk assessment, helping banks tailor interest rates and lending terms to match borrower risk profiles.

Home Ownership:

Purpose: Home Ownership indicates the borrower's housing status. It offers insights into financial stability.

Use for Banks: Banks use this field to assess collateral availability and borrower stability. Homeowners may have lower default rates.

Issue Date:

Purpose: Issue Date marks the loan's origination date. It's crucial for loan tracking and maturity calculations.

Use for Banks: Banks use Issue Dates to track loan aging, calculate interest accruals, and manage loan portfolios.

Last Credit Pull Date:

Purpose: Last Credit Pull Date records when the borrower's credit report was last accessed. It helps monitor creditworthiness.

Use for Banks: Banks use this date to track credit history updates, assess credit risk, and make informed lending decisions.

Last Payment Date:

Purpose: Last Payment Date marks the most recent loan payment received. It tracks the borrower's payment history.

Use for Banks: Banks use this date to assess payment behavior, calculate delinquency, and project future payments.

Loan Status:

Purpose: Loan Status indicates the current state of the loan (e.g., fully paid, current, default). It tracks loan performance.

Use for Banks: Banks use Loan Status to monitor loan health, categorize loans for risk analysis, and determine provisioning requirements.

Next Payment Date:

Purpose: Next Payment Date estimates the date of the next loan payment. It assists in cash flow forecasting.

Use for Banks: Banks use this date for liquidity planning and to project revenue from loan portfolios.

Purpose:

Purpose: Purpose specifies the reason for the loan (e.g., debt consolidation, education). It helps understand borrower intentions.

Use for Banks: Banks use this field to segment and customize loan offerings, aligning loan terms with borrower needs.

Term:

Purpose: Term defines the duration of the loan in months. It sets the repayment period.

Use for Banks: Banks use the term to structure loan agreements, calculate interest payments, and manage loan maturities.

Verification Status:

Purpose: Verification Status indicates whether the borrower's financial information has been verified. It assesses data accuracy.

Use for Banks: Banks use this field to gauge data reliability, verify income, and evaluate loan application credibility.

Annual Income:

Purpose: Annual Income reflects the borrower's total yearly earnings. It assesses repayment capacity.

Use for Banks: Banks use this income figure to determine loan eligibility, calculate debt-to-income ratios, and evaluate creditworthiness.

DTI (Debt-to-Income Ratio):

Purpose: DTI measures the borrower's debt burden relative to income. It gauges the borrower's capacity to take on additional debt.

Use for Banks: Banks use DTI to assess a borrower's ability to handle loan payments and make responsible lending decisions.

Instalment:

Purpose: Instalment is the fixed monthly payment amount for loan repayment, including principal and interest.

Use for Banks: Banks use this field to structure loan terms, calculate amortization schedules, and assess payment affordability.

Interest Rate:

Purpose: Interest Rate represents the annual cost of borrowing expressed as a percentage. It determines the loan's cost.

Use for Banks: Banks use interest rates to price loans, manage profit margins, and attract investors.

Loan Amount:

Purpose: Loan Amount is the total borrowed sum. It defines the principal amount.

Use for Banks: Banks use Loan Amount to determine loan size

BANK LOAN REPORT

DOMAIN KNOWLEDGE

Bank loans are a crucial financial tool that enables individuals and businesses to achieve their goals and manage financial needs. However, it's essential for borrowers to understand the terms, costs, and responsibilities associated with loans to make informed financial decisions.

Banks collect loan data through various channels and processes, including:

Loan Applications: When individuals or businesses apply for loans, they submit detailed applications that include personal and financial information. This data is collected electronically or in paper form.

Credit Reports: Banks often access credit reports from credit bureaus when assessing a borrower's creditworthiness. These reports contain information about a person's credit history, existing loans, and payment behaviour.

Internal Records: Banks maintain internal records of loan transactions, including disbursements, repayments, and loan status changes. These records are generated and stored in the bank's database.

Online Portals: Many banks offer online platforms where borrowers can apply for loans, make payments, and access account information. Data from these portals is collected and stored for analysis.

Third-party Data Sources: Some banks may use external data sources, such as income verification services, to gather additional information about borrowers.

Process of Granting a Loan

Loan Application:

The process begins when a customer submits a loan application to a bank or lending institution. This application can be submitted in person, online, or through other channels.

Application Review:

The lending institution reviews the loan application and collects necessary documentation, such as income statements, credit reports, and identification documents.

Identity Verification:

One of the initial checks is to verify the applicant's identity. This helps ensure that the applicant is who they claim to be and prevents identity theft.

Credit Check:

A crucial step is to perform a credit check on the applicant. This involves accessing their credit report from credit bureaus. Lenders evaluate the applicant's credit history, credit score, and any past delinquencies or defaults.

Income Verification:

Lenders assess the applicant's ability to repay the loan by verifying their income. This may involve reviewing pay stubs, tax returns, or other income documentation.

Debt-to-Income Ratio (DTI) Check:

Lenders calculate the applicant's DTI, which is the ratio of their monthly debt payments to their monthly income. A lower DTI indicates better repayment capacity.

Employment Verification:

Lenders may contact the applicant's employer to verify their employment status and length of employment. Stable employment history is often seen as a positive factor.

Collateral Assessment (if applicable):

If the loan is secured by collateral, such as a home or a car, the lender evaluates the value and condition of the collateral.

Risk Assessment:

Lenders assess the overall risk associated with the loan. This includes considering the applicant's credit risk, income stability, and the purpose of the loan.

Loan Approval or Denial:

Based on the information gathered and the risk assessment, the lender makes a decision to approve or deny the loan application. If approved, the lender determines the loan amount, interest rate, and terms.

Loan Agreement:

If the loan is approved, the lender provides the applicant with a loan agreement that outlines the terms and conditions, including the interest rate, repayment schedule, and any fees.

Disbursement of Funds:

Once the loan agreement is signed by both parties, the lender disburses the funds to the borrower. The borrower can use the funds for the specified purpose.

Repayment:

The borrower is responsible for making regular loan payments as specified in the loan agreement. This includes repaying the principal amount along with interest.

Ongoing Monitoring:

Lenders continue to monitor the loan throughout its term, including tracking payments, assessing the borrower's financial health, and managing any delinquencies or defaults.

Reasons for Analysing Bank Loan Data:

Banks analyse loan data for several critical reasons:

Risk Assessment: One of the primary purposes of analysing loan data is to assess the risk associated with lending to a particular individual or business. Banks use data to evaluate the creditworthiness of borrowers, predict default probabilities, and determine interest rates and lending terms.

Decision-making: Loan data analysis supports the decision-making process when evaluating loan applications. Banks use data-driven models and algorithms to make informed lending decisions, such as approving or denying loan requests.

Portfolio Management: Banks manage portfolios of loans, including mortgages, personal loans, and business loans. Data analysis helps banks monitor the health of these portfolios, identify underperforming loans, and optimize loan terms and pricing.

Fraud Detection: Banks use data analysis to detect fraudulent loan applications and activities. Unusual patterns, inconsistencies, or discrepancies in loan data can trigger fraud alerts.

Regulatory Compliance: Banks are subject to regulatory requirements that mandate the collection and reporting of loan data. Compliance with regulations such as the Home Mortgage Disclosure Act (HMDA) and the Know Your Customer (KYC) regulations requires data analysis and reporting.

Customer Insights: Analysing loan data provides insights into customer behaviour, preferences, and needs. Banks can use these insights to tailor loan products and marketing strategies to specific customer segments.

Profitability Analysis: Banks assess the profitability of their loan portfolios by analysing data related to interest income, loan origination costs, default rates, and collection efforts.

Market Research: Data analysis helps banks understand market trends, competitive landscape, and customer demand. This information guides product development and market expansion strategies.

Credit Risk Management: Banks continuously monitor and manage credit risk associated with their loans. Data analysis helps in setting risk management strategies, provisioning for potential losses, and stress testing loan portfolios.

Customer Retention: Banks use data analysis to identify opportunities for retaining existing customers, such as offering loan refinancing options or additional financial products.

DATA ANALYST PORTFOLIO PROJECT

DATA TUTORIAL

BANK LOAN ANALYSIS

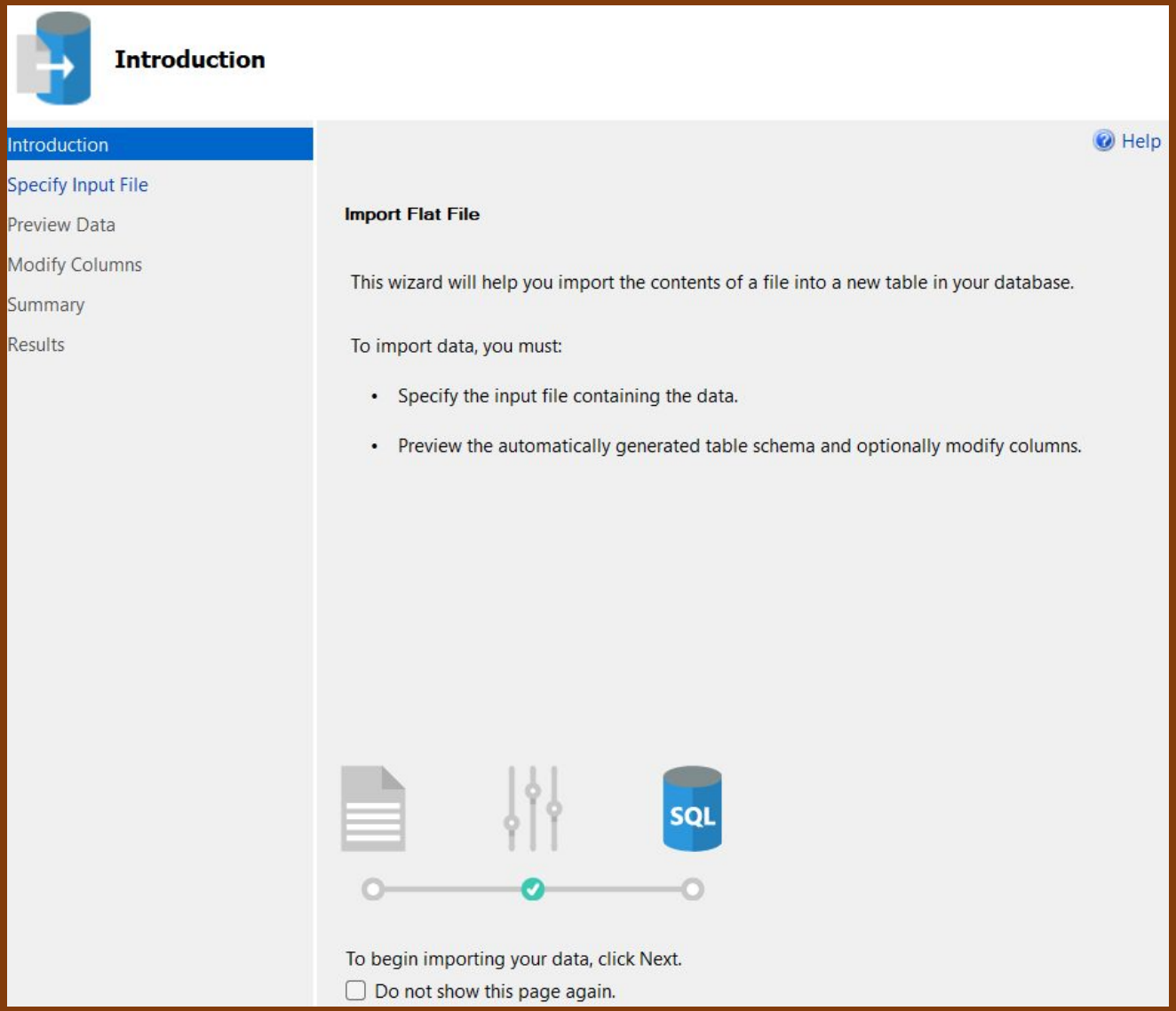
PART 1

MS SQL SERVER

MS SQL SERVER

DATA TUTORIAL

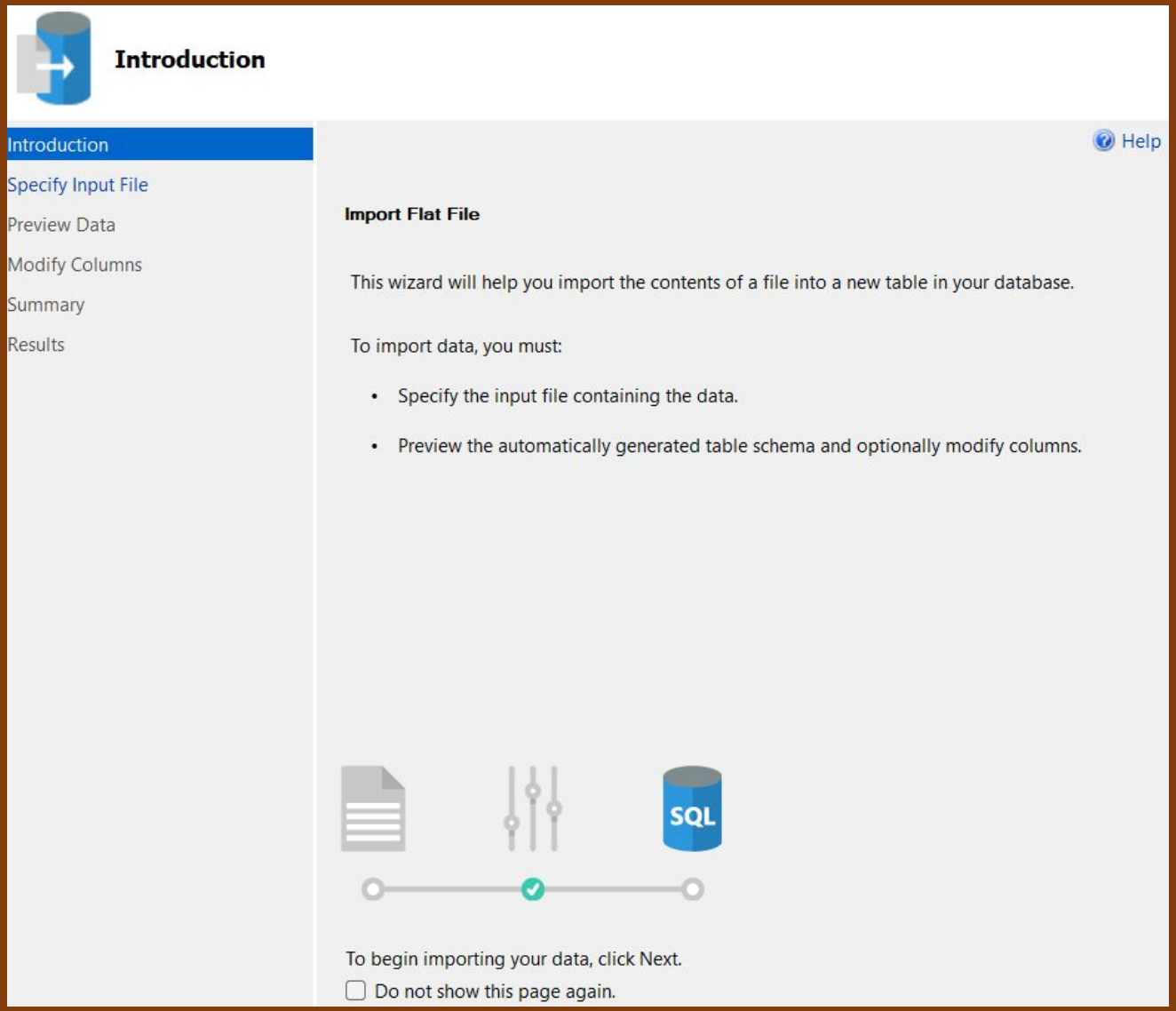
IMPORT DATA



MS SQL SERVER

DATA TUTORIAL

CREATING DB



MS SQL SERVER

DATA TUTORIAL

WRITING QUERIES

```
SELECT
    loan_status,
    COUNT(id) AS LoanCount,
    SUM(total_payment) AS Total_Amount_Received,
    SUM(loan_amount) AS Total_Funded_Amount,
    AVG(int_rate * 100) AS Interest_Rate,
    AVG(dti * 100) AS DTI
FROM
    bank_loan_data
GROUP BY
    loan_status
```

149 %

Results | Messages

	loan_status	LoanCount	Total_Amount_Received	Total_Funded_Amount	Interest_Rate	DTI
1	Fully Paid	32145	411586256	351358350	11.6410707918092	13.1673507557434
2	Charged Off	5333	37284763	65532225	13.8785749318289	14.0047328005517
3	Current	1098	24199914	18866500	15.0993260800947	14.7243442736843

SQL

DATA TUTORIAL

FIRING SQL QUERIES TO SOLVE THE BUSINESS PROBLEMS

COMPARING RESULTS WITH POWER BI, TABLEAU and EXCEL

```
SELECT
    loan_status,
    COUNT(id) AS LoanCount,
    SUM(total_payment) AS Total_Amount_Received,
    SUM(loan_amount) AS Total_Funded_Amount,
    AVG(int_rate * 100) AS Interest_Rate,
    AVG(dti * 100) AS DTI
FROM
    bank_loan_data
GROUP BY
    loan_status
```

149 %

Results | Messages

	loan_status	LoanCount	Total_Amount_Received	Total_Funded_Amount	Interest_Rate	DTI
1	Fully Paid	32145	411586256	351358350	11.6410707918092	13.1673507557434
2	Charged Off	5333	37284763	65532225	13.8785749318289	14.0047328005517
3	Current	1098	24199914	18866500	15.0993260800947	14.7243442736843

You can use the data in any DB to fire queries. Queries used will remain same

DATA ANALYST PORTFOLIO PROJECT

DATA TUTORIAL

BANK LOAN ANALYSIS

PART 2

POWER BI

POWER BI

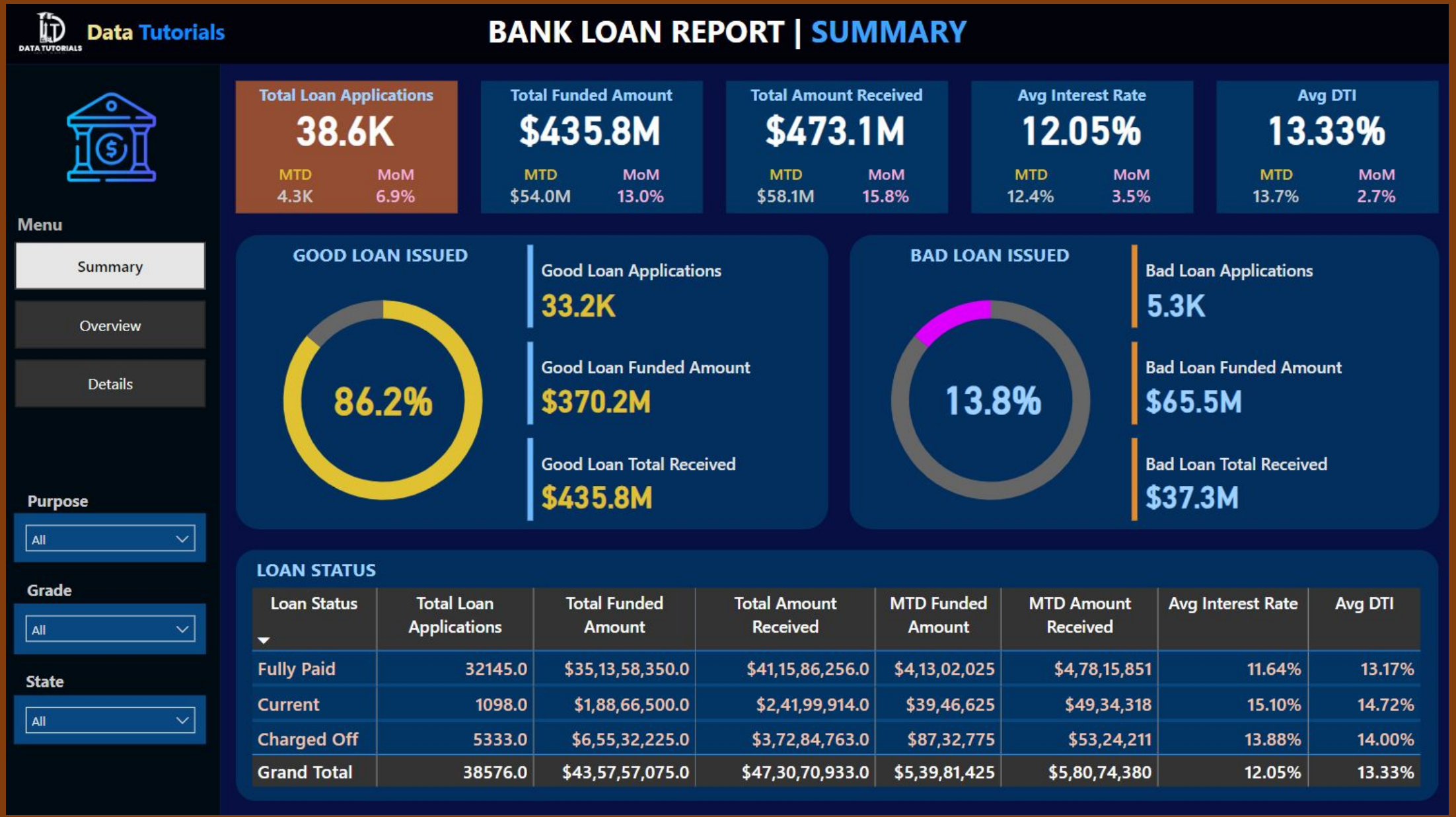
DATA TUTORIAL

DATA IS THE NEW OIL

CONNECTING TO MS SQL SERVER

POWER BI

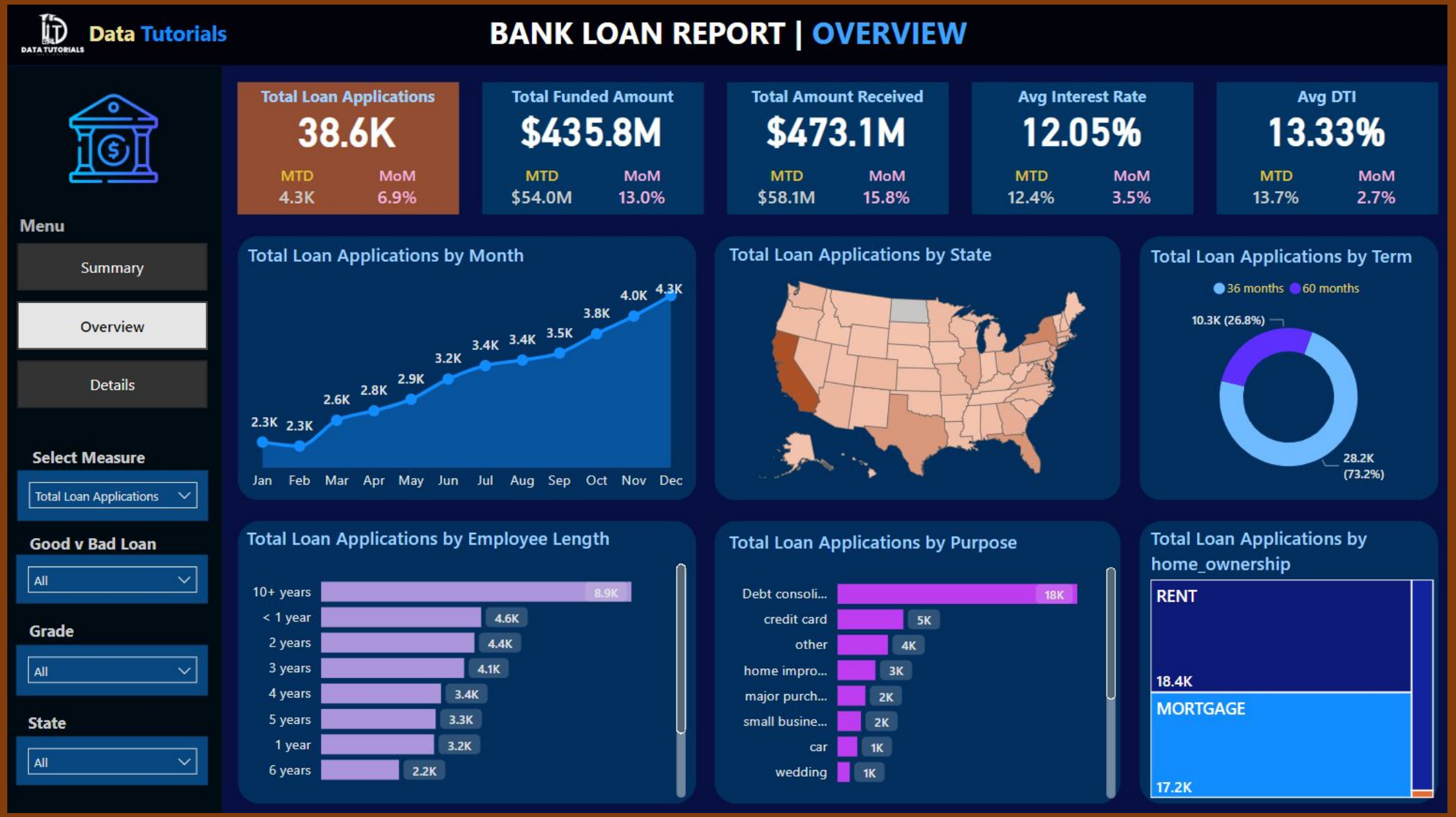
DATA TUTORIAL



Loan Status	Total Loan Applications	Total Funded Amount	Total Amount Received	MTD Funded Amount	MTD Amount Received	Avg Interest Rate	Avg DTI
Fully Paid	32145.0	$35,13,58,350.0	$41,15,86,256.0	$4,13,02,025	$4,78,15,851	11.64%	13.17%
Current	1098.0	$1,88,66,500.0	$2,41,99,914.0	$39,46,625	$49,34,318	15.10%	14.72%
Charged Off	5333.0	$6,55,32,225.0	$3,72,84,763.0	$87,32,775	$53,24,211	13.88%	14.00%
Grand Total	38576.0	$43,57,57,075.0	$47,30,70,933.0	$5,39,81,425	$5,80,74,380	12.05%	13.33%

POWER BI

DATA TUTORIAL



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Data Tutorials

BANK LOAN REPORT | DETAILS

Menu

- Summary
- Overview
- Details

Good v Bad Loan: All

Grade: All

State: All

Total Loan Applications		Total Funded Amount		Total Amount Received		Avg Interest Rate		Avg DTI	
38.6K		$435.8M		$473.1M		12.05%		13.33%	
MTD	MoM	MTD	MoM	MTD	MoM	MTD	MoM	MTD	MoM
4.3K	6.9%	$54.0M	13.0%	$58.1M	15.8%	12.4%	3.5%	13.7%	2.7%

id	purpose	home_ownership	grade	sub_grade	issue_date	Funded Amount	Int Rate	Sum of installment	Amount Collection
54734	Debt consolidation	RENT	B	B4	09 August 2021	$25,000.0	11.89%	$829.1	$29,330.0
55742	credit card	RENT	B	B5	08 May 2021	$7,000.0	10.71%	$228.2	$8,216.0
57245	Debt consolidation	OWN	C	C2	10 March 2021	$1,200.0	13.11%	$40.5	$1,458.0
57416	Debt consolidation	RENT	C	C3	09 November 2021	$10,800.0	13.57%	$366.9	$13,208.0
58915	Debt consolidation	RENT	B	B3	08 April 2021	$7,500.0	10.08%	$162.3	$5,844.0
59006	credit card	MORTGAGE	C	C5	09 September 2021	$3,000.0	14.26%	$102.9	$3,705.0
61390	credit card	MORTGAGE	A	A5	10 February 2021	$4,000.0	7.88%	$125.1	$4,452.0
61419	Debt consolidation	RENT	D	D2	10 February 2021	$5,600.0	14.96%	$194.0	$6,475.0
62102	Debt consolidation	RENT	B	B1	10 April 2021	$3,200.0	9.88%	$103.1	$3,414.0
65426	car	MORTGAGE	B	B1	09 August 2021	$4,000.0	11.14%	$131.2	$2,755.0
65640	home improvement	MORTGAGE	C	C2	08 May 2021	$5,000.0	11.34%	$87.2	$3,154.0
66431	Debt consolidation	RENT	B	B5	09 February 2021	$2,525.0	12.21%	$84.1	$3,028.0
66749	Debt consolidation	MORTGAGE	C	C4	08 December 2021	$10,625.0	13.47%	$360.4	$12,975.0
66943	Debt consolidation	RENT	B	B4	10 August 2021	$2,800.0	11.49%	$61.6	$3,144.0
66964	Debt consolidation	MORTGAGE	D	D3	08 June 2021	$7,500.0	13.24%	$253.6	$9,129.0
67503	Debt consolidation	MORTGAGE	A	A4	09 October 2021	$10,000.0	8.59%	$316.1	$11,280.0
68163	small business	MORTGAGE	A	A3	10 February 2021	$3,000.0	7.14%	$92.8	$3,342.0
68381	Debt consolidation	RENT	A	A5	08 March 2021	$6,625.0	8.63%	$209.5	$7,542.0

PROBLEM STATEMENT

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DASHBOARD 1: SUMMARY

Key Performance Indicators (KPIs) Requirements:

1. **Total Loan Applications:** We need to calculate the total number of loan applications received during a specified period. Additionally, it is essential to monitor the Month-to-Date (MTD) Loan Applications and track changes Month-over-Month (MoM).
2. **Total Funded Amount:** Understanding the total amount of funds disbursed as loans is crucial. We also want to keep an eye on the MTD Total Funded Amount and analyse the Month-over-Month (MoM) changes in this metric.
3. **Total Amount Received:** Tracking the total amount received from borrowers is essential for assessing the bank's cash flow and loan repayment. We should analyse the Month-to-Date (MTD) Total Amount Received and observe the Month-over-Month (MoM) changes.
4. **Average Interest Rate:** Calculating the average interest rate across all loans, MTD, and monitoring the Month-over-Month (MoM) variations in interest rates will provide insights into our lending portfolio's overall cost.
5. **Average Debt-to-Income Ratio (DTI):** Evaluating the average DTI for our borrowers helps us gauge their financial health. We need to compute the average DTI for all loans, MTD, and track Month-over-Month (MoM) fluctuations.

PROBLEM STATEMENT

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DASHBOARD 1: SUMMARY

Good Loan v Bad Loan KPI's

Good Loan:

1. Good Loan Application Percentage
2. Good Loan Applications
3. Good Loan Funded Amount
4. Good Loan Total Received Amount

Bad Loan

1. Bad Loan Application Percentage
2. Bad Loan Applications
3. Bad Loan Funded Amount
4. Bad Loan Total Received Amount

Loan Status Grid View

In order to gain a comprehensive overview of our lending operations and monitor the performance of loans, we aim to create a grid view report categorized by 'Loan Status.' By providing insights into metrics such as 'Total Loan Applications,' 'Total Funded Amount,' 'Total Amount Received,' 'Month-to-Date (MTD) Funded Amount,' 'MTD Amount Received,' 'Average Interest Rate,' and 'Average Debt-to-Income Ratio (DTI),' this grid view will empower us to make data-driven decisions and assess the health of our loan portfolio.

PROBLEM STATEMENT

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DASHBOARD 2: OVERVIEW

CHARTS

1. **Monthly Trends by Issue Date (Line Chart):** To identify seasonality and long-term trends in lending activities
2. **Regional Analysis by State (Filled Map):** To identify regions with significant lending activity and assess regional disparities
3. **Loan Term Analysis (Donut Chart):** To allow the client to understand the distribution of loans across various term lengths.
4. **Employee Length Analysis (Bar Chart):** How lending metrics are distributed among borrowers with different employment lengths, helping us assess the impact of employment history on loan applications.
5. **Loan Purpose Breakdown (Bar Chart):** **W**ill provide a visual breakdown of loan metrics based on the stated purposes of loans, aiding in the understanding of the primary reasons borrowers seek financing.
6. **Home Ownership Analysis (Tree Map):** For a hierarchical view of how home ownership impacts loan applications and disbursements.

Metrics to be shown: 'Total Loan Applications,' 'Total Funded Amount,' and 'Total Amount Received'

PROBLEM STATEMENT

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DASHBOARD 3: DETAILS

GRID

Need for a comprehensive 'Details Dashboard' that provides a consolidated view of all the essential information within our loan data. This Details Dashboard aims to offer a holistic snapshot of key loan-related metrics and data points, enabling users to access critical information efficiently.

Objective:

The primary objective of the Details Dashboard is to provide a comprehensive and user-friendly interface for accessing vital loan data. It will serve as a one-stop solution for users seeking detailed insights into our loan portfolio, borrower profiles, and loan performance.

FUNCTIONALITIES YOU WILL LEARN

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SQL – MS SQL SERVER

- ✔ Creating Database
- ✔ Creating Table
- ✔ Select
- ✔ Datename
- ✔ Datepart
- ✔ Cast
- ✔ Decimal
- ✔ Month
- ✔ Hour
- ✔ Quarter
- ✔ Day
- ✔ Group by
- ✔ Order by
- ✔ Decimal
- ✔ Limit
- ✔ Count
- ✔ Distinct
- ✔ CTE
- ✔ Partition

POWER BI

- ✔ Connecting to SQL Server
- ✔ Data Cleaning
- ✔ Data Modelling
- ✔ Data Processing
- ✔ Power Query
- ✔ Date Tables
- ✔ Time Intelligence Func
- ✔ DAX
- ✔ Date Function
- ✔ Text Function
- ✔ Filter Function
- ✔ Calculate
- ✔ SUM/ SUMX
- ✔ Creating KPI’s
- ✔ New Card Visual
- ✔ Creating Charts
- ✔ Formatting visuals
- ✔ Creating Functions
- ✔ Navigations

SOFTWARE USED

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MS OFFICE/ EXCEL: VERSION 2021

MS SQL SERVER: 19.0
SQL SERVER MANAGEMENT STUDIO – 19.0.20209.0

POWER BI: JUNE 2023 Version

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