

## Data Preprocessing-

- Checked every column of dataset for null values and duplicate values.
- In columns like first time home buyer, PPM ,Number of Borrowers X values are present which are not available values. Replaced that values with the respective mode value of column.
- First payment date and maturity date columns shows date in number format. Converted number to date using formula [DATE(INT(C2/100),MOD(C2,100),1) ].
- Calculated credit range column using formula [IFS(A2<=650, "Poor", A2<=700, "Fair", A2<=750, "Good", A2<=900, "Excellent")].
- Calculated Delinquency Rate = `DIVIDE (CALCULATE (COUNTROWS('finalpr dataset'),'finalpr dataset'[EverDelinquent] = 1 ), COUNTROWS('finalpr dataset'),0)`

## Dashboard 2 -

- Imported data from Excel in power BI using get data option.Then check the data before loading and click on load option.
- First changed canvas background with color selected from dropdown.

### KPI's-

- Then drag KPI card in canvas and Created KPIs like Average months delinquent, Percentage of loans ever delinquent.

1. **Average months delinquent**=Taken average of Monthsdelinquent field.
2. **Percentage of loans ever delinquent**.=

`DIVIDE(CALCULATE(COUNTROWS('finalpr dataset'),FILTER('finalpr dataset',  
'finalpr dataset'[EverDelinquent] > 0)),`

`COUNTROWS('finalpr dataset') )`

3. **Delinquent\_Status** =

`Delinquent_Status =`

`VAR Credit_Range = SELECTEDVALUE('finalpr dataset'[Credit Range])`

`VAR Delinquent_Percentage = [Percentage of Loans Ever Delinquent]`

```

RETURN
SWITCH(
    TRUE(),
    AND(Credit_Range = "Poor", Delinquent_Percentage > 0.4), "YES",
    AND(Credit_Range = "Fair", Delinquent_Percentage > 0.2), "YES",
    AND(Credit_Range = "Good", Delinquent_Percentage > 0.1), "YES",
    AND(Credit_Range = "Excellent", Delinquent_Percentage > 0.09), "YES",
    AND(Delinquent_Percentage >= 0.19, Delinquent_Percentage <=1.00), "YES",
    "NO"
)

```

## Charts for visualization-

- Created charts like histogram, pie chart and line chart for visualization.

1. **Trend of delinquency rates over time**: For this I have created line chart by taking maturity date column on X-axis and Delinquency rate on Y-axis .

It shows delinquency rates for every year .It shows high delinquency rate for Year 2032(0.50) and low for year 2031(0.17)

2. **Percentage of loans ever delinquent by credit range**: for this I have created pie chart .

Credit range drag into legend and calculated measure Percentage of loans ever delinquent dragged into values. It shows percentage of loans ever delinquent for each credit range line poor, fair, good and excellent.

3. **Histogram showing distribution of months delinquent**: For this firstly created

monthsdelinquent bins by using new group option. Then created histogram with bins on X axis and count of loans on Y axis. Bin size is 10.

## Filters-

1. **Monthsdelinquent(bins)**-I have taken slicer and drag Monthsdelinquent(bins) field in slicer. Also chose option as between in slicer setting which shows range of bins and we can filter accordingly.
2. **First Payment Date**-Created slicer using first payment date column as a filter to visualize all graphs by dragging the range between year 1999 to 2013.