Lending Club Data Analysis and Interest Rate Prediction

ABOUT LENDING CLUB:

Lending Club (LC) is the world's largest online marketplace connecting borrowers and investors. It is transforming the banking system to make credit more affordable and investing more rewarding. Lending Club operates at a lower cost than traditional bank lending programs and pass the savings on to borrowers in the form of lower rates and to investors in the form of solid risk-adjusted returns.

OBJECTIVE:

In this project, we are helping out client Rick, an investor who wants to invest with lending club with the motivation to have a safe invest and avoid risk.

DATA OVERVIEW:

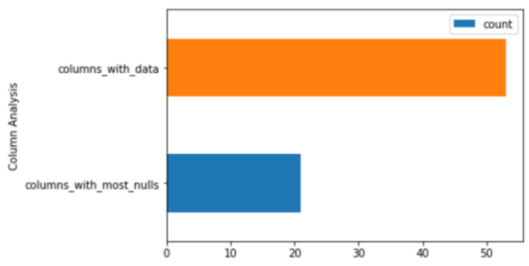
All data regarding this project can be accessed on here. The data available contains complete loan data for all loans issued through the 2007-2015, including the current loan status.

Distribution of the Data

There are a total of 74 features with 3 data types. Most of them are of the float data type.

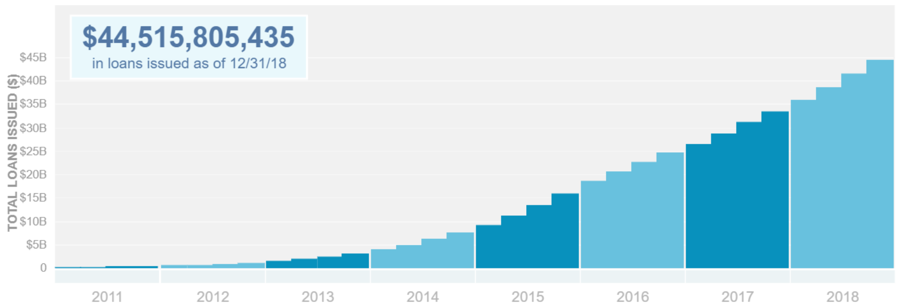
	datatype	total
0	float64	49
1	object	23
2	int64	2

Columns values



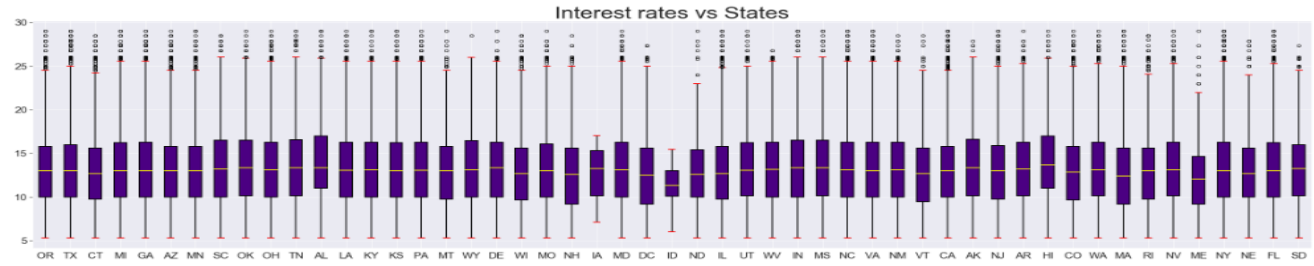
Total issuance of loan:

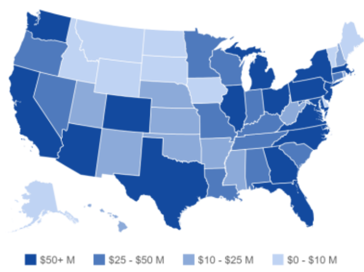
The investors has significantly increased in the previous years with 130,000 loan offered in 2011 to more 5,000,000 loans being offered by the end of 2018



Loan issuance by state

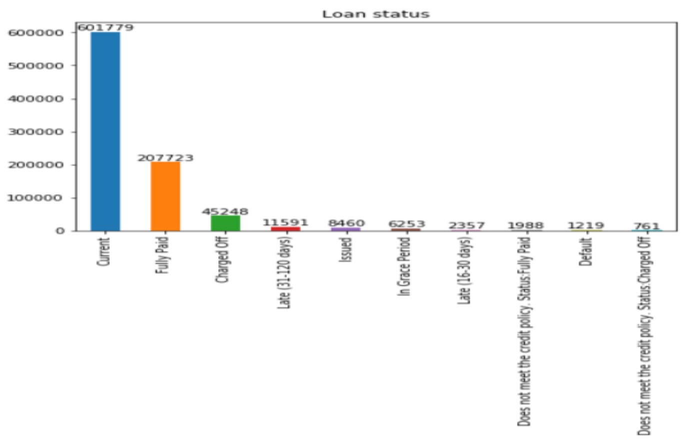
California has been one of the largest state in terms of money invested and borrowed through the lending club portal with an amount of more than 50+M $





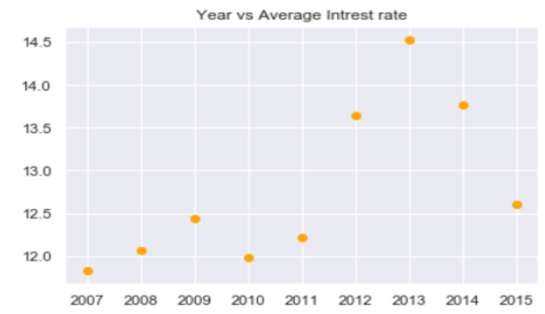
Loan Status

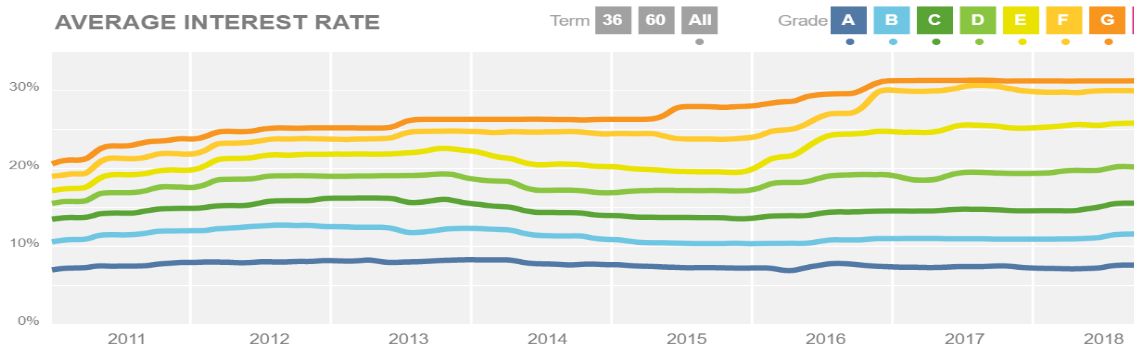
A lot of loans which are current with fair amount of fully paid loans. other categories (including) default have a really low number. Charged off' and 'Default' together meaning that anyone who fell into this category defaulted their loan.



Interest rate fluctuation

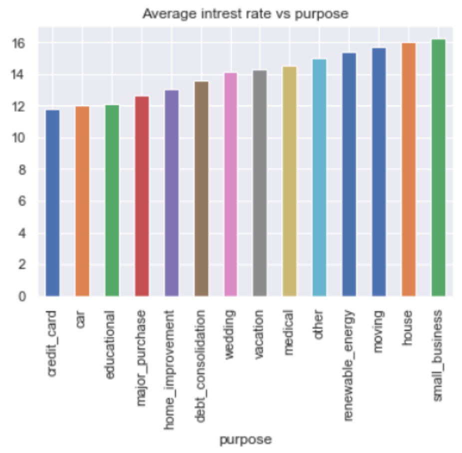
The Interest rate being dependent on the inflation and also on the borrowers profile has shown significant ups and down from 2007 to 2017. The interest rate has also been greatly dependent on the grade the borrower is assigned to. Since Grade E,F,G are risky loans, their average interest rates have significantly increased in the previous years

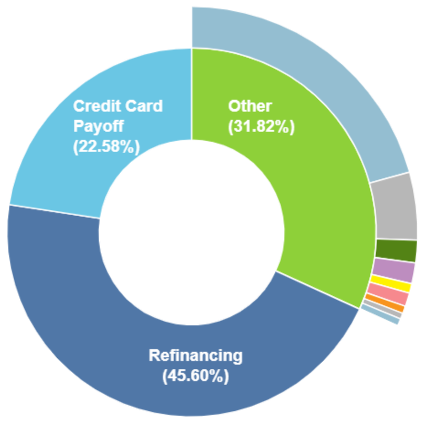




Reported loan purpose

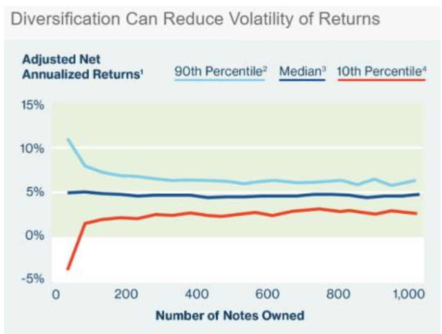
The Loan purpose describes the reported intent of borrowers. The borrowers have taken loan mostly for debt consolidation and credit card payments

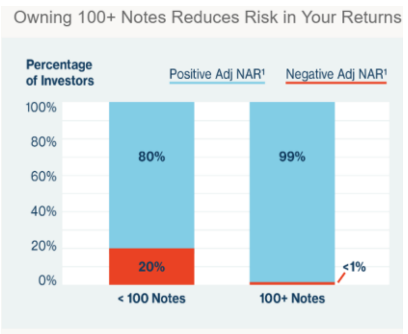




Diversification:

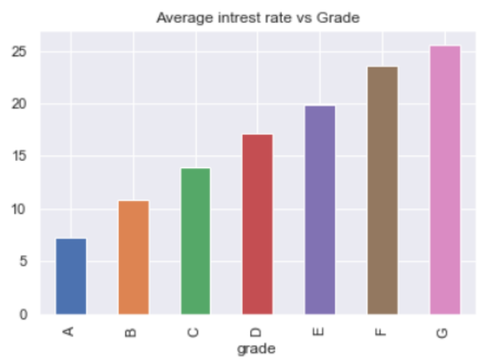
With greater diversification, or owning more Notes, can reduce the volatility of returns. Investors hold more and more Notes, each Note represents a smaller portion of the total and their returns may become more stable and consistent

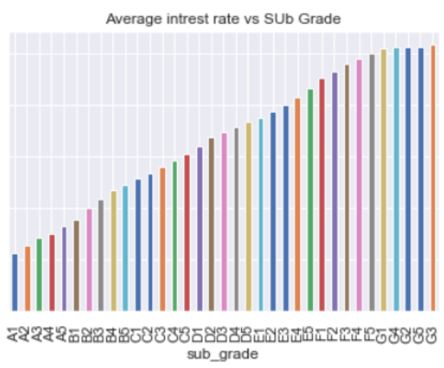


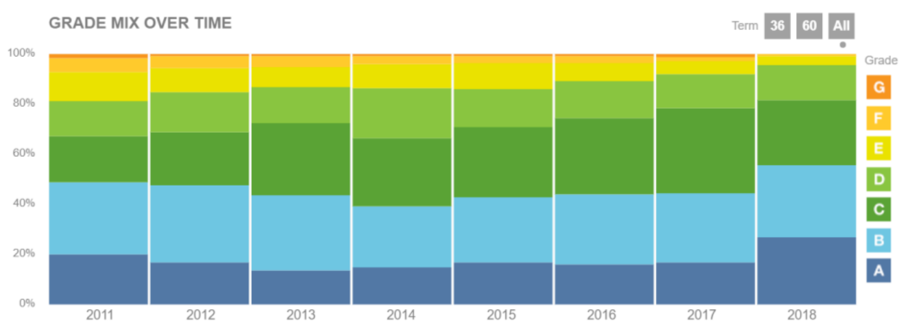


Grade Status:

The better the grading the lesser the interest rate. The grading criteria stands with giving more weightage to Grade A and Grade G being the group with the highest interest rate.







INSIGHTS THAT COULD HELP MY CLIENT TAKE LESS RISK AND GAIN PROFIT:

- Since the grade A, B, C investment are considered as safe investment. Since shown in the above graph that the borrowers in these grades have significantly increased for both 36 month and 60 month term which could be a positive sign for Rick
- Rick should not invest his money with borrowers who are taking loans for small business, moving and house. He should prefer people borrowing for credit card, car and educational loan. Rick should rely on loan grades on these loan purpose
- Rick should be optimistic that the amount of money invested in lending club has increased over the years and which could draw a meaning that people take lending club as a positive way of investment
- The interest rate from the year 2010 – 2018 has been pretty constant for Grade A, B, C and D while it has significantly increased in the previous years for Grade E, F and G. This conveys that borrowers with Grade A, B, C and D could be considered as safe investment while in the other grades its risky to invest
- Rick should diversify his investment as greater diversification with spreading your investment equally across many Notes corresponding to many different Borrowers can reduce the volatility of returns
- Rick should have an account with more than 100 Notes of only grades A through E (no F or G grade Notes) as they are likely to see positive returns