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Python is great for studying data and analyzing data, all thanks to the support of amazing libraries such as numpy, pandas, matplotlib, and many others. During the data research and data analysis phase, it is important to understand the data we are dealing with and visual representation of our data can be extremely important. We often work on these projects using Jupyter laptops because they are great, fast, simple, and they allow us to interact and play with our data. However, there are limitations to what we can do, usually when we work with diagrams, we use libraries such as matplotlib or seaborn, but these libraries display static images of our diagrams and graphs. Many things get lost in the details, and thus we need to fine-tune our diagrams to study sections of our data. Wouldn't it be great if we could just interact with our diagrams by zooming in and adding contextual information to our data points, how do we hover in interactions? That's where Plotly can help us. Plotly is a python library that makes interactive, publishing quality graphics like linear graphs, scattering plots, area plots, bar charts, bug bars, box plots, histograms, heat maps, plots, and more. Read: How to Use Python and Selenium to scrape websites So let's start building some charts... Installing dependencies Before we build anything, let's establish dependencies. I would like to use pipenv, but the same applies to anaconda or other package managers. Here's a list of dependencies we need: jupyter: a web application that lets you create and share documents that contain live code, equations.... You know that! Panda: A very powerful library for data analysis in general, and we will use it in our project to process our data. numpy: Scientific calculations for Python used in our project on mathematics and random number generation. seaborn: Statistical data visualization based on matplotlib, we will use it to download some of the sample data that comes with the library. Cufflinks: This allows plots to work with pandas. Plot: Interactive Graphics Library. Here are the commands to install them: Start working To start we need to start our jupyter laptop and create a new document. Once we're there, we can start adding some code. Since this article is not a tutorial on Jupyter laptops, I'll just focus on the code and not on how to use the document. Let's start importing libraries: Plotly, with the help of other libraries, can visualize stories in different contexts. For example, on a laptop jupyter, online on the dashboard, etc. However, we also have to tell the cufflinks that we will offline mode for diagrams. This option can be done by software adding the next cell to our notebook: Now we're ready to get some data and start building. Generating random data, I don't want to focus so much on how to download or get data, so for that reason, we just Random data for diagrams, in a new cage we can use pandas and numpy to build a 3D matrix: Using numpy we can generate our random numbers and we can load them into a panda DataFrame facility. Let's see what our data looks like: It's great! Now it's time to build some charts. Our first graph is a convenient way to build DataFrames using the iplot method available on Series and DataFrames, courtesy of cufflinks. Let's start with everyone by default: at first glance, it looks like any other graph, but if you hover with your mouse over the chart you'll start to see some magic. The toolbar appears when you hover in the top right of the screen, allowing you to zoom in, pan and other things. The chart also allows you to zoom in by drawing an area on the graph or just see the tooltip on each data point with additional information like value. Our chart above is certainly better than the static chart, however, it's still not great. Let's try to make the same diagram with the scattering area. Not scary, but not great, the points are too big, let's put them: Much better! Next, let's try something different. Charts bars Let's forget our randomly generated dataset for a minute and download a popular dataset from the Seaborn library to visualize some other types of diagrams. The dataset we're going to be working on is called titanic and contains information about what happened to the people who traveled on the Titanic on that tragic day. One of the special variables in this dataset is the surviving variable, which contains drilling information, 0 for those who died, and 1 for those who survived the accident. Let's build a bar chart to see how many men and women have survived: The trend can be easily seen, however, if you just share this chart it is impossible to know what we are talking about because it has no legends nor names. So let's fix this: It's much better now! But what if we want to draw a horizontal bar area? Easy enough: Our chart themes still look great, but maybe we want to use a different color scheme for our charts. Fortunately, we have a set of themes that we can use to visualize our stories. Let's list them and switch them to another one. Topics: It should come out something like this: We can switch the theme for all future charts, simply by adding: And now if we do our bar chart again we get something like: Dark Mode is one of my favorites. Surface charts So far we have visualized 2D charts, but plotly also supports 3D charts. Let's build some 3D charts just for fun. The next plot is the 3D Surface plot and for that, we have to create some data using pandas, as you see in the following: You have to get something like: Let's throw this on a 3D chart using Surface View: Looks Amazing! Now, let's change the color scheme to make it more visually appealing: Beautiful! But isn't it, have you tried to interact with the diagram in the notebook? You can even rotate it. Plotly is a great chart alternative for your research and data analysis. As can be seen from this article, the articles provides interactive dashboards to help you better identify your emissions and gain a better understanding of your data by moving through them. I probably won't use the plots for each data set, but it's a very interesting library that we need to know about. This article was originally published on Live Code Stream by Juan Cruz Martinez (Twitter: @bajcmartinez), founder and publisher of Live Code Stream, entrepreneur, developer, author, speaker, and doer of things. Live Code Stream is also available as a free weekly newsletter. Sign up for updates on everything related to programming, artificial intelligence and computer science in general. Read next: This app lets you experience Mac OS like it was 90s over and over again TechPython (programming language)Data analysisWeb applicationCodeData ThoughtCo uses cookies to provide you with a great user experience. Using ThoughtCo, you accept our use of cookies. TL;DR: Sharpen your programming skills with a full Python E-book and video course bundle for \$29.99, a 96% savings compared to July 2. As 2020 has made clear, no one can realistically predict the future. But there are people who come quite close, and their profession may surprise you. Data scientists (yes, you're reading this right) can practically predict the future of some industries using big data and a coding language called Python. Knowing this, it's not hard to see why Glassdoor named these scientists the third most desirable job in the U.S., with more than 6,500 holes, an average base salary of \$107,801, and a job satisfaction level of 4.0. If you are looking for a new career path with a beautiful salary and the ability to basically predict the future, check out this e-book and course bundle to get started. This package contains five e-books about Python, AI, Deep Learning and more, as well as 17 hours of video content to get you up to speed on Python programming. You'll start with the basics of learning Python for data science, and then immerse yourself in more specialized topics such as deep learning and machine learning, artificial intelligence, and high-performance computing with libraries such as NumPy, SciPy and Cython. Next, you'll do some hands-on training with accompanying e-books based on open source TensorFlow 2, object-oriented programming, as well as a range of Python libraries like Panda, NumPy, matplotlib, seaborn, and sci-kit-learn for data authenticity, visualization and analysis, and scrapy and beautiful soup for web scraper. Don't worry if none of this makes sense to you yet. With Packt Publishing and instructor Ilyas Ustun, you'll analyze and visualize the data on time. Packt Publishing has a 4 out of 5-star average rating of more than 303K students and has published more than 6,500 books and providing IT professionals with the knowledge they need for new technologies and key skills. Ustun, a data scientist, has worked in various fields such as transportation, vehicle re-identification, smartphone sensors, motion detection, traffic, digital agriculture. Combine this with a passion for data-driven analytics solutions, and you have one excellent teacher. This Python e-book and video bundle is usually over \$750, but you can get it for as little as \$29.99 for a limited time. It's time. python data analysis cookbook github. python data analysis cookbook by ivan idris. python data analysis cookbook download

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