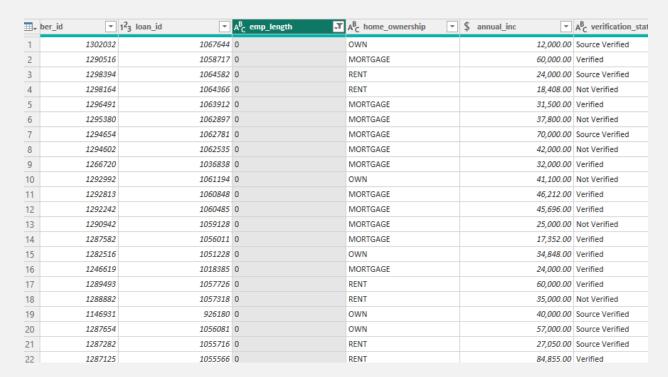
PROJECT

2) Transformation Using Power Query

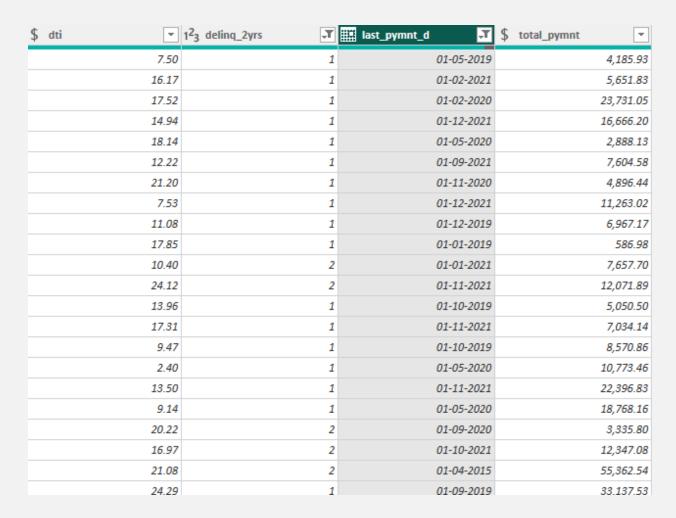
Data Cleaning:

Handling Missing Values and Duplicates:

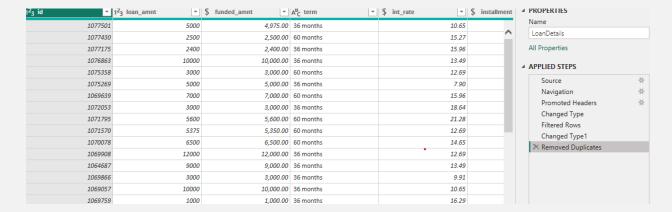
> Replace missing values (null) in the 'emp_length' column of the "BorrowerDetails" table with '0 year'.



➤ Remove rows with missing values in the 'last_pymnt_d' and 'delinq_2yrs' columns.

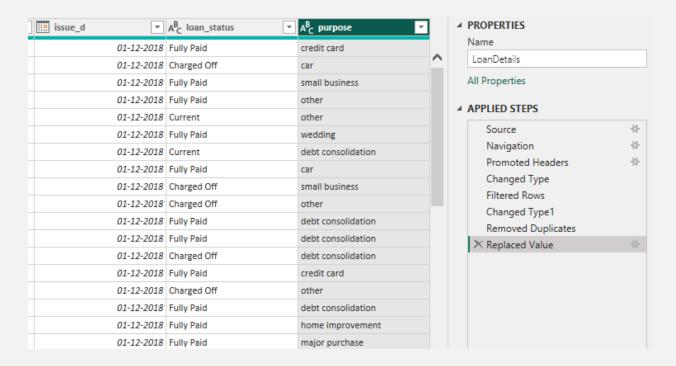


> Remove duplicate rows in the 'id' column of the "LoanDetails" table.

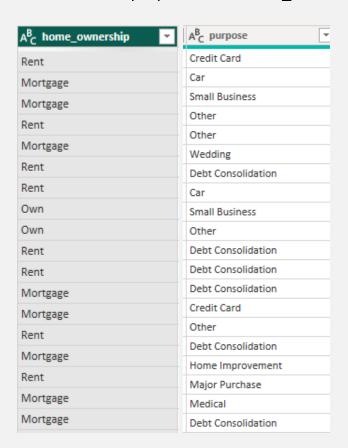


Dealing with Inconsistencies:

Ensure words in the 'purpose' column are separated by spaces instead of underscores (e.g., "credit card" instead of "credit_card").



> Format the 'purpose' and 'home_ownership' columns to proper case.



Data Transformation:

Column Transformation:

➤ Change the data type of the 'total_pymnt' column to 'Fixed decimal number'.

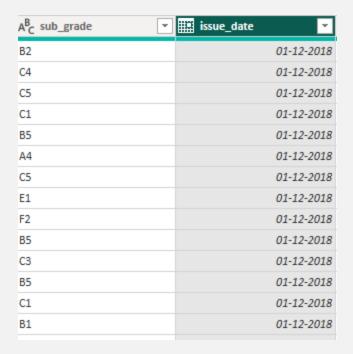
last_pymnt_d	~	\$ total_pymnt	~
	01-05-2019		4,185.93
	01-02-2021		5,651.83
	01-02-2020		23,731.05
	01-12-2021		16,666.20
	01-05-2020		2,888.13
	01-09-2021		7,604.58
	01-11-2020		4,896.44
	01-12-2021		11,263.02
	01-12-2019		6,967.17
	01-01-2019		586.98
	01-01-2021		7,657.70
	01-11-2021		12,071.89
	01-10-2019		5,050.50
	01-11-2021		7,034.14
	01-10-2019		8,570.86
	01-05-2020		10,773.46
	01-11-2021		22,396.83
	01-05-2020		18,768.16
	01-09-2020		3,335.80
	01-10-2021		12,347.08
	01-04-2015		55,362.54
	01-09-2019		33,137.53

> Round off the numbers in the 'funded_amnt' column to 2 decimal places.

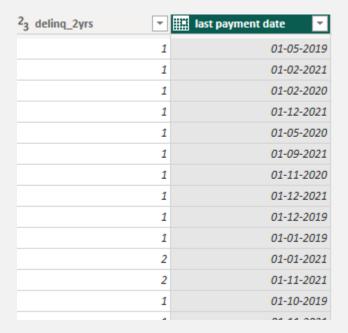
2 ₃ Ioan_amnt	Ŧ	\$ funded_amnt	٧
50	000		4,975.00
2:	500		2,500.00
24	100		2,400.00
100	000		10,000.00
30	000		3,000.00
50	000		5,000.00
70	000		7,000.00
30	000		3,000.00
50	500		5,600.00
53	375		5,350.00
65	500		6,500.00
120	000		12,000.00
90	000		9,000.00
30	000		3,000.00
100	000		10,000.00
10	000		1,000.00
100	000		10,000.00
30	500		3,600.00
60	000		6,000.00
92	200		9,200.00
202	250		19,142.16
210	000		21,000.00

Column Renaming:

> Rename the column 'issue_d' to 'issue_date'.

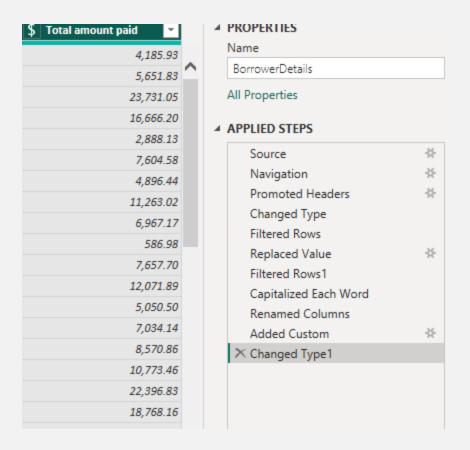


> Rename the column 'last_payment_d' to 'last_payment_date'.



Creating New Columns:

➤ Create a new custom column named 'total_amount_paid' to calculate the total amount paid by each borrower by subtracting 'out_prncp' from 'total_pymnt'.



Add a new conditional column named 'delinquency_status' to identify if the borrower has any delinquencies. If the number of delinquencies in 'delinq_2yrs' is greater than 0, the status should be "Delinquent", otherwise "Not Delinquent".

1	\$ Total amount paid	ABC delinquency_status
Ī	5,861.07	Not Delinquent
١	1,008.71	Not Delinquent
١	3,003.65	Not Delinquent
١	12,226.30	Not Delinquent
)	2,475.27	Not Delinquent
)	5,631.38	Not Delinquent
ï	6,247.69	Not Delinquent
١	3,938.14	Not Delinquent
١	646.02	Not Delinquent
١	1,476.19	Not Delinquent
١	7,677.52	Not Delinquent
١	13,943.08	Not Delinquent
١	2,270.70	Not Delinquent
١	3,478.98	Not Delinquent
١	7,471.99	Not Delinquent
١	1,270.17	Not Delinquent
١	12,519.26	Not Delinquent
)	3,785.02	Not Delinquent
)	7,164.50	Delinquent
)	9,459.96	Not Delinquent
)	27,663.04	Not Delinquent
,	14,025.40	Not Delinquent

Column Dropping:

> Remove the 'sub_grade' column as that does not significantly contribute to the analysis.

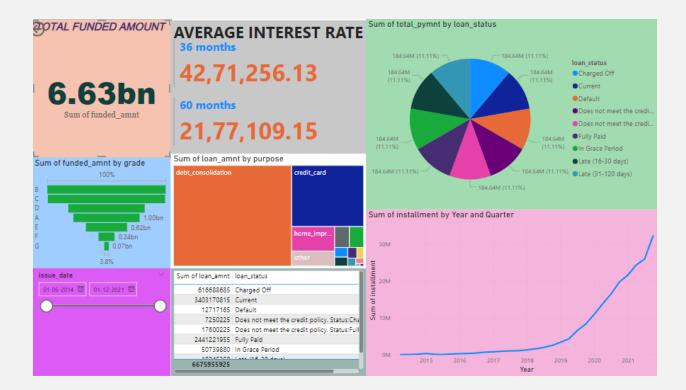
\$ installment	A ^B _C grade	issue_date
162.87	В	01-12-2018
59.83	С	01-12-2018
84.33	С	01-12-2018
339.31	С	01-12-2018
67.79	В	01-12-2018
156.46	A	01-12-2018
170.08	С	01-12-2018
109.43	E	01-12-2018
152.39	F	01-12-2018
121.45	В	01-12-2018
153.45	С	01-12-2018
402.54	В	01-12-2018
305.38	С	01-12-2018
96.68	В	01-12-2018
325.74	В	01-12-2018
35.31	D	01-12-2018
347.98	С	01-12-2018

REPORT 1

Loan Performance Analysis

The Loan Performance Analysis report aims to provide insights into the performance of loans based on various factors such as loan amount, loan status, term, interest rate, and purpose.

- Total Funded Amount: Create a card visual to display the total funded amount.
- Fully Paid Loan Percentage: Create a gauge chart to display the 'Fully Paid Loan Percentage' measure.
- ➤ Average Interest Rate by Term: Create a multi-row card to show the average interest rate for each term.
- ➤ Loan Status Distribution: Create a pie chart to visualize the sum of total payments by loan status.
- ➤ Loan Amount by Purpose: Create a treemap to show the average loan amount by purpose.
- Installment Over Time: Create a line chart to visualize the sum of installments by Year and Quarter of the issue date.
- ➤ Maximum Total Amount Paid by Loan Status: Create a column chart to display the maximum total amount paid by loan status.
- ➤ Minimum Annual Income by Grade: Create a funnel chart to show the minimum annual income by grade.
- ➤ Issue Date Slicer: Add a slicer for the Month of the issue date to enable dynamic data exploration.



REPORT 2

Borrower Profile Analysis

The Borrower Profile Analysis report aims to provide insights into the characteristics of borrowers such as home ownership, annual income, employment length, verification status, debt-to-income ratio, and delinquency history.

- > KPI Visual: Create a KPI visual with the sum of total payment as the value, the year of last payment date as the trend axis, and the sum of loan amount as the target. Round off to 2 decimal points and format as \$ currency.
- ➤ Average of Annual Income: Display the average of annual income using a card visual.
- ➤ Non-Verified Borrowers Count: Display the count of non-verified borrowers using a card visual.
- > Average Debt-to-Income by Delinquency Status: Create a multi-row card to show

the average debt-to-income ratio by delinquency status.

- ➤ Sum of Loan Amount by Home Ownership: Create a table to show the total loan amount by home ownership.
- ➤ Average Remaining Principal by Verification Status: Create a donut chart to display the average remaining outstanding principal by verification status.
- Sum of Delinquencies by Home Ownership: Create a bar chart to show the total number of delinquencies in the past 2 years by home ownership and filter the visual to display only Mortgage, Rent, and Own.
- ➤ Max Remaining Installments by Employment Length: Create a treemap to show the maximum remaining installments by employment length.
- Total Amount Paid and Funded Amount Over Time: Create a line chart to display the sum of total amount paid and the sum of funded amount by the year of last payment date.
- ➤ Purpose Slicer: Add a slicer for loan purpose to enable dynamic data exploration.

