

[◀ Return to Classroom](#)

# Communicate Data Findings

REVIEW

CODE REVIEW

HISTORY

## Meets Specifications

Hi Udacity Learner,  
Sang Nguyen Trong

- Congratulations on completing the project! 🎉
- You have done outstanding work on this project. It was very easy for me to navigate through your work as everything was well explained.

ADDITIONAL LINKS  TO READ IN FREE TIME


- [7 Fundamental Steps to Complete a Data Analytics Project](#)
- [A Comprehensive Guide to Data Exploration](#)

Sure you have learned a lot and we encourage you to keep up with this hard work. Have a nice day and good luck forward. 🙌

What issues did you face in the project?

How long did you take to complete this project?

Any suggestions or ideas you may have on the project?

- Don't forget to rate my work as a project reviewer! Your detailed feedback is very helpful and appreciated - thank you!.
- I'll look forward to reading from you. Thanks a lot! 

## Code Quality

All code is functional (i.e. no errors are thrown by the code). Warnings are okay, as long as they are not a result of poor coding practices.

 All the code runs without any error. Good job.

### ADDITIONAL LINKS

- If you want to learn more about python programming you can [follow this link](#)
- [15 Python tips and tricks to master Data Science and Machine Learning](#)
- [The ultimate guide to writing better Python code](#)

The project uses functions and loops where possible to reduce repetitive code. Comments and docstrings are used as needed to document code functionality.

- Great job doing the data-wrangling tasks before the actual exploration.
- Comments and docstrings are used to document the code functionality.
- Functions are used to avoid code repetition.

```
import seaborn as sb
import matplotlib.pyplot as plt

def plot_listing_categories(data):
    # Set the plot size
    plt.figure(figsize=(7, 7))
    # Plot the count of listing categories
    sb.countplot(y='ListingCategory (numeric)', data=data, color=sb.color_palette()[9])
    # Set the y-axis label
    plt.ylabel('Listing Category')
    # Display the plot
    plt.show()

# Call the function with your DataFrame
plot_listing_categories(df_prosper_loan_substitute)
```

### ADDITIONAL LINKS WHICH YOU CAN READ IN YOUR FREE TIME.

- [Ten Good Coding Practices for Data Scientists](#)
- [Six steps to more professional data science code](#)
- [Good coding practices - Describing your code](#)

# Exploratory Data Analysis

The project (Parts I alone) contains at least 15 visualizations distributed over univariate, bivariate, and multivariate plots to explore many relationships in the data set. Reasoning is used to justify the flow of the exploration.

- Great job defining three different sections in your exploration report for univariate, bivariate, and multivariate plots. The flow of your exploration was very smooth as you started from univariate and gradually moved on to bivariate and multivariate plots. Also, proper reasoning was used to justify the flow of the exploration.
- Also, as per the rubrics requirement, there were more than 15 visualizations distributed among the three sections.

## ADDITIONAL LINKS

[The Python Graph Gallery](#)  
[How to use Python Seaborn for Exploratory Data Analysis](#)  
[Univariate, Bivariate, and Multivariate](#)

Questions and observations are placed regularly throughout the report, after each plot or set of related plots.

**Tip:** Use the ""Question-Visualization-Observations"" framework throughout the exploration.

**Tip:** For the Part I notebook, use *File > Download as... > HTML or PDF* menu option to generate the HTML/PDF.

- great job placing the question in between your exploration. it really helps in going through the flow of the exploration. I was able to follow along, and understand what was going on in your head while you were trying to answer those questions!
- You have added observation after the plots which really helped.

**Good job framing questions at the end of each section and answering them based on findings**

Discuss the distribution(s) of your variable(s) of interest. Were there any unusual points? Did you need to perform any transformations?

There were no out of the ordinary occurrences noted, and the variable of interest is a categorical variable. Only the values of the interest variable that are pertinent to the goals of this investigation were chosen as the only transformation.

Of the features you investigated, were there any unusual distributions? Did you perform any operations on the data to tidy, adjust, or change the form of the data? If so, why did you do this?

During the data cleaning process, a few outlier points were identified in the lower and upper limits of the credit score range, recommendations, and investment from friends count columns. However, these values were left in the dataset because they did not have any negative effects on the quality of the data and were simply a few exceptions to the rule.

The values for the listing category were also transformed into strings based on information taken from the dataset description. Finally, because the distribution of the credit score ranges upper and lower was comparable, they were combined into a single column called CreditScoreAverage by averaging the values from the two columns.

## Additional Notes

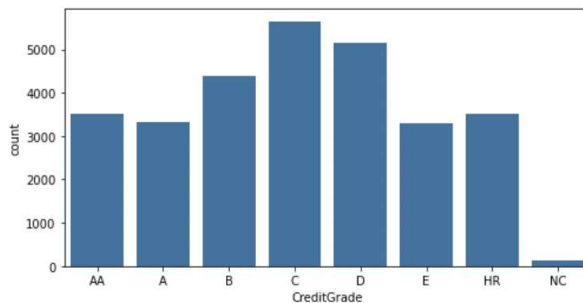
- Though you did this in some way, I wanted to explicitly talk about the **Question-Visualization-Observations framework**
- This framework involves asking a question from the data, creating a visualization to find answers and, then recording your observations.
- If you do this for each visualization, you'll be successfully narrating your exploration.

### Example

#### Question

**What is the CreditGrade of the people taking loan?**

```
l: barplot('CreditGrade')
```



#### Observation

Once again, the majority of the borrowers are in the middle of the grading; Grade C and D.

### HOW TO ASK BETTER QUESTIONS IN THE EXPLORATION PROCESS?

Explore your data - Before performing any analysis on your data, it is important to explore the available data carefully

Determine the type of problems to be addressed using the data - the problem to be solved could fall under one of the following categories: descriptive analytics, predictive analytics, or prescriptive analytics.

"Visualizations made in the project depict the data in an appropriate manner that allows plots to be readily interpreted. This includes choice of appropriate plot type, data encodings, transformations, and formatting (title, axis-labels) as needed.

**Tip: Do not overplot or incorrectly plot ordinal data."**

- You have included a nice selection of univariate, bivariate, and multivariate plots.
- Your aesthetic and labeling choices have made the plots readily interpretable.

#### ADDITIONAL LINK

- [Fundamentals of Data Visualization](#)
- [How to avoid overplotting with python](#)

## Explanatory Data Analysis

The README.md must include a summary of main findings that reflects on the steps taken during the data exploration. It should also describes the key insights that are conveyed by the explanatory presentation.

Tip: The README.md summary is based on the exploration report (Part I notebook) and will guide your explanatory slide deck (Part II notebook) .

- Great job summarizing your project in the readme file.
- You have included a summary of the main findings and key insights.

#### ADDITIONAL LINKS

- [You can go through this link](#) to know the answers to the questions.

Why is a README File necessary?

What is a README File?

How to write a good README File?

How to make your README file more interesting?

- A slideshow (HTML file) is provided, with at least 3 visualizations, to convey key insights. Only selective plots are added to the slideshow from the exploratory analysis.
- The total number of visualizations in the slideshow is less than 50% of the number of visualizations in the exploratory analysis. For example, if the exploratory analysis (Part I) has 18 visualizations, the slideshow can have (3 - 8) visualizations.
- The key insights in the slideshow match those documented in the README.md summary.
- Each visualization in the slideshow is associated with comments that accurately depict their purpose and observation.

Tip: For Part II notebook, use the `jupyter nbconvert` command to generate the HTML slide show.

✔ Great job, submitting the slideshow. The format of your slideshow is correct and it meets all the rubrics requirements.

A slideshow is provided. ✔

At least three visualizations are used in the presentation to convey key insights. ✔

Each visualization is associated with comments that accurately depict their purpose. ✔

All plots in the slideshow are appropriate, meaning the plot type, encodings, and transformations are suitable to the underlying data.

All plots in the slideshow are polished, meaning all plots have a title with labeled axes and legends. Labels include units as needed. In other words, each plot must have - chart title, x/y axis label (with units), x/y ticks, and legend.

✔ All the plots in the presentation are well polished that is they have an appropriate title with labeled axes and legends.

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WHY PLOTS SHOULD BE WELL POLISHED?

- A data visualization's purpose is to convey information and make a point. To reliably achieve this goal when preparing visualizations, we have to place the data into context and provide accompanying titles, captions, and other annotations.

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