



[◀ Return to "Data Analyst Nanodegree" in the classroom](#)

Investigate a Dataset

REVIEW

HISTORY

Meets Specifications

Awesome Job!

Congratulations on passing this project!! The effort and time you spent on this project clearly shows. The script is neatly written and runs with great computational efficiency. You demonstrated your ability to collect the data from a CSV file, clean the data, raise interesting questions and answer them in a clear manner, visualizing your results, and coming up with accurate conclusions. You also showed that you can work your way using `pandas' DataFrames` as well as plotting and visualizing your results with `matplotlib`. What really stands out is the readability of your code, everything from code flow, comments all the way variable naming (this is such an important trait to have as a programmer). It was a pleasure to read through it. Really awesome work!

Before you move on to your next lessons, take pride in the effort you've put into this project. I hope you found this exercise both challenging and rewarding.

Keep up the good work and I look forward to your next submission!

Code Functionality

All code is functional and produces no errors when run. The code given is sufficient to reproduce the results described.

The project uses NumPy arrays and Pandas Series and DataFrames where appropriate rather than Python

lists and dictionaries. Where possible, vectorized operations and built-in functions are used instead of loops.

The code makes use of functions to avoid repetitive code. The code contains good comments and variable names, making it easy to read.

Well done defining the functions `ail(a,c)`, `sms(r,c)` to avoid repetitive code.

Quality of Analysis

The project clearly states one or more questions, then addresses those questions in the rest of the analysis.

Data Wrangling Phase

The project documents any changes that were made to clean the data, such as merging multiple files, handling missing values, etc.

Exploration Phase

The project investigates the stated question(s) from multiple angles. At least three variables are investigated using both single-variable (1d) and multiple-variable (2d) explorations.

The questions were thoroughly investigated from various angles, and both 1d and 2d explorations were used for several variables investigated. Here is a simple example of the difference between single and multiple-variables explorations.

| Univariate Data | Bivariate Data |
|---|---|
| <ul style="list-style-type: none"> involving a single variable | <ul style="list-style-type: none"> involving two variables |
| <ul style="list-style-type: none"> does not deal with causes or relationships | <ul style="list-style-type: none"> deals with causes or relationships |
| <ul style="list-style-type: none"> the major purpose of univariate analysis is to describe | <ul style="list-style-type: none"> the major purpose of bivariate analysis is to explain |
| <ul style="list-style-type: none"> central tendency - mean, mode, median dispersion - range, variance, max, min, quartiles, standard deviation. frequency distributions bar graph, histogram, pie chart, line graph, box-and-whisker plot | <ul style="list-style-type: none"> analysis of two variables simultaneously correlations comparisons, relationships, causes, explanations tables where one variable is contingent on the values of the other variable. independent and dependent variables |
| Sample question: How many of the students in the freshman class are female? | Sample question: Is there a relationship between the number of females in Computer Programming and their scores in Mathematics? |

The project's visualizations are varied and show multiple comparisons and trends. Relevant statistics are computed throughout the analysis when an inference is made about the data.

At least two kinds of plots should be created as part of the explorations.

Conclusions Phase

The results of the analysis are presented such that any limitations are clear. The analysis does not state or imply that one change causes another based solely on a correlation.

Good work presenting the results of the analysis while showing its limitations clearly.

Communication

Reasoning is provided for each analysis decision, plot, and statistical summary.

Visualizations made in the project depict the data in an appropriate manner that allows plots to be readily interpreted.

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