

LENDING CLUB CASE STUDY

SUBMISSION

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Data Analysis Objective

Lending Club is the largest online loan marketplace, facilitating personal loans, business loans and financing of medical procedures.

Borrowers can easily access lower interest rate loans through a fast online interface.

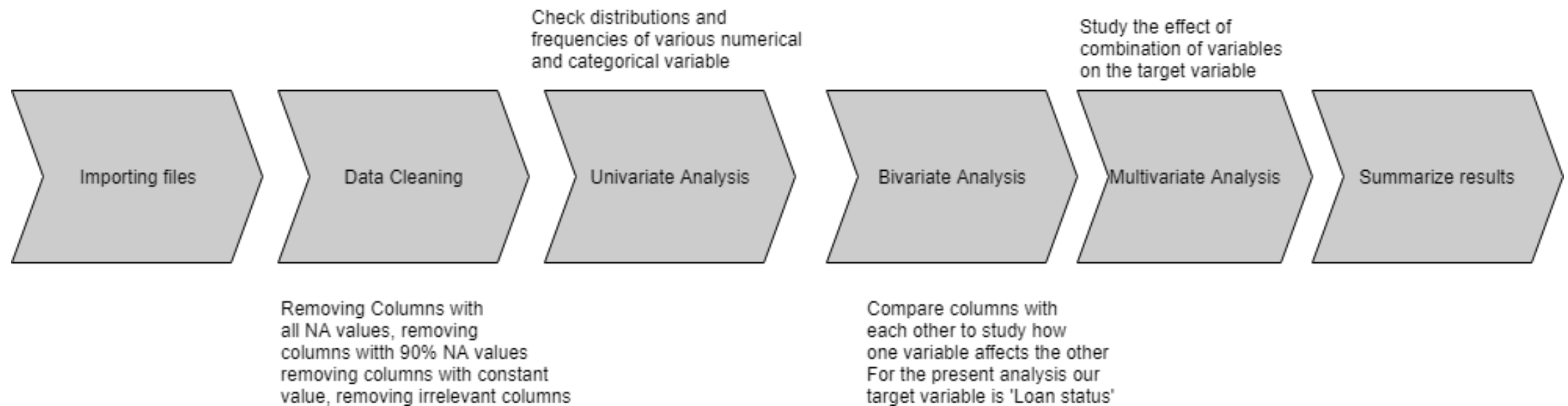
Borrowers who default cause credit loss to the lenders. Such customers are labelled as “Charged Off”

The purpose of this analysis is to help Lending Club identify :-

- **Loan attributes**
- **Consumer attributes**

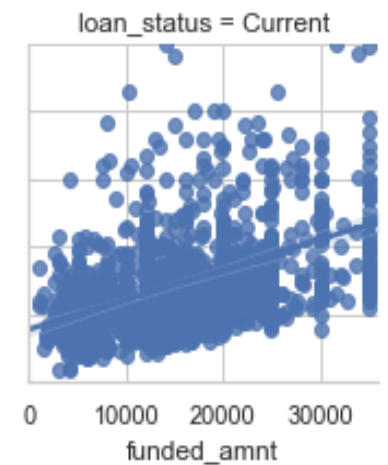
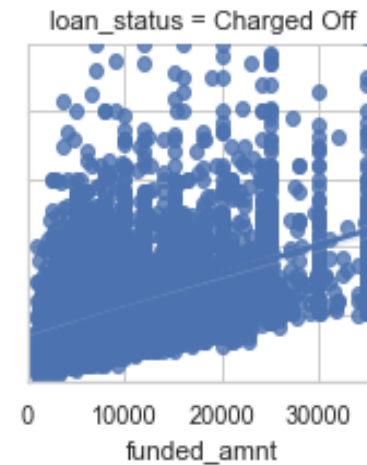
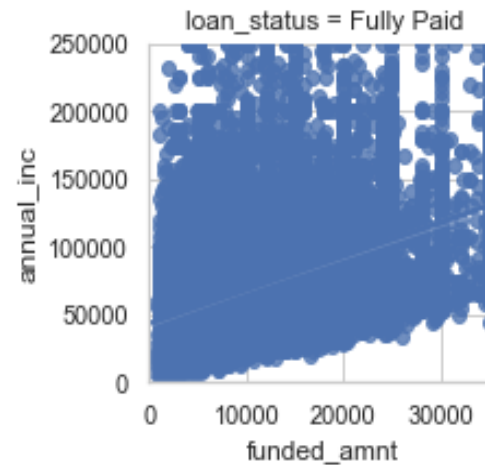
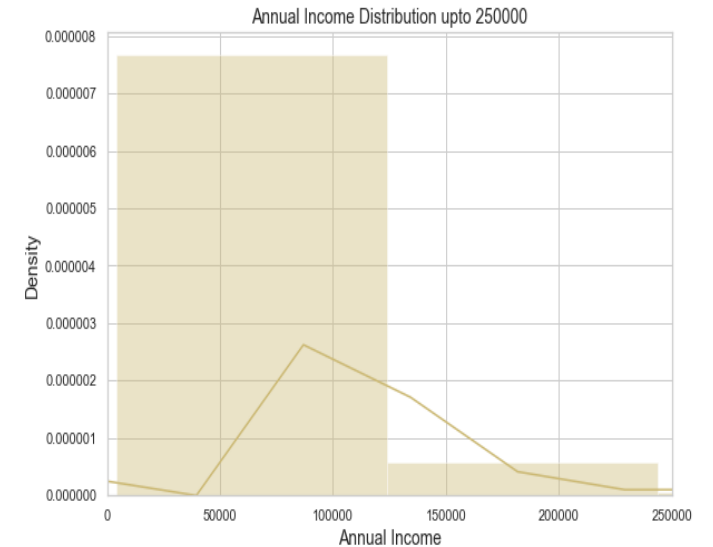
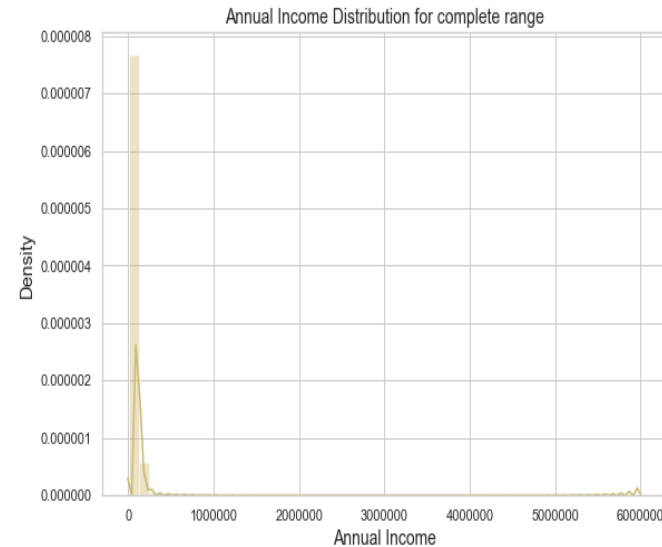
Which influence the tendency to default. This information maybe used by the company for its risk assessment

Analysis



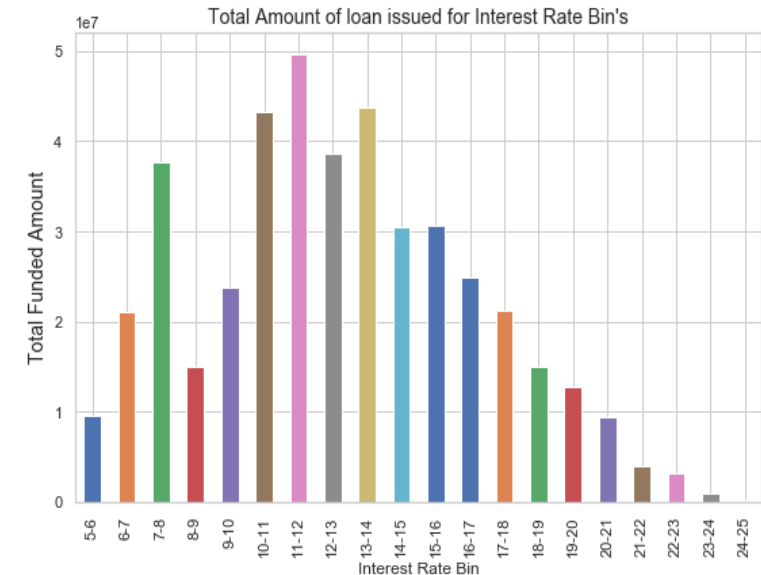
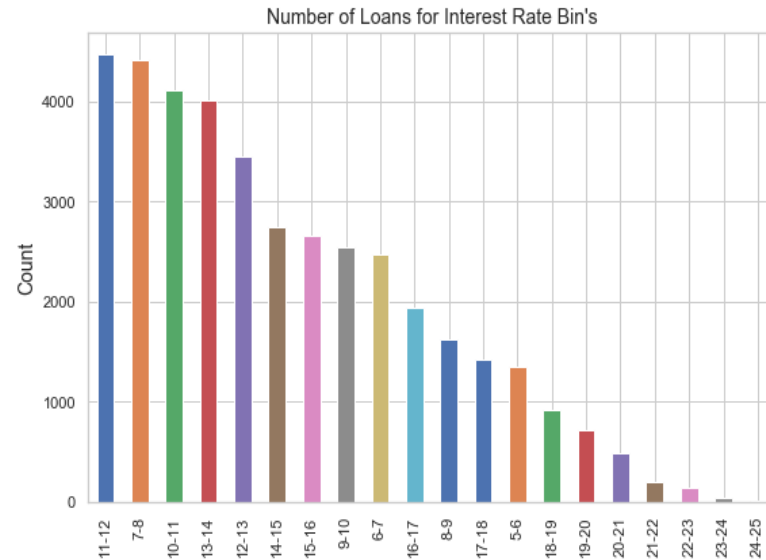
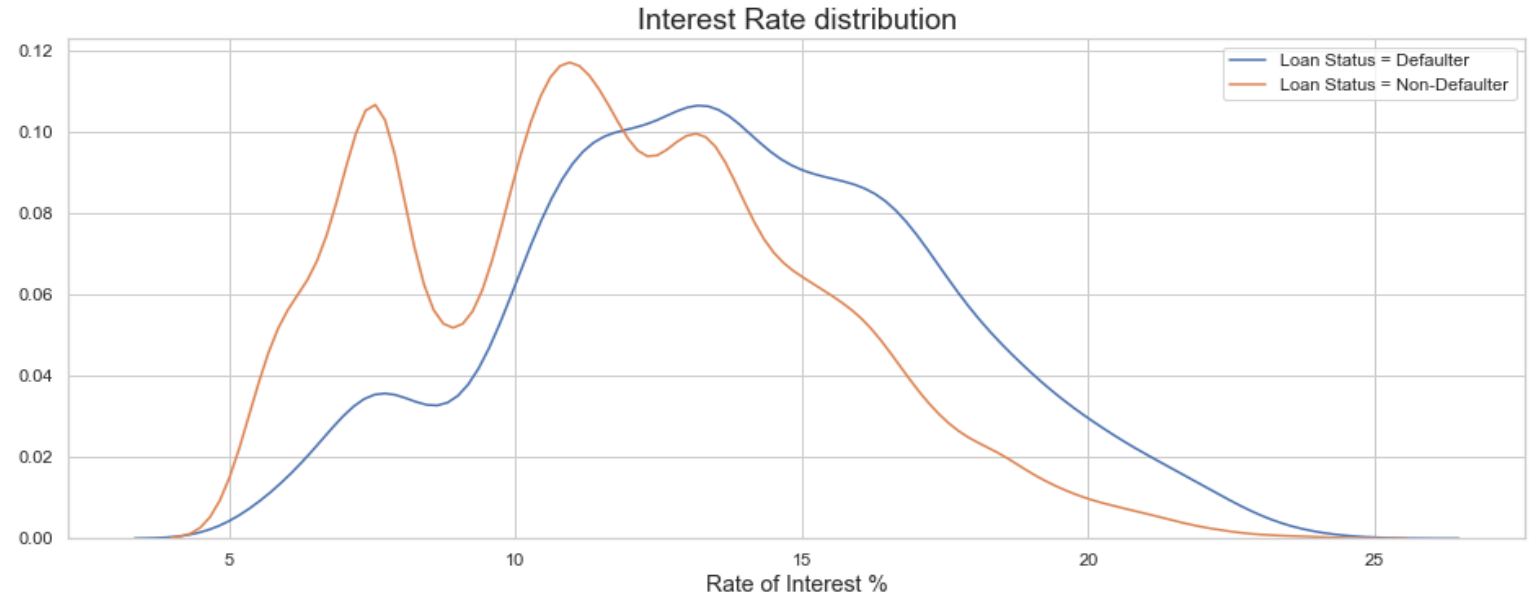
Analysis of Annual_inc

- *Out of total Annual Income, 99% of annual income is below 240000.*
- *"Charged Off %" is decreasing when "Income level" is increasing (i.e. Low to Medium to High to Outlier)*
- *As "Income Level" increases, Mean and Median "Funded Amount" also increases.*
- *Most of the "Charged Off" loan is for borrowers with Annual Income below 125000 and Funded Amount below 25000.*



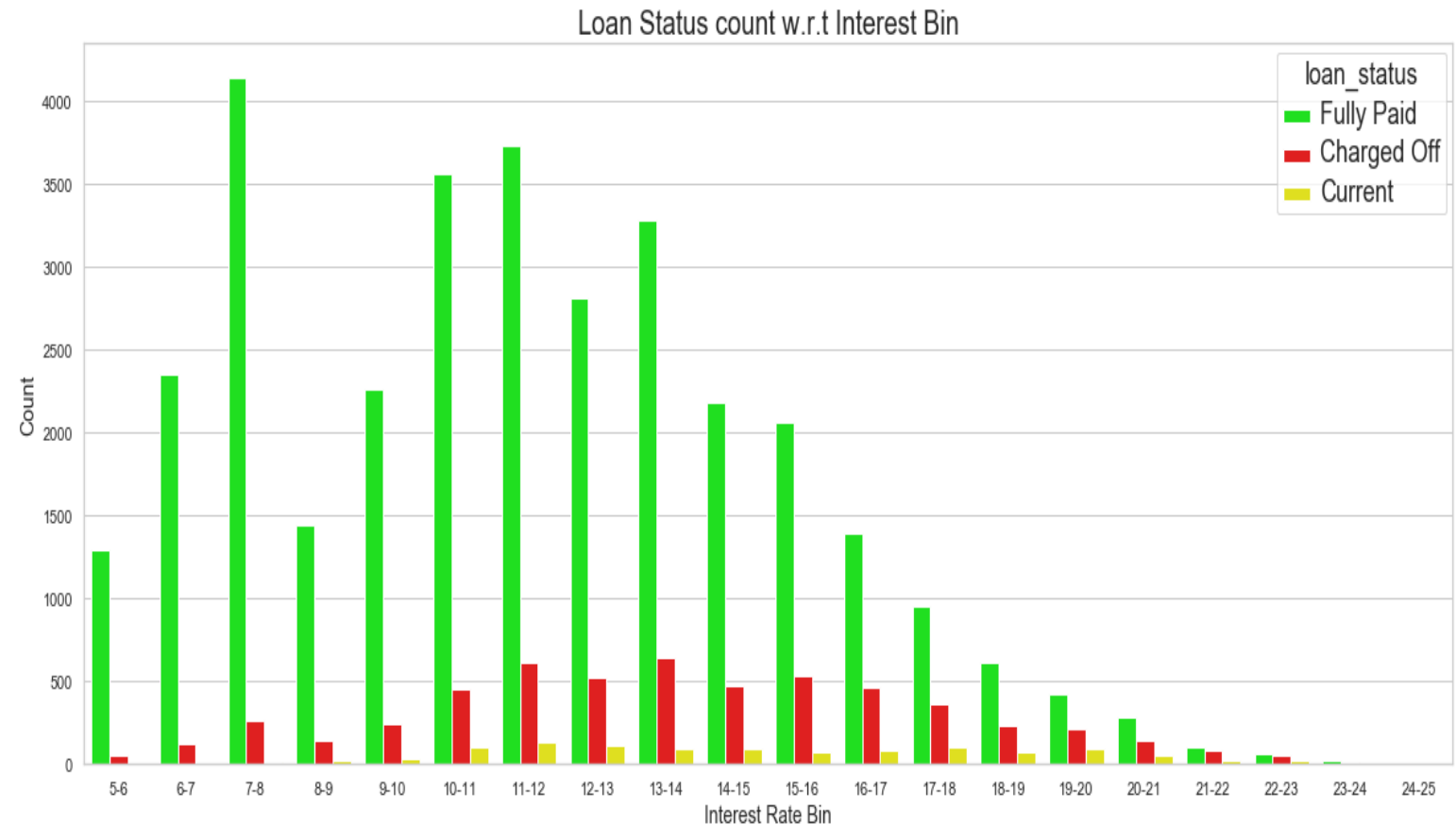
Analysis of Rate-Of-Interest (int_rate)

- *Density of Interest rates shows that, most of the Loans are given at interest rate in between 11%-14%.*
- *Maximum "Funded Amount" has been lent at interest rate in between 11%-12%, followed by 13%-14%*



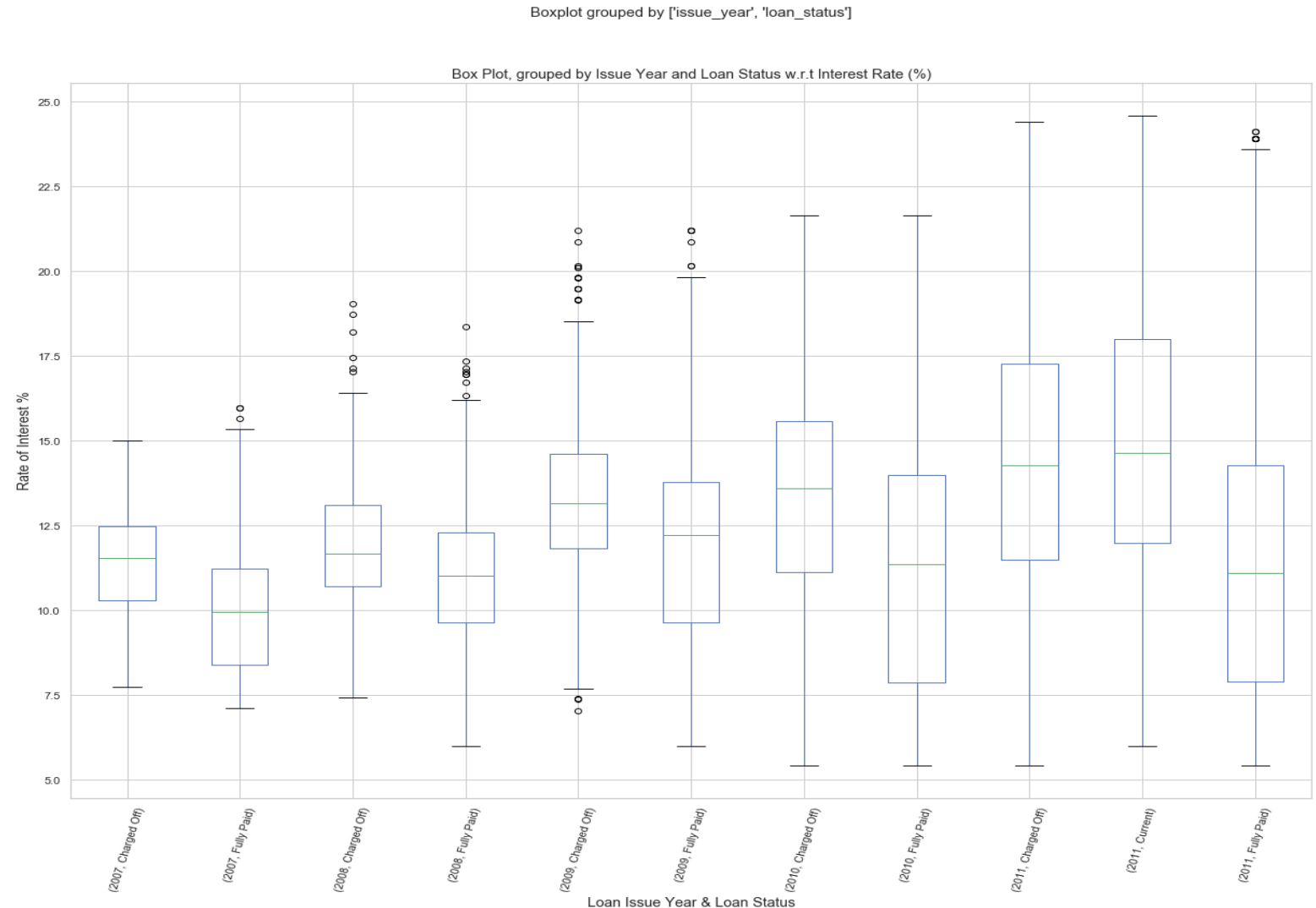
Analysis of Rate-Of-Interest (int_rate) Contd...

- *Maximum number of loans has been "Charged Off" at interest rate in between 13%-14%.*
- *Median "interest rate" for "Charged Off" is "~14%", which is greater than Median "interest rate" for "Fully Paid" loans.*



Analysis of Rate-Of-Interest (int_rate) Contd...

- Across all the years the "Charged Off" loans have a higher interest rates than the 'Fully Paid' loans.
- Current loans data is available only for year 2011, which has been given out at a considerably higher rate than the fully paid loans.

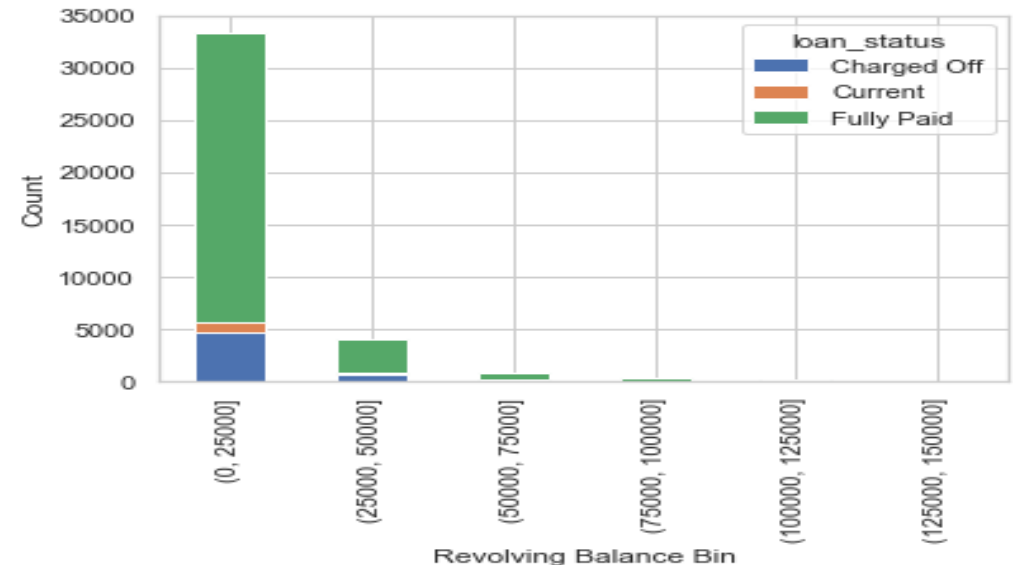
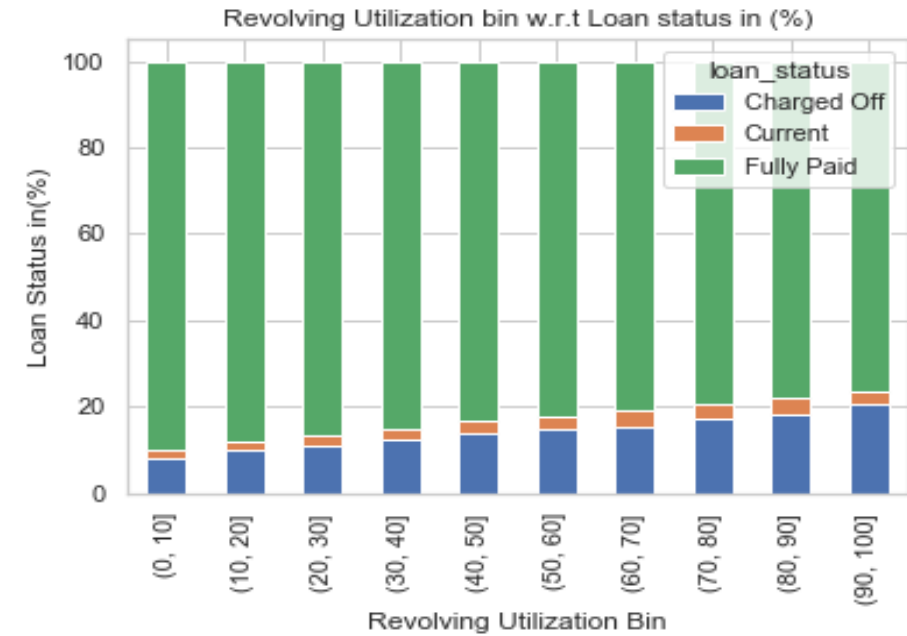


Analysis of Revolving Utilization (Revol_Util)

- The lower the utilization of Total loan, the lower chances are of defaulting*

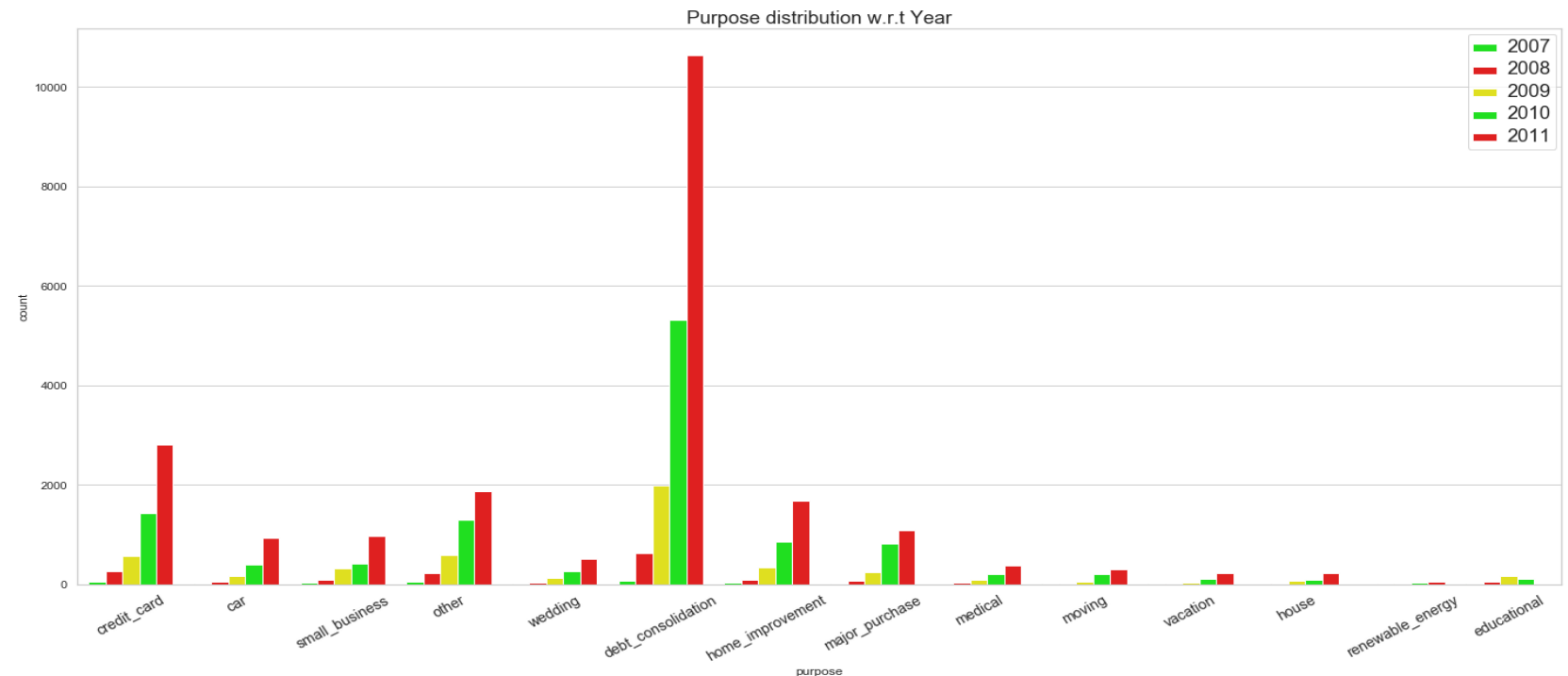
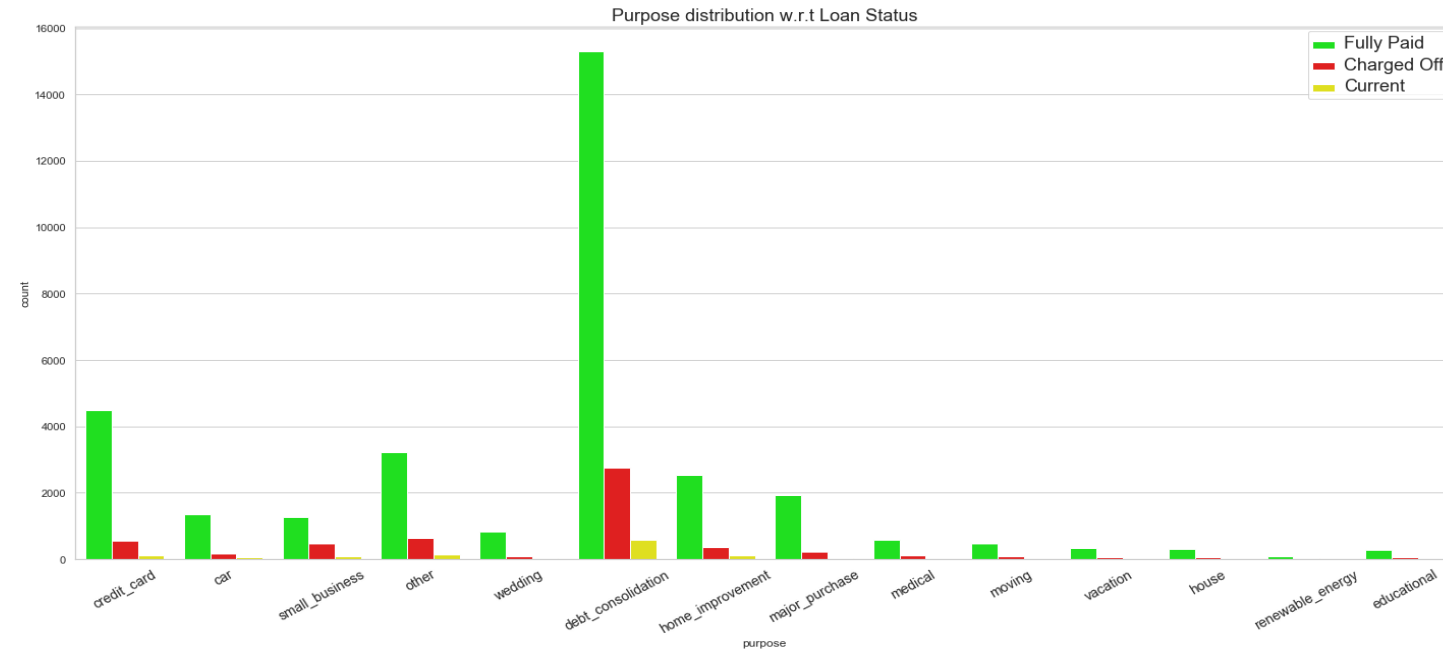
Analysis of Revolving Balance (Revol_bal)

- Most of the charged off loans are for records which has total revolving credit balance between 0 to 25000.*



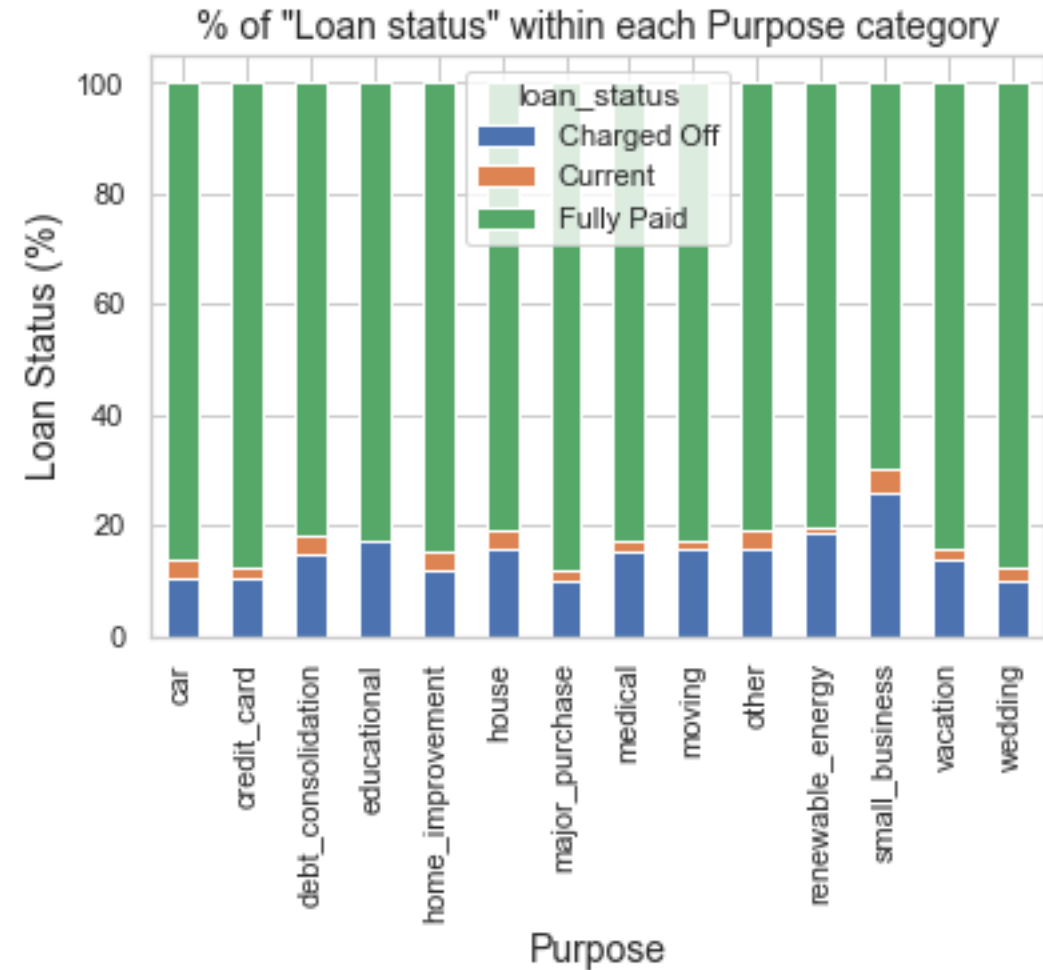
Analysis of Loan Purpose ('Purpose')

- *Debt Consolidation has maximum number of loans in all three categories (i.e. Charged Off, Current and Fully Paid)*
- *Debt Consolidation has maximum number (46.9 %) of loans in all three categories every Year.*
- *Debt Consolidation count is increasing Incrementally each year across all three Loan Status Categories.*



Analysis of Loan Purpose (‘Purpose’) Contd.....

- *Within each Purpose categories, Small business has highest percentage (~25%) of "Charged Off" loans.*



Analysis of Grades

- *Borrowers with G grade are with highest Median salary and A being Lowest.*
- *There is Gradual decrease in loan status (including Charged Off) as we move from Grade B to G.*
- *There is Gradual Increase in Number of loans in each category of Loan Status from left to right.*

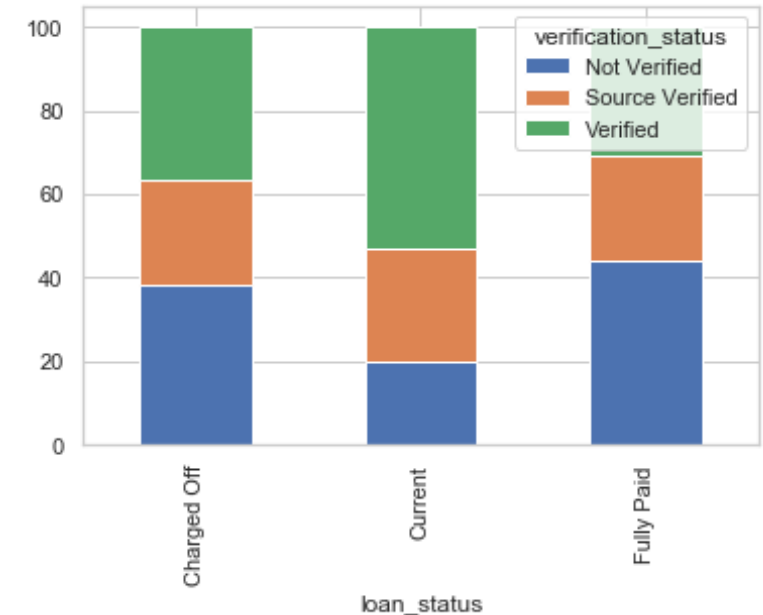
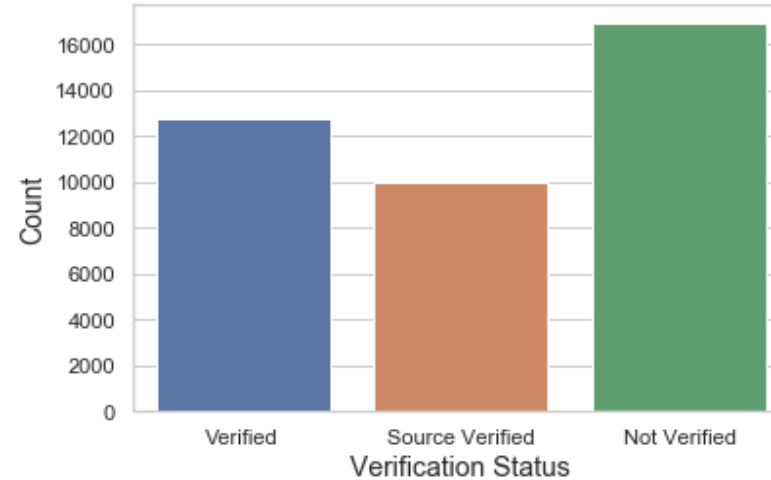
loan_status	Charged Off	Current	Fully Paid	Total
grade				
A	45748	53500	59000	57600
B	50000	63000	59002	57989.5
C	50000	63750	57000	56000
D	54000	58000	60000	59000
E	60000	68000	65856	65000
F	67000	85000	74500	72000
G	67032	86400	85000	80000
Total	53000	65000	60000	59000

loan_status	Charged Off	Current	Fully Paid
grade			
A	1.52	0.1	23.78
B	3.59	0.87	25.81
C	3.39	0.66	16.33
D	2.81	0.56	9.99
E	1.8	0.45	4.9
F	0.8	0.18	1.65
G	0.25	0.04	0.5

loan_status	Charged Off					Current	Fully Paid					
issue_year	2007	2008	2009	2010	2011	2011	2007	2008	2009	2010	2011	2011
grade												
A	0	0.04	0.2	0.33	0.94	0.1	0.14	0.7	2.77	6.72	13.45	
B	0.02	0.19	0.39	1.01	1.98	0.87	0.13	1.09	3.04	7.89	13.65	
C	0.04	0.2	0.44	0.92	1.8	0.66	0.15	0.91	2.56	5.28	7.43	
D	0.04	0.14	0.28	0.76	1.6	0.56	0.06	0.42	1.37	3.3	4.84	
E	0.01	0.03	0.13	0.47	1.16	0.45	0.02	0.16	0.47	1.53	2.73	
F	0.01	0.03	0.03	0.18	0.56	0.18	0.01	0.03	0.13	0.42	1.06	
G	0	0.01	0.02	0.06	0.17	0.04	0	0.01	0.04	0.16	0.3	

Analysis of Loan Verification Status

Percentage of defaulters is similar across all the categories for 'verification_status'.



Analyse 'Home Ownership'

- All % are approximately same when % is calculated w.r.t home ownership category except for None.*
- Overall, "Charged off" is high in Mortgage and Rent*

home_ownership	MORTGAGE	NONE	OTHER	OWN	RENT
loan_status					
Charged Off	13.18	0	18.37	14.49	15.02
Current	3.61	0	0	2.71	2.22
Fully Paid	83.21	100	81.63	82.8	82.76

Summary

The following factors are indicative of “Charged Off” Loans:-

- *Annual Income*
- *Interest Rate*
- *Revolving Utilization*
- *Revolving Balance*
- *Purpose*
- *Grades*
- *Verification Status*
- *Home Ownership*