**Introduction**

For the final project, you will create an **explanatory** data visualization from a data set that communicates a clear finding or that highlights relationships or patterns in a data set. Your work should be a reflection of the theory and practice of data visualization, and your final deliverable will be a write up along with a Tableau Public workbook.

We will provide some options of data sets to explore; however, you may choose to explore an entirely different data set. You should be aware that finding your own data set and cleaning it using Python, R, or some other language can take considerable time and effort. This can add as much as a day, a week, or even months to your project so embark on the adventure to find and clean a data set if you are truly prepared with data wrangling skills.

You have three options for this project. You should pick an option based on your prior experience with data munging and exploratory data analysis. The option you choose will not affect the evaluation of the project.

* **Option 1:** Select one of the beginner data sets, which already has a summary of findings, from the [**Data Set Options**](https://docs.google.com/document/d/1w7KhqotVi5eoKE3I_AZHbsxdr-NmcWsLTIiZrpxWx4w/pub?embedded=true)document. Then, create a visualization that communicates the findings.
* **Option 2:** Select one of the intermediate data sets from the [**Data Set Options**](https://docs.google.com/document/d/1w7KhqotVi5eoKE3I_AZHbsxdr-NmcWsLTIiZrpxWx4w/pub?embedded=true) document. You will investigate the data set to share a story or message about the data and then create a suitable visualization.
* **Option 3:** Find a data set, investigate it, and share your findings in a visualization. Your final graphic should primarily be explanatory, but it may also contain exploratory components. You can find a list of recommended websites to find data sets in the [**Data Set Options**](https://docs.google.com/document/d/1w7KhqotVi5eoKE3I_AZHbsxdr-NmcWsLTIiZrpxWx4w/pub?embedded=true) document. You should be aware that finding your own data set, cleaning the data set, and analyzing it (using R, iPython Notebook, or another tool) can take considerable time and effort. This can lengthen the time you spend on your project by days, weeks, or even months. Choose the option only if you feel prepared for a challenge!

Now, on to the details!

**Step One - Choose a Data Set**

First, you will choose a data set from the [**Data Set Options**](https://docs.google.com/document/d/1w7KhqotVi5eoKE3I_AZHbsxdr-NmcWsLTIiZrpxWx4w/pub?embedded=true) document or find a data set to explore and visualize. You should choose a data set based on your prior experiences in programming and working with data. The data set you choose will not increase or decrease your chances of passing this project.

**Step Two - Get Organized**

Eventually you’ll want to submit your project and share it. To do so, you need to create a zip folder that includes the following:

* **Write-up:** PDF or Markdown file that includes links to your Tableau Public workbooks, published online, and a write-up with four sections. See [**HERE**](https://onlinehelp.tableau.com/current/pro/desktop/en-us/publish_workbooks_tableaupublic.html) if you need help publishing your Tableau Public Workbook.
  + **Summary:** in no more than 4 sentences, briefly introduce your data visualization and add any context that can help readers understand it
  + **Design:** explain any design choices you made including changes to the visualization after collecting feedback
  + **Feedback:** include all feedback you received from others on your visualization from the first sketch to the final visualization
  + **Resources:** list any sources you consulted to create your visualization
* **Data Files**
  + the final data set used to create the visualization (usually .csv, .tsv, or .json file)
  + a codebook or other files related to the data set (description, readme, license)

**Step Three - Find a Data Story**

Explore your data set and craft a message or story around your data! Think about the overall message you want to convey and think about the comparison(s) or relationship(s) you want your readers to see. Remember that you will ultimately need to create a visualization that is explanatory, helping lead a reader to identify one or more key insights into the dataset. Feel free to use whatever visualization and data analysis tools you feel comfortable with using at this point in the process.

**Step Four - Create Your Visualization**

First, sketch ideas for your visualization. Once you settle on a sketch, explain any design choices in that sketch, such as chart type, visual encodings, and layout, in the *Design* section of the write-up. Then, create your visualization using Tableau. The visualization must include animation, interaction, or both. See the [**Project Rubric**](https://review.udacity.com/#!/rubrics/948/view) for more information.

**Step Five - Get Feedback**

Share your visualization with **at least one other person** and document their feedback. There are many ways to get feedback, and more feedback is generally better! Here are some options.

* Share your visualization with others in person and have them think aloud as they read and explore the graphic so you can document what stands out to them and how they interpret the graphic.
* Share a link to your project in the Data Analyst Nanodegree Slack and ask others to share constructive criticisms. Be sure to offer advice to others who are seeking feedback too!

You might need to ask specific questions to prompt the reader. Here are some questions to help you. You can, of course, ask others.

* What do you notice in the visualization?
* What questions do you have about the data?
* What relationships do you notice?
* What do you think is the main takeaway from this visualization?
* Is there something you don’t understand in the graphic?

**Step Six - Document Feedback and Improve the Visualization**

For each person that gives you feedback, add the person’s feedback to your write-up file in the *Feedback* section. As you improve and iterate on your visualization, update the visualization **AND** describe any changes in the *Design* section of the write-up.

You should save multiple versions of your data visualization after you make changes to it. Remember to save related files with similar numbers.

When should you save your files? You should save your files whenever you have a working version of your data visualization. If you get feedback and make changes, then create a new file and save the file as another version.

Your goal is to build evidence that you have shared your visualization, received feedback, and responded to that feedback. **You need to submit an initial version of your data visualization and the final version with the corresponding write-up.**

**Step Seven - Review**

Use the [**Project Rubric**](https://review.udacity.com/#!/rubrics/948/view) to review your project. If you are happy with your submission, then you’re ready to submit your project. If you see room for improvement, keep working to improve your project!

Project Submission

Create a data visualization that tells a story or highlights trends or patterns in a data set. Use Tableau to create the visualization. Your work should be a reflection of the theory and practice of data visualization, such as visual encodings, design principles, and effective communication.

**Evaluation**

Use the [**Project Rubric**](https://review.udacity.com/#!/projects/a2977f94-b460-4a6b-ba79-e3cecfca976b/rubric) to review your project. If you are happy with your submission, then you are ready to submit! If you see room for improvement in **any** category in which you do not meet specifications, keep working!

Your project will be evaluated by a Udacity reviewer according to the same [**Project Rubric**](https://review.udacity.com/#!/projects/a2977f94-b460-4a6b-ba79-e3cecfca976b/rubric). Your project must "Meet Specifications" in each category in order for your submission to pass.

**Reminders**

* Your visualization work should use Tableau: other visualization tools may not be evaluatable by reviewers.
* Remember that your visualization should be explanatory in nature and communicate specific results that you want to show.

**Submission**

Ready to submit your project? Click on the "Submit Project" button or go back to your Udacity Home and click on the project, then follow the instructions to submit! Make sure you include the following files and information:

* A PDF or Markdown write up that includes the following sections:
  + links to the first version of your story (e.g. story\_v1) and final version of your story (e.g. story\_final)
  + **Summary**: brief description of the visualization and the main story or findings conveyed
  + **Design**: explain any design choices you made including changes to the visualization after collecting feedback
  + **Feedback**: feedback received from others from the first sketch to the final visualization
  + **Resources**: list of Web sites, books, forums, blog posts, GitHub repositories etc that you referred to or used in this submission (Add N/A if you did not use such resources).
* The final data set file used for the graphic (usually .csv)

It can take us up to a week to grade this project, but in most cases it is much faster. You will receive an email when your submission has been reviewed.

If you are having any problems submitting your project or wish to check on the status of your submission, please email us at dataanalyst-project@udacity.com.

**What's Next?**

This is one of the strongest projects you've worked on so far, so make sure to add it to both your resume and LinkedIn. You must continue building your data portfolio. If you were in a job interview three months from now, do you want to say you last worked on a data project three months ago or last week?

To diversify your data science portfolio, start pursuing personal projects. This shows you're passionate and allows you to refine and continue building your skills. A great way to start is downloading a [**dataset from Kaggle**](https://www.kaggle.com/datasets). Start by exploring the dataset, as you did in the Explore and Summarize Data project.

Then, test a hypothesis or apply some machine learning. For a bigger challenge, take on a [**Kaggle competition**](https://www.kaggle.com/competitions) sponsored by a company. If you are entering the data science field for the first time and looking to add real-world experience into your belt, you can get it through Kaggle!

You have not submitted the project yetSUB