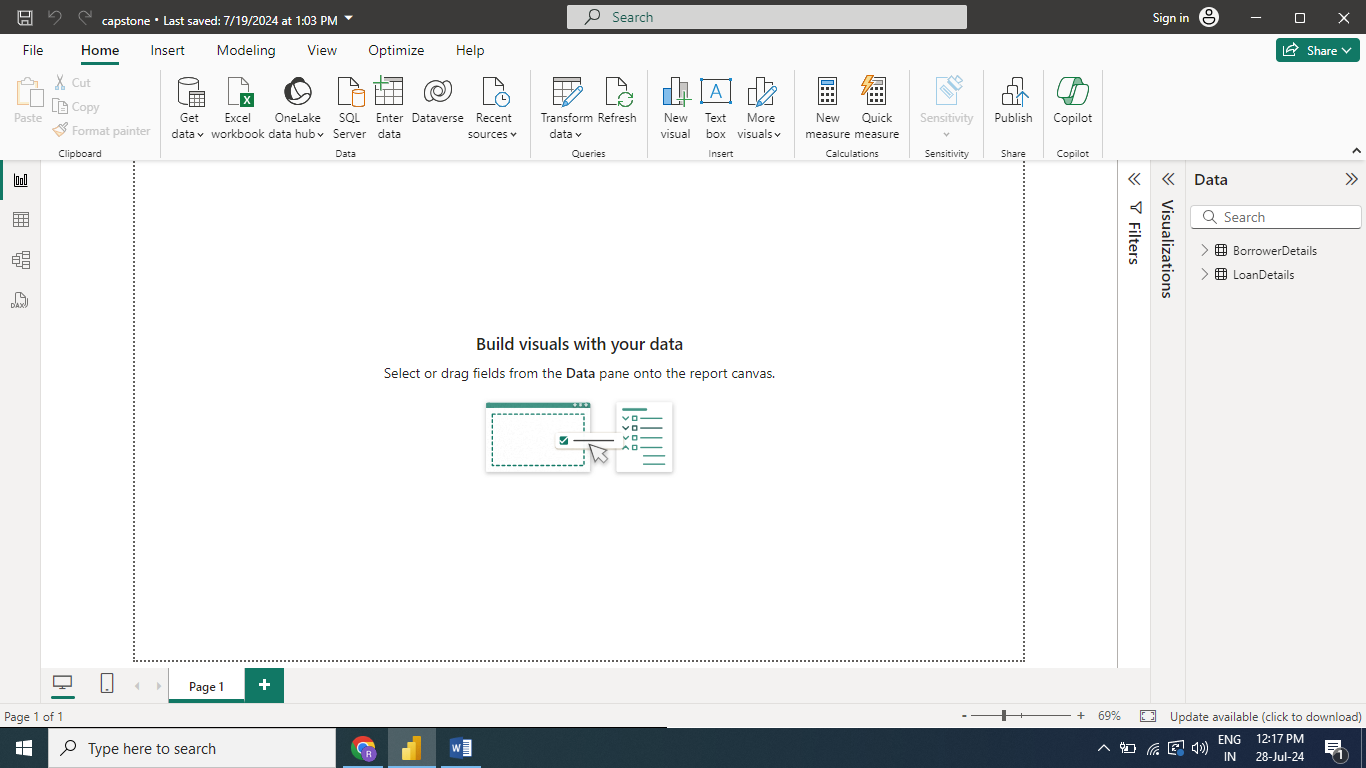
**PowerBI Capstone project - Bank Loan Performance Analysis**

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1. **Importing Data**

Import the "LoanDetails" and "BorrowerDetails" sheets from the "bank loan.xlsx" file into Power BI.

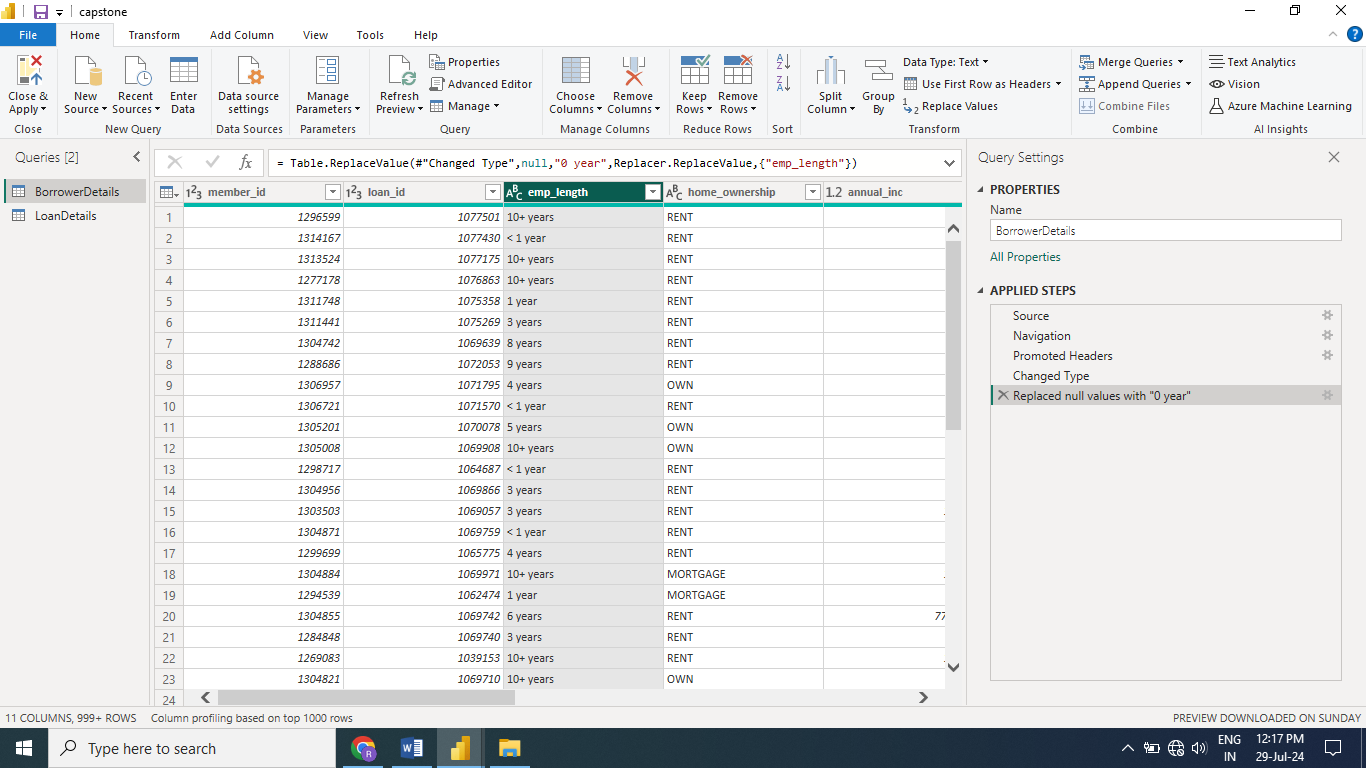


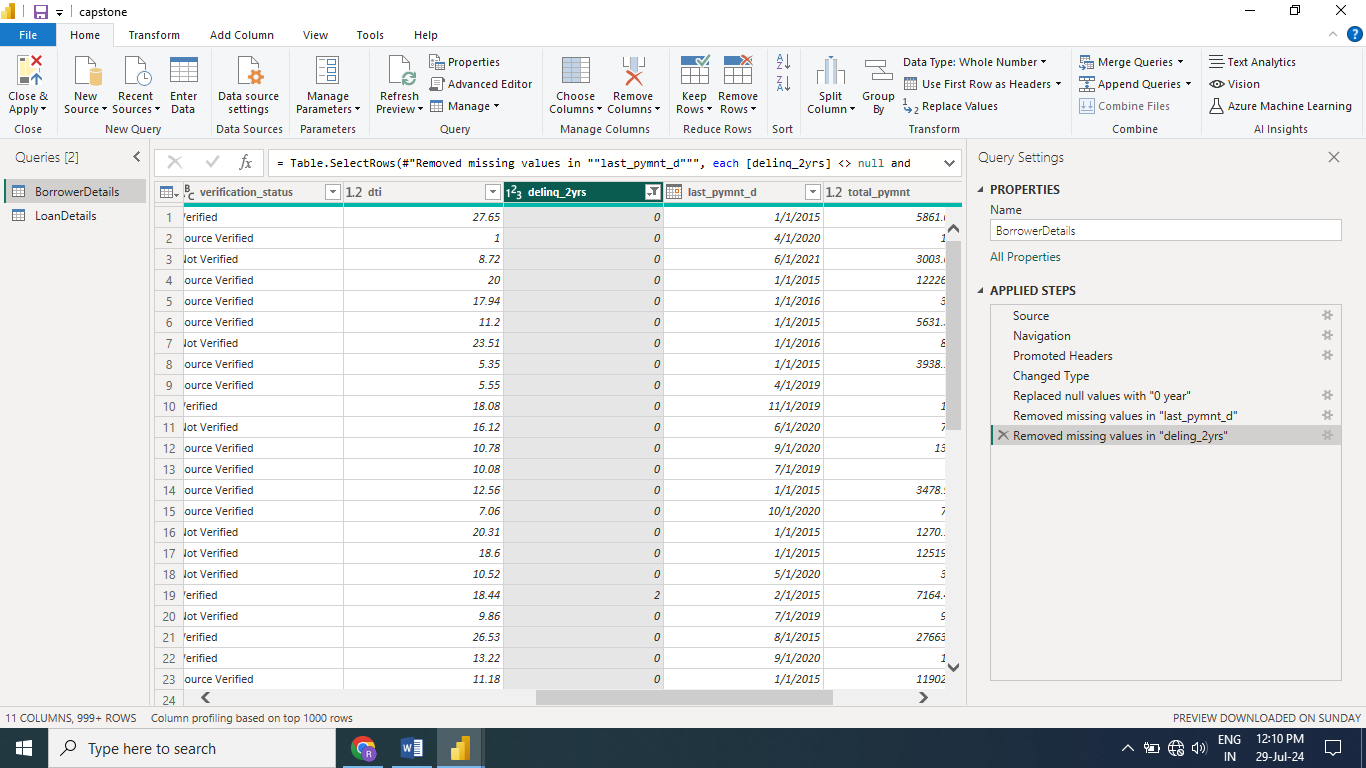
**2) Transformation Using Power Query**

**Data Cleaning:**

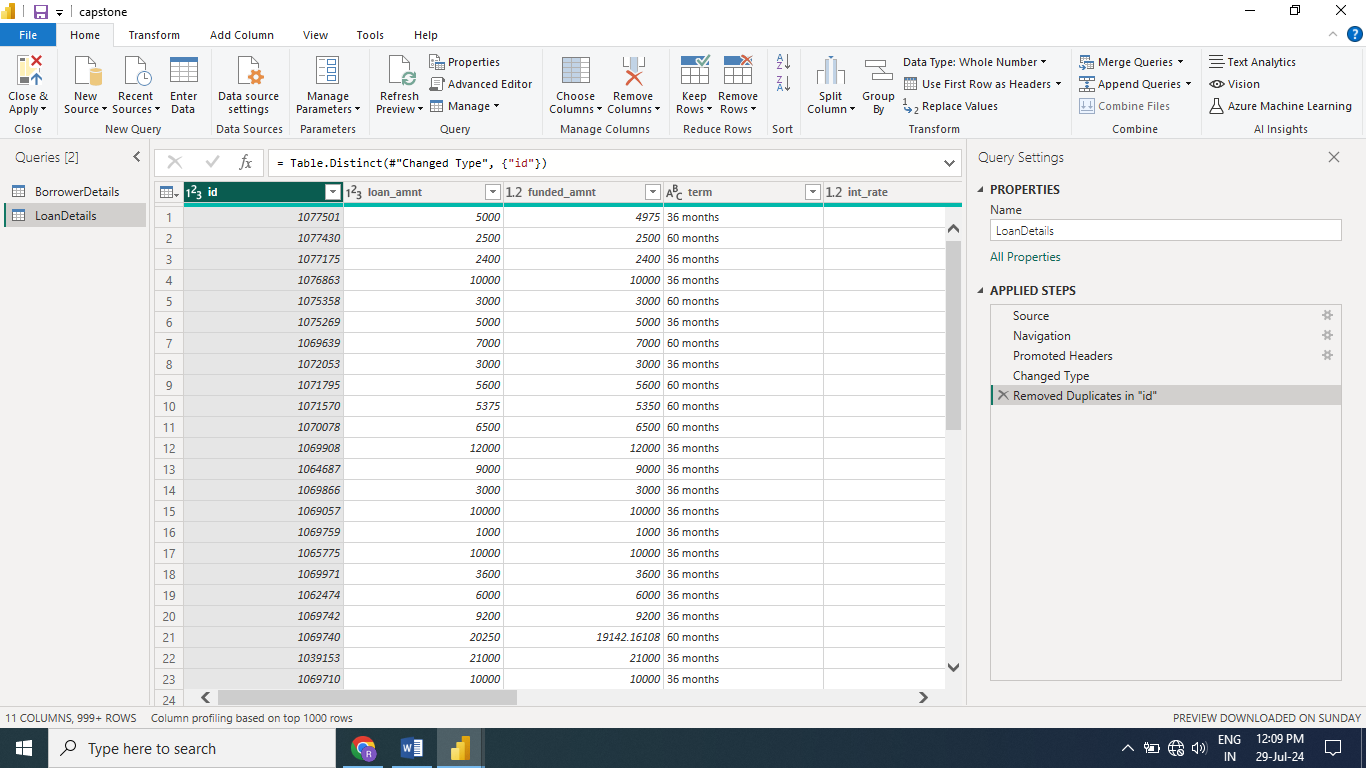
**Handling Missing Values and Duplicates:**

➢ Replace missing values (null) in the 'emp\_length' column of the "BorrowerDetails" table with '0 year'.



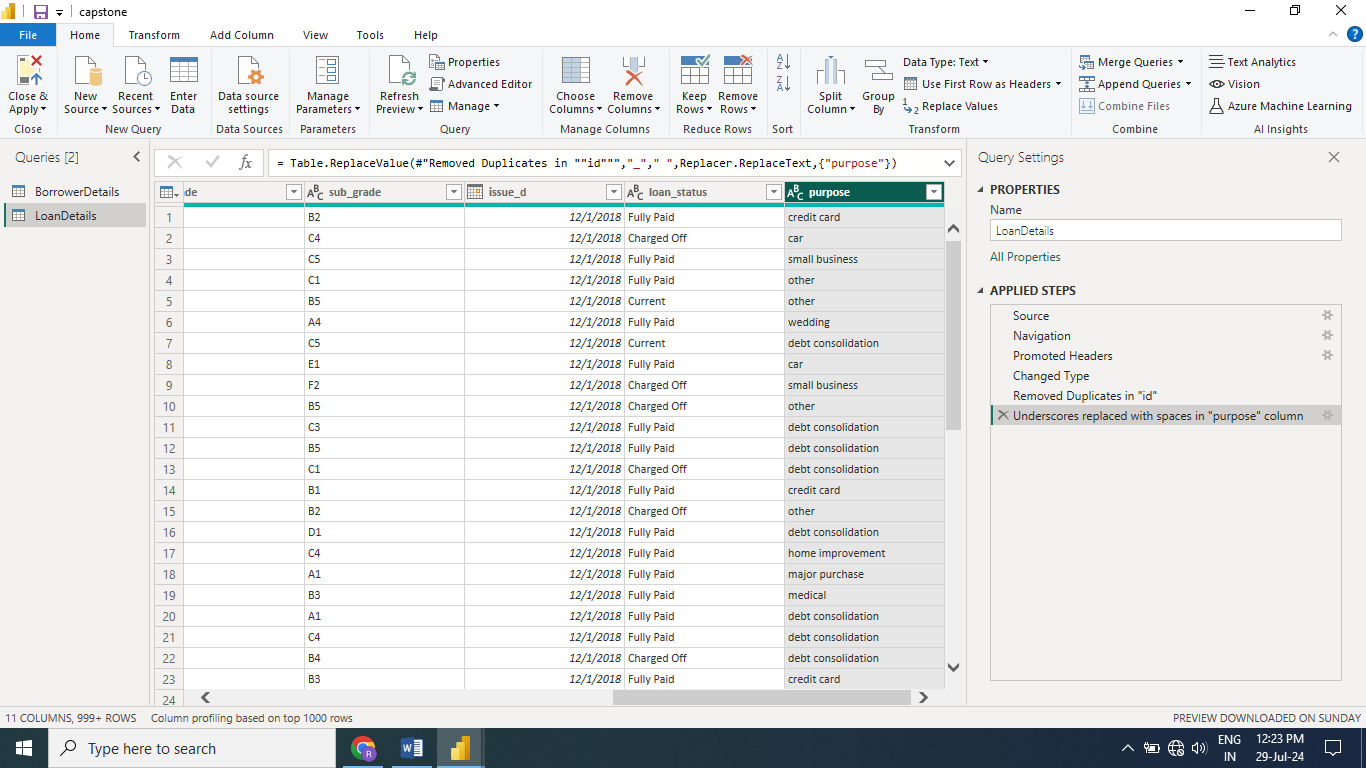
➢ Remove rows with missing values in the 'last\_pymnt\_d' and 'delinq\_2yrs' columns. 

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

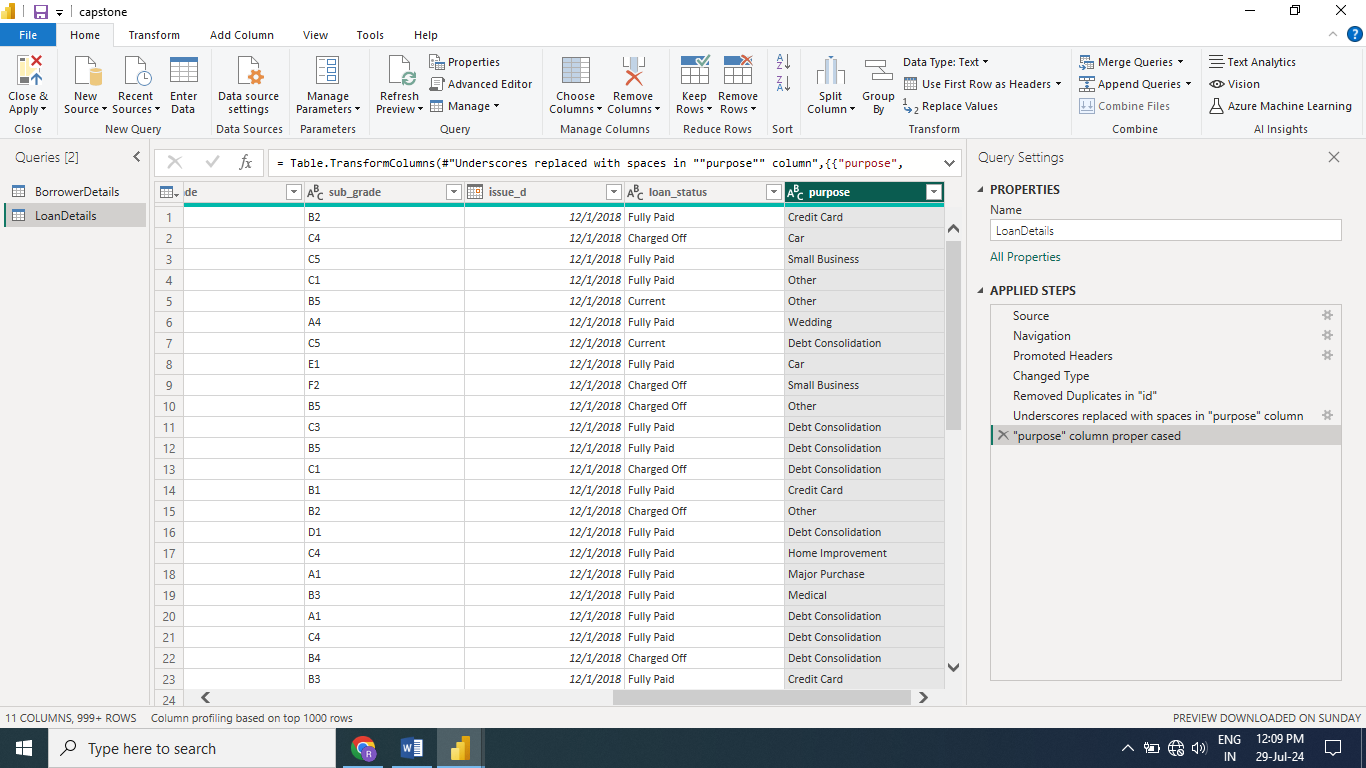


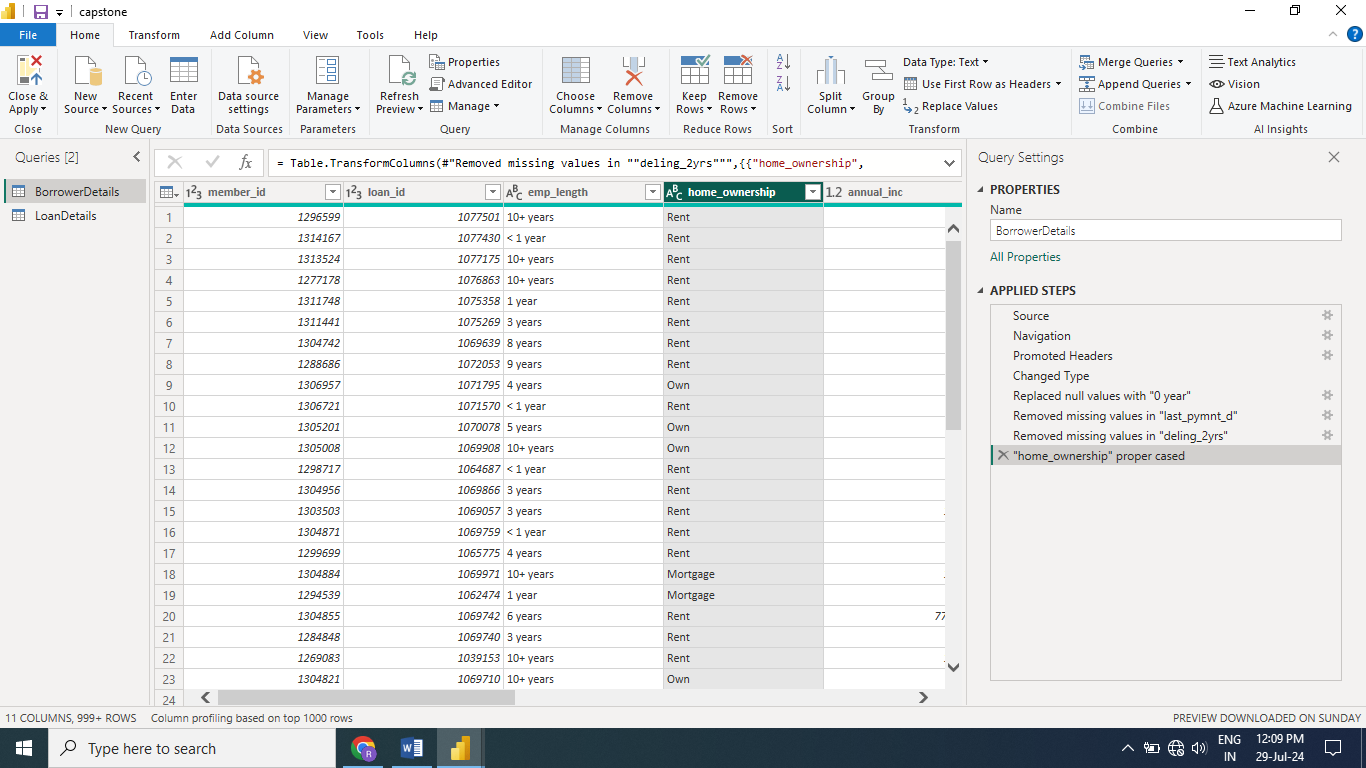
**Dealing with Inconsistencies:**

➢ 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.

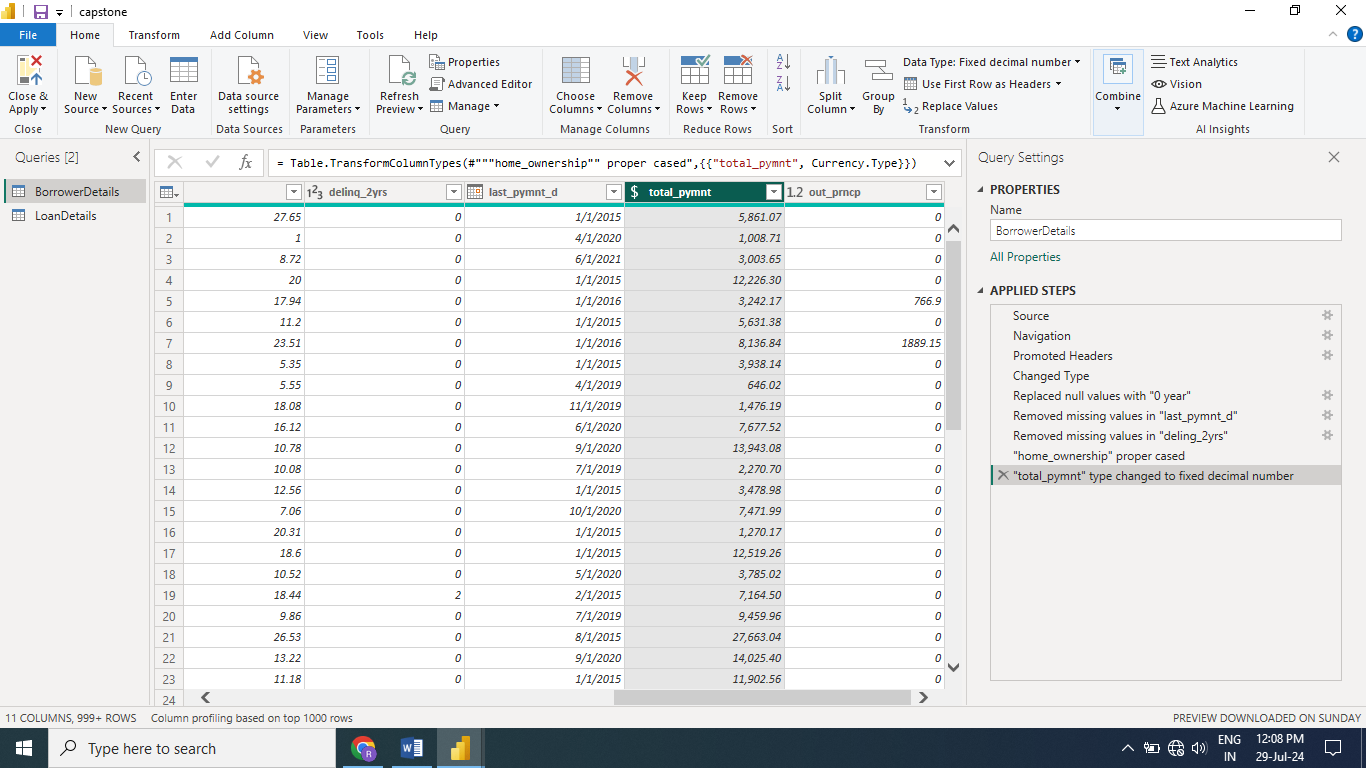




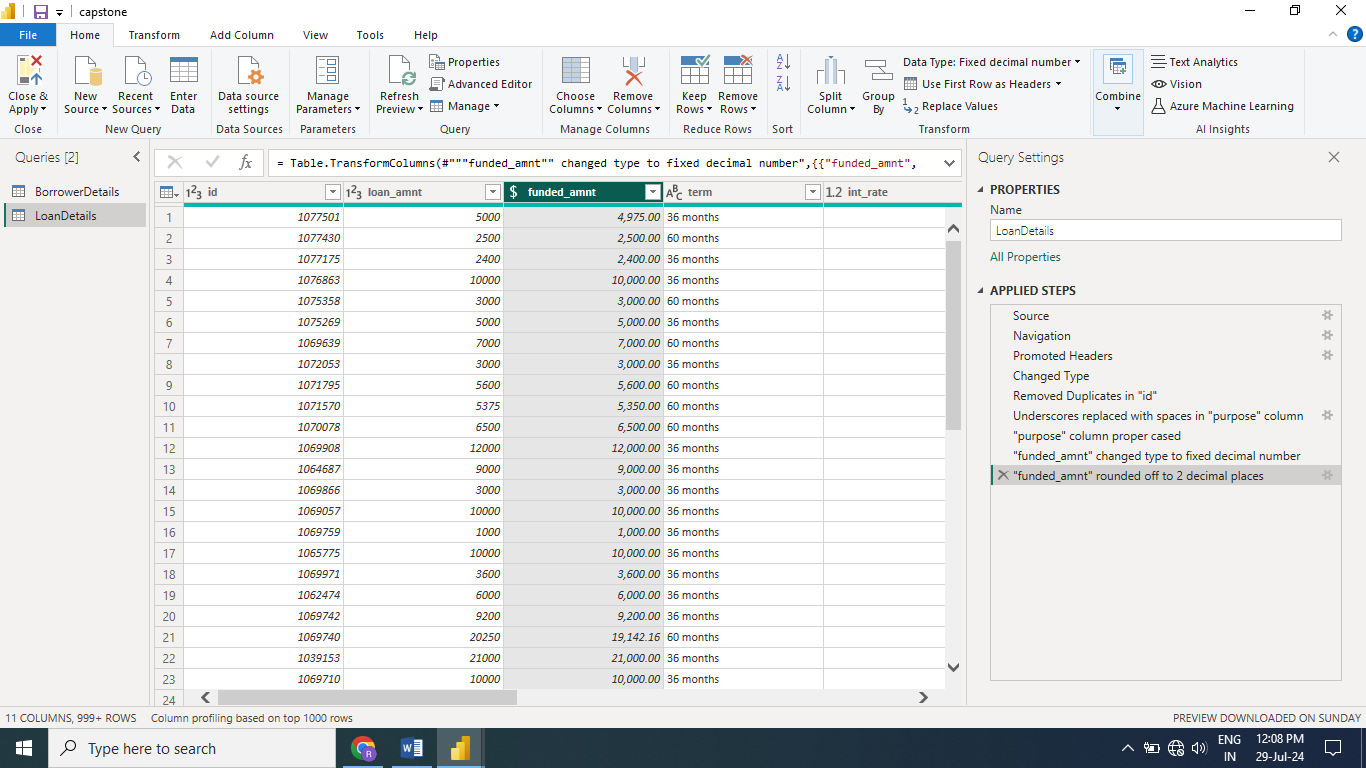
**Data Transformation:**

**Column Transformation:**

➢ Change the data type of the 'total\_pymnt' column to 'Fixed decimal number'.

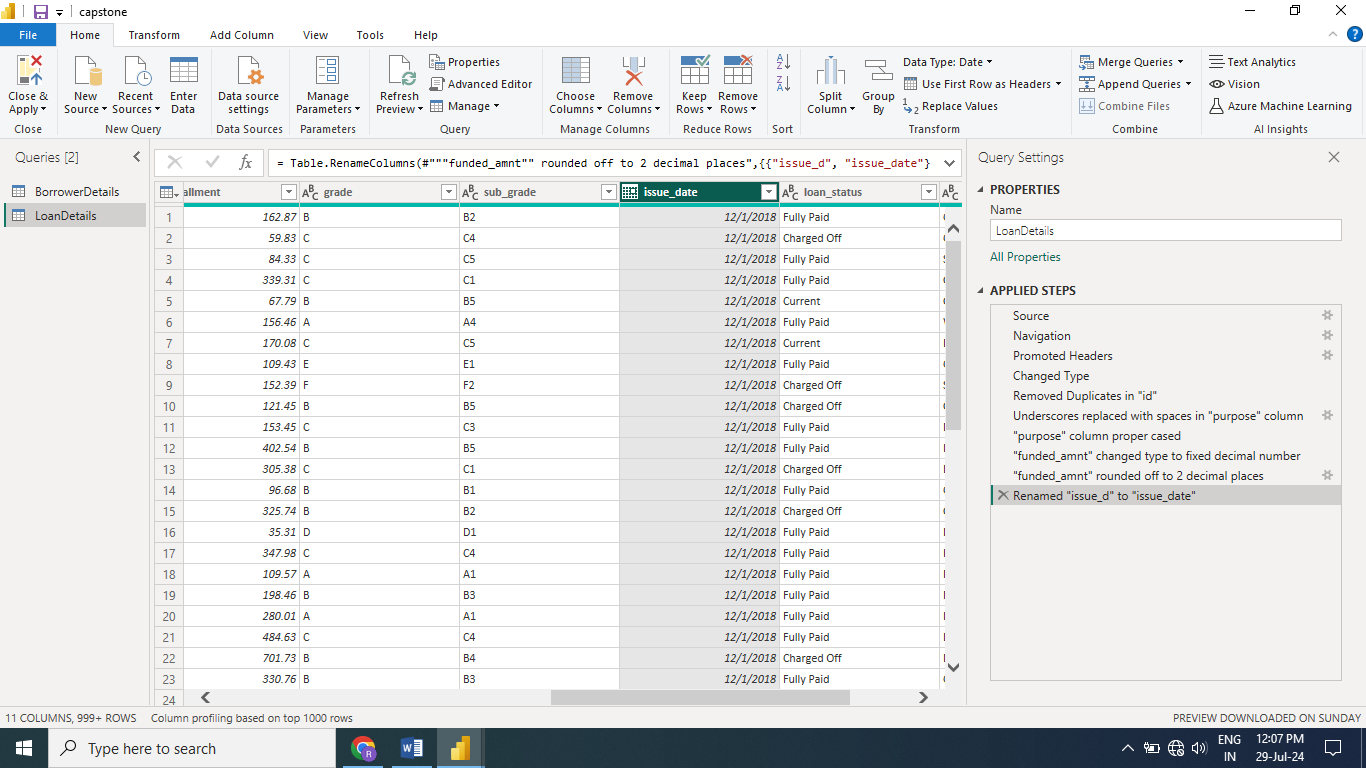


➢ Round off the numbers in the 'funded\_amnt' column to 2 decimal places

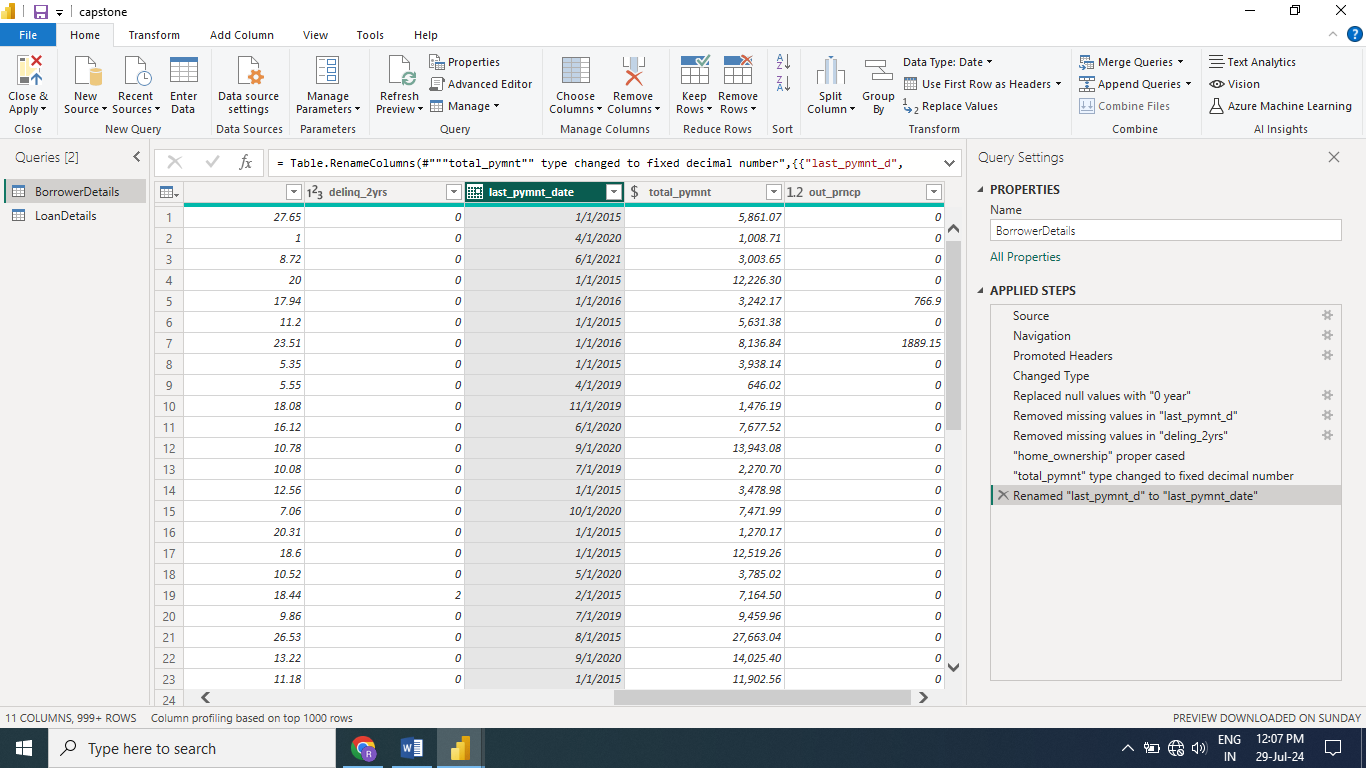


**Column Renaming:**

➢ Rename the column 'issue\_d' to 'issue\_date'.

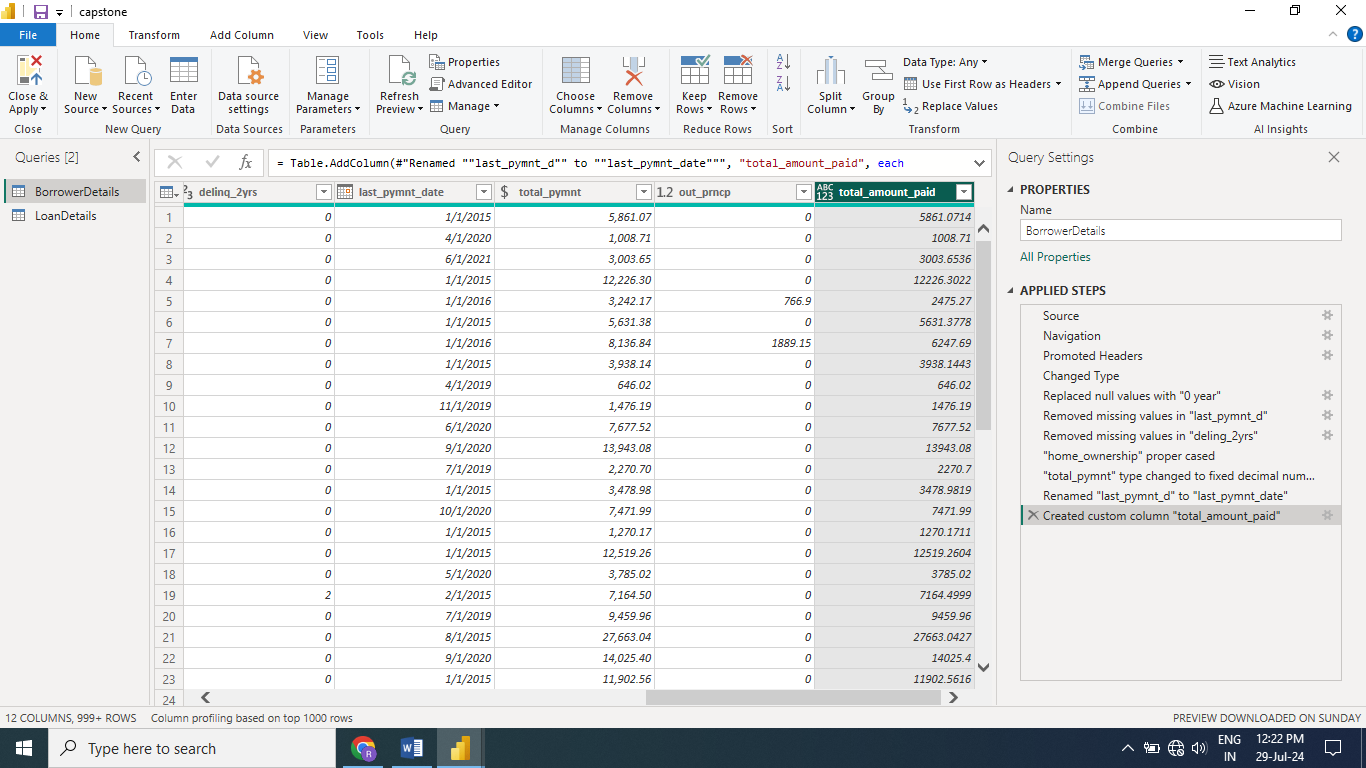


➢ Rename the column 'last\_pymnt\_d' to 'last\_pymnt\_date'.

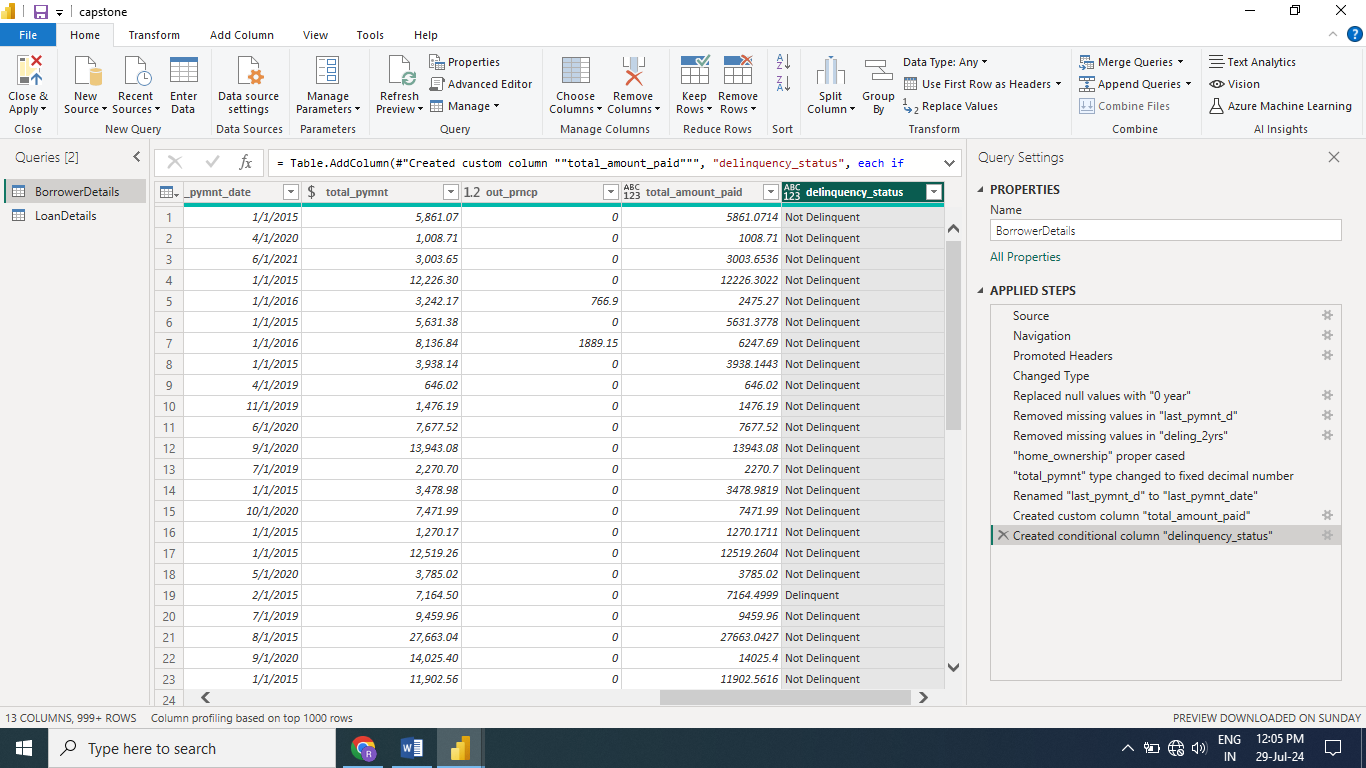


**Creating New Columns:**

➢ 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'.

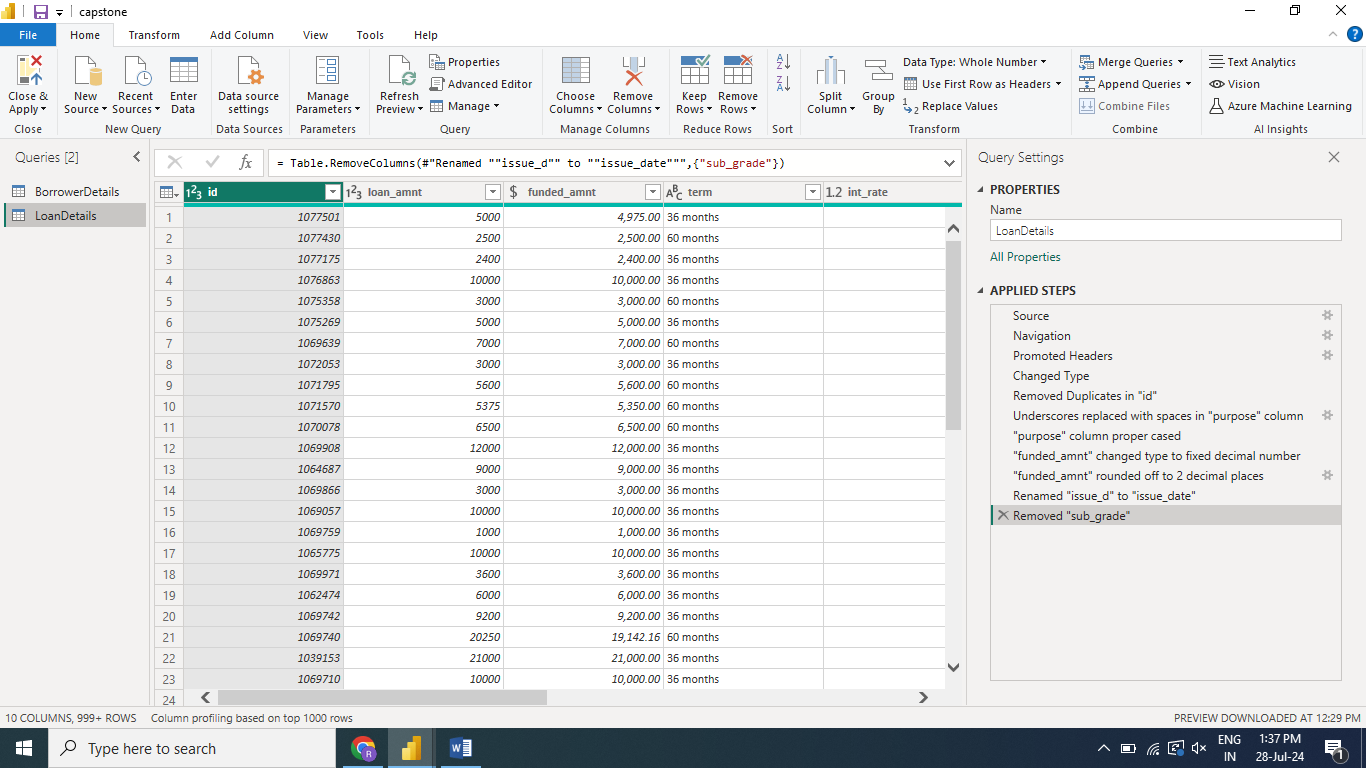


➢ Add a new conditional column named 'delinquency\_status' to identify if the borrower has any delinquencies. If the number of delinquencies in 'delinq\_2yrs' is greater than 0, the status should be "Delinquent", otherwise "Not Delinquent".



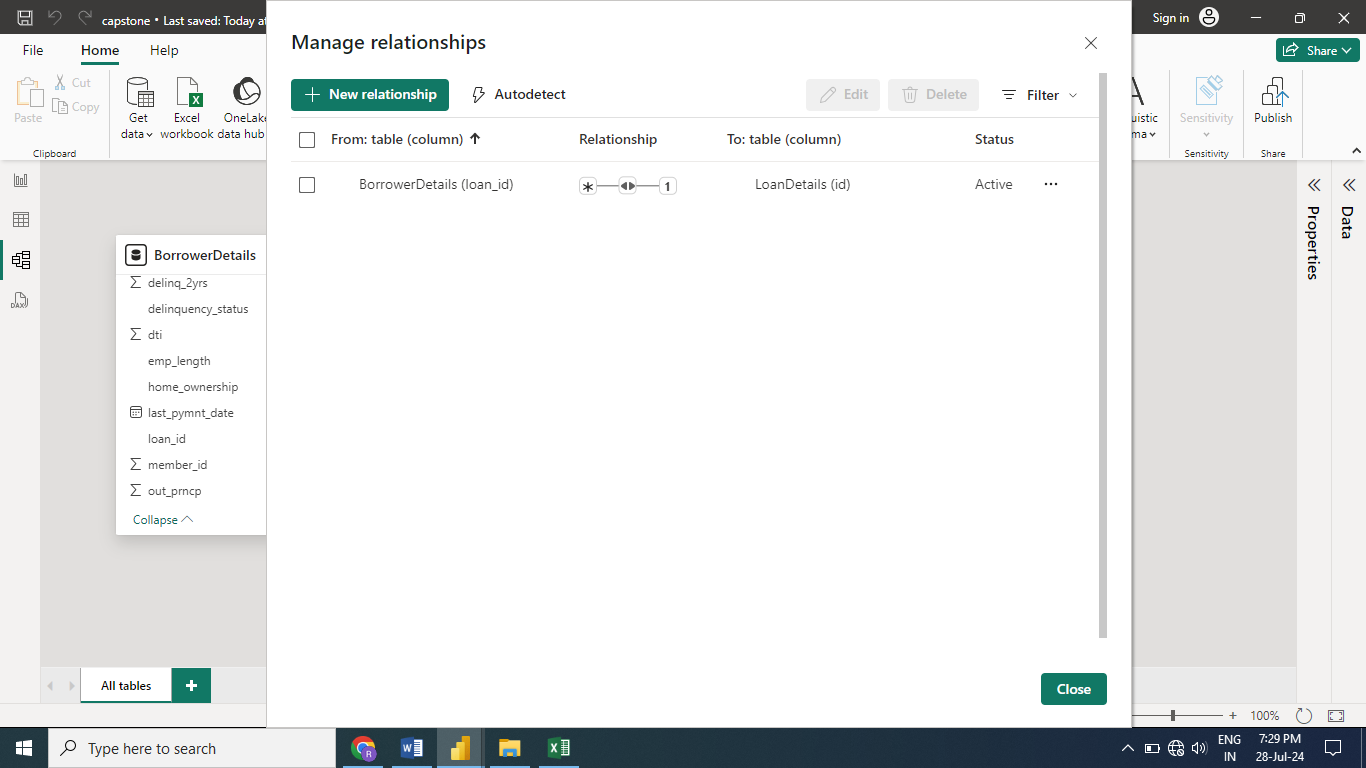
**Column Dropping:**

➢ Remove the 'sub\_grade' column as that does not significantly contribute to the analysis.



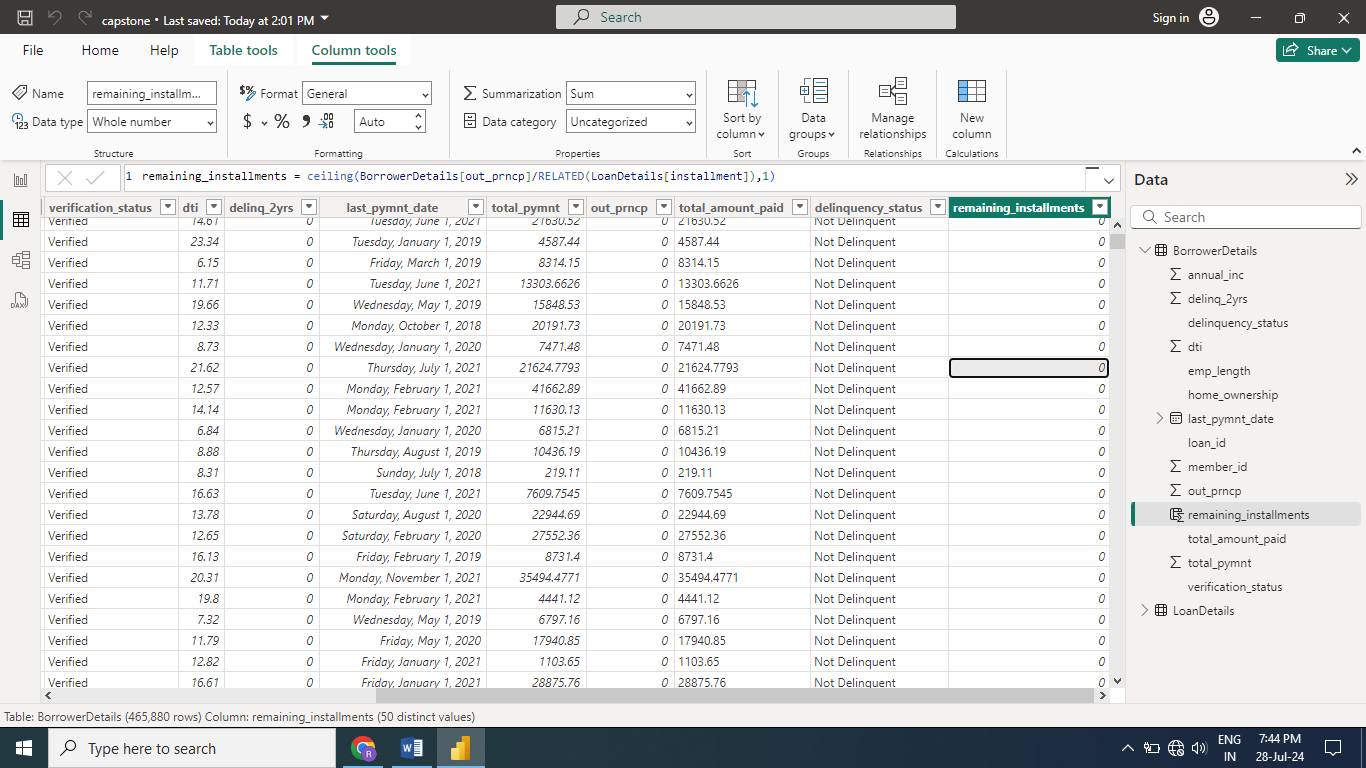
**2) Data Modeling**

➢ Identify the common column between both the tables and establish relationships between the two tables. Ensure the cross-filter direction is set to "Both". This step is crucial for enabling cross-table analysis and ensuring data integrity within the dataset.

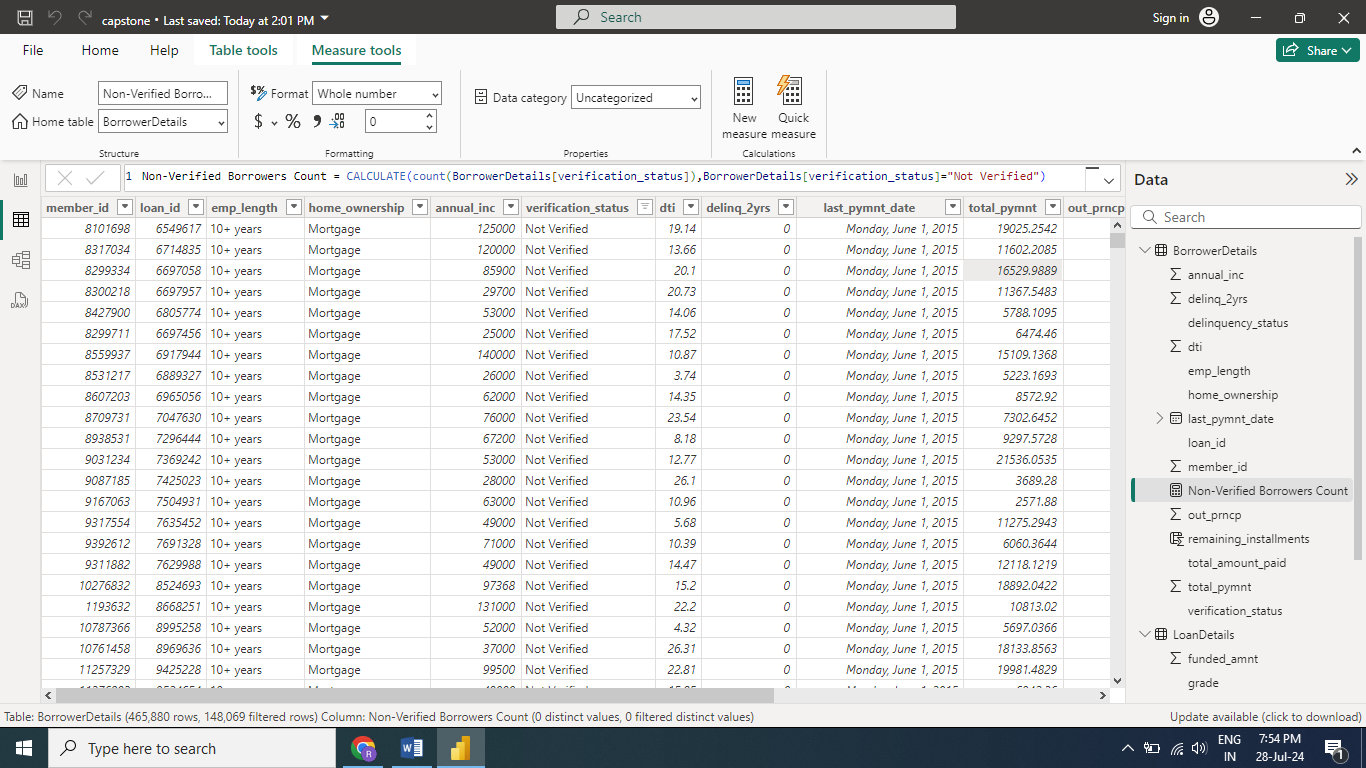


**4) Creating Measures and Calculated Columns using DAX**

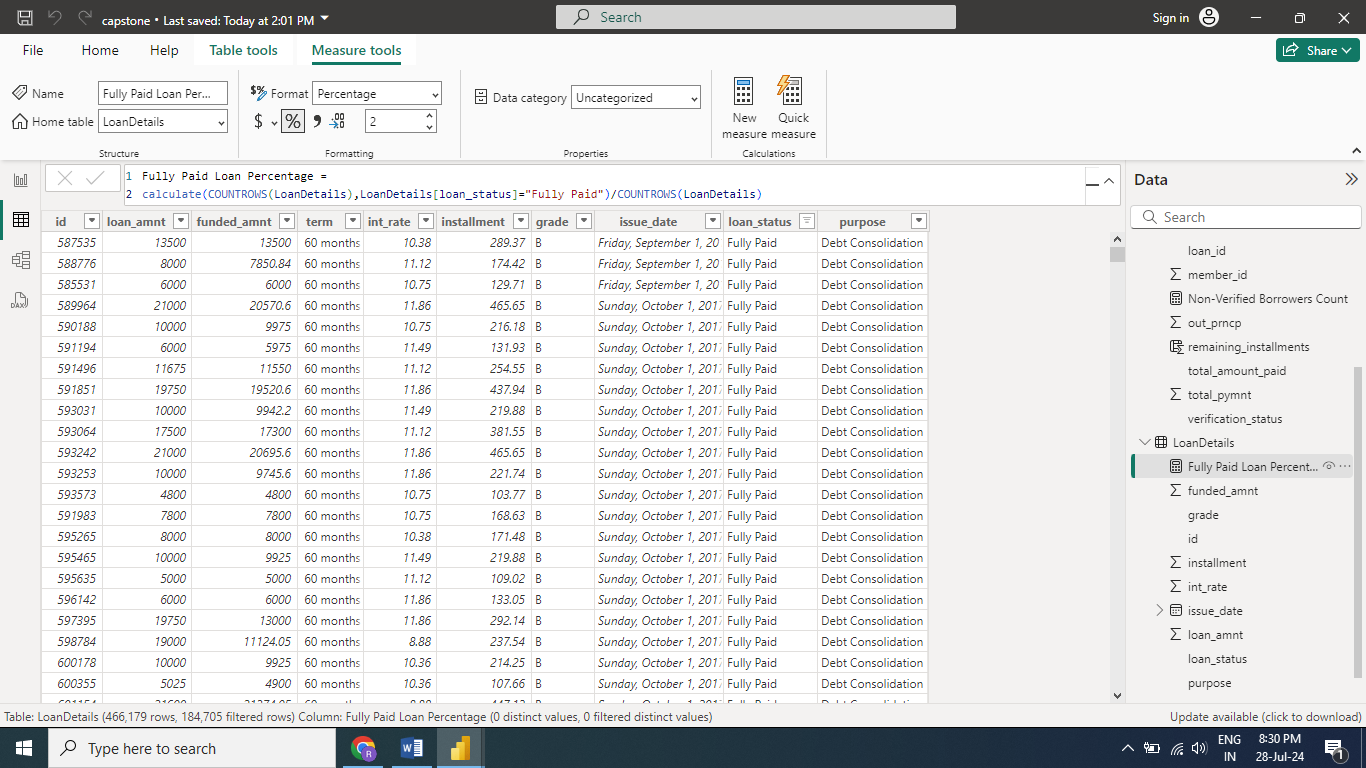
➢ Create a new calculated column named 'remaining\_installments' using DAX in the "BorrowerDetails" table to calculate the number of remaining installments by dividing the remaining principal amount ('out\_prncp') by the monthly installment amount ('installment') and round up the result using the CEILING() function to account for any partial payments.



➢ Create a measure named 'Non-Verified Borrowers Count' using DAX to count the number of loans that have been 'Not Verified'.

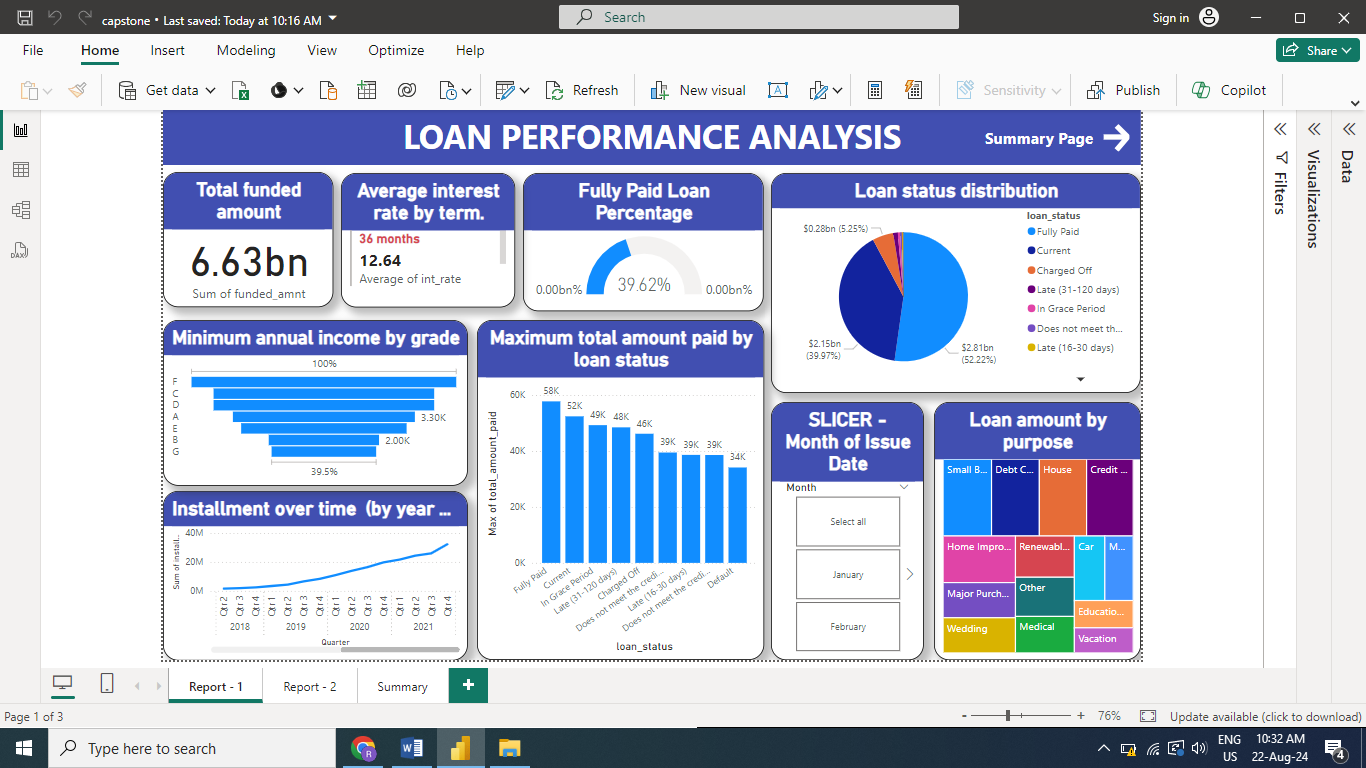


➢ Create a measure named 'Fully Paid Loan Percentage' to calculate the percentage of fully paid loans. Divide the number of loans with a "Fully Paid" loan status by the total number of loans and then format this measure as Percentage. **(it is formatted as percentage manually from the ribbon tools above)**

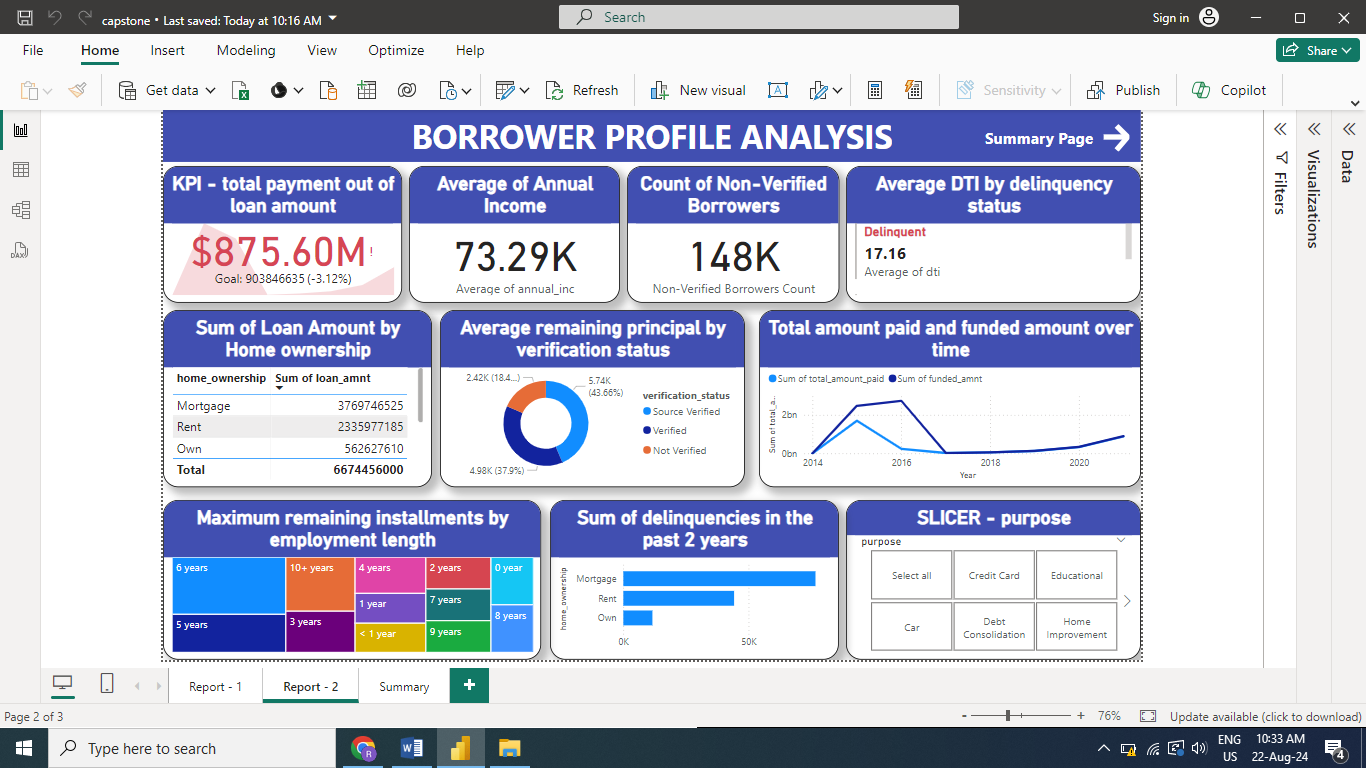


**5) Creating Comprehensive Reports**

**Report 1: Loan Performance Analysis**



**Report 2: Borrower Profile Analysis**



**Summary Page:**

