# Lending Club Loan Data Analysis

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# Overview

# Data Overview

**Overview**

- Data provided by Lending Club
- The data is a census of the Lending Club loan population between 2007 and 2011, no randomization was used in its selection

**Goal**

- The goal of this project was to summarize the loan data and look for trends among borrowers.

# Data Description

A subset of columns used in the analysis

- Loan Amount - the amount of the loan in $USD
- Grade - a Lending Club measure of lendee worthiness, used to assign interest rates
- Interest Rate - the APR interest rate for each loan
- Loan Status - the current standing of the loan, ranging from Fully Paid to Charged Off
- Home Ownership - a borrower's housing status, includes Rent, Own, and Mortgage
- Annual Income - the individual annual income of each lendee in $USD
- Delinquent 2 Years - a measure of how long a loan has been delinquent
- Debt-to-Income Ratio - a measure of how much a person owes versus their annual income

# Data Uses

Lending Club, along with venture capital firms have used this data to attempt to predict good and bad loans.

The goal is to reduce the number of defaults, providing a better return.

Some questions that could be answered with the data might be:

1. Does the income of a person help predict if they will repay a loan?
2. How does the debt-to-income ratio affect the interest rate of a loan?
3. Does the interest rate of a loan depend on a person's income?

# Analysis

# Data Summary

**Interest Rates**

Fully Paid

- Minimum: 5.42% - Maximum: 24.59%
- 1st Qu.: 8.88% - 3rd Qu.: 14.17%
- Median: 11.49% - Mean: 11.72%

Charged Off

- Minimum: 5.42% - Maximum: 24.40%
- 1st Qu.: 11.36% - 3rd Qu.: 16.40%
- Median: 13.61% - Mean: 13.84%

# Data Summary

**Annual Income - Trimmed 10%**

Fully Paid

- Minimum: $4,000 - Maximum: $147,000
- 1st Qu.: $40,000 - 3rd Qu.: $80,000
- Median: $57,600 - Mean: $62,180

Charged Off

- Minimum: $4,080 - Maximum: $130,500
- 1st Qu.: $36,220 - 3rd Qu.: $70,000
- Median: $51,250 - Mean: $55,720

# Data Summary

**Debt-to-Income Ratio**

Fully Paid

- Minimum: 0.00 - Maximum: 29.99
- 1st Qu.: 8.03 - 3rd Qu.: 18.45
- Median: 13.24 - Mean: 13.20

Charged Off

- Minimum: 0.00 - Maximum: 29.85
- 1st Qu.: 9.09- 3rd Qu.: 19.30
- Median: 14.32- Mean: 14.02

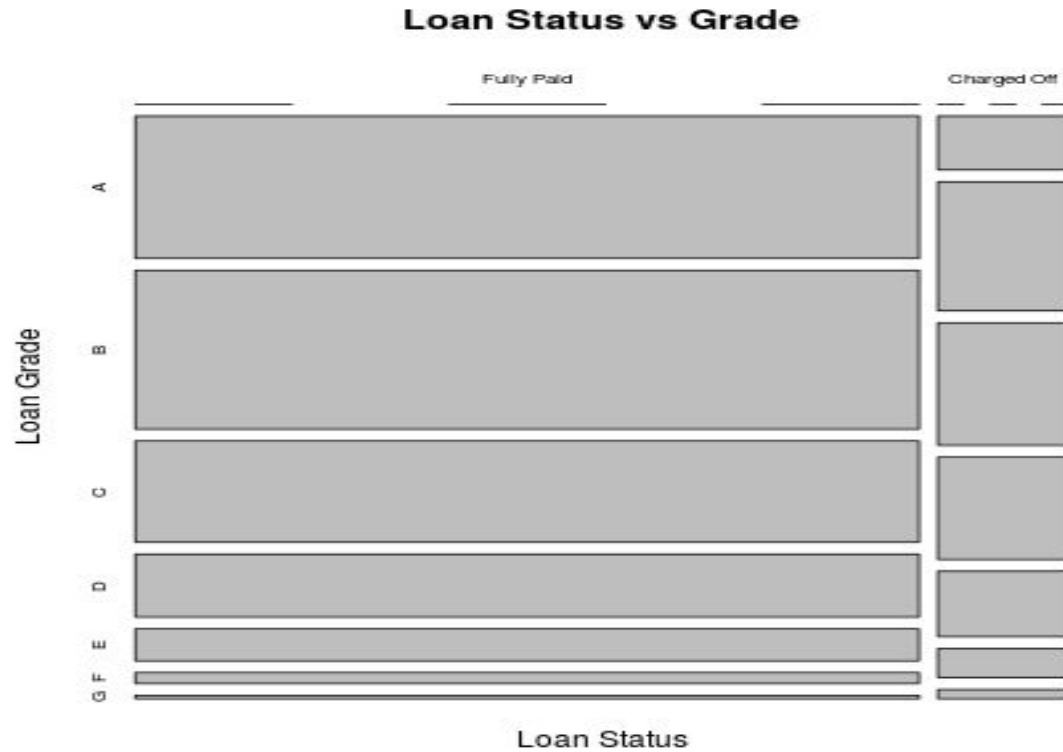# Data Summary

**Home Ownership**
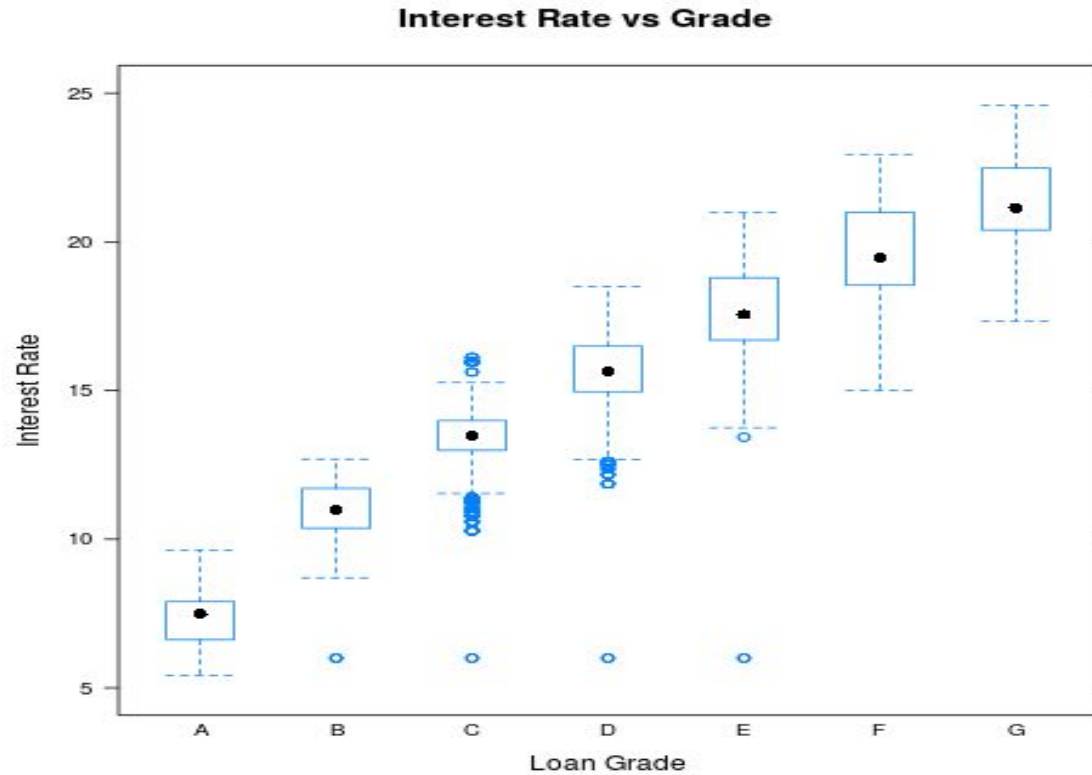
Fully Paid

- Mortgage: 44.97%
- Own: 7.7%
- Rent: 47.08%

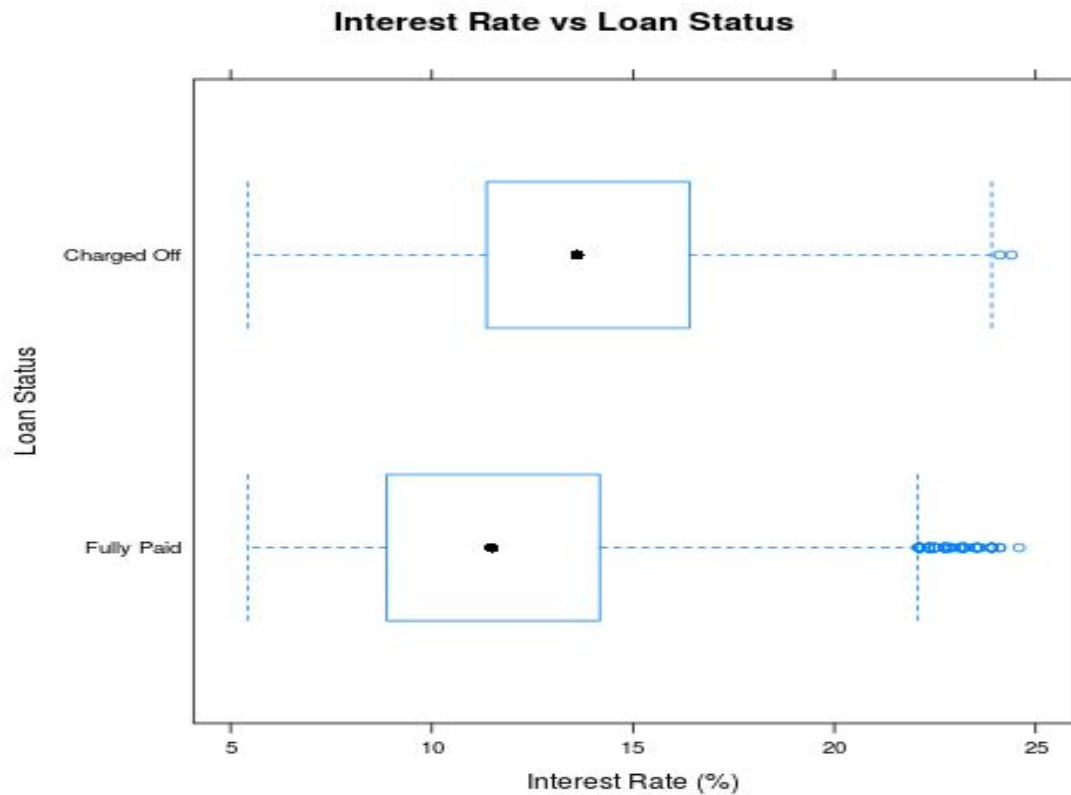Charged Off

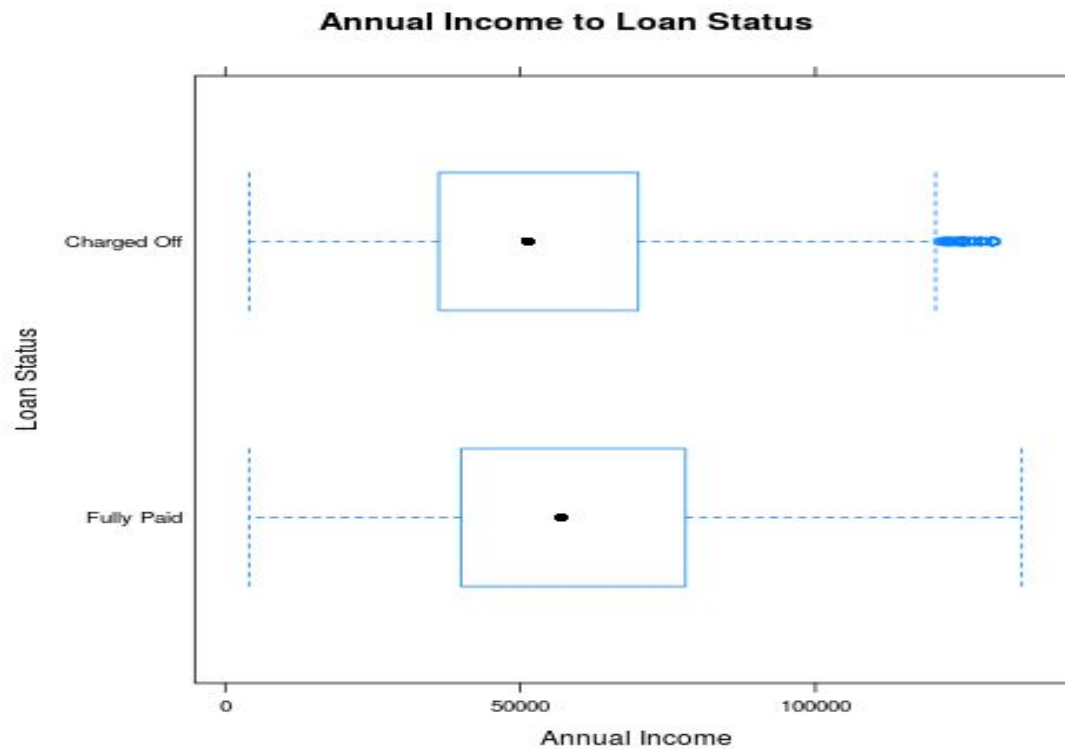- Mortgage: 41.41%
- Own: 7.84%
- Rent: 50.43%

# Visualizations



Loan Status vs Grade

# Visualizations



Interest Rate vs Grade

# Visualizations



Interest Rate vs Loan Status

# Visualizations

# Sources

https://www.lendingclub.com/info/download-data.action (Data Download)

https://www.lendingclub.com/ (Lending Club)

# Questions