

Data Visualisation with Python Programming

- Presentation By Uplatz
- Contact us: <https://training.uplatz.com>
- Email: info@uplatz.com
- Phone: +44 7836 212635

Data Visualisation

Learning outcomes:

Data visualization in Python

- **What is data visualization**
- **Benefits of data visualization**
- **Importance of data visualization**
- **Top Python Libraries for Data Visualization**

Data Visualisation

Data visualisation is an efficient technique of gaining insights about data through a visual medium.

The main goal of this Data Visualisation with Python course is to teach you how to take data that at first glance has little meaning and present that data in a form that makes sense to people.

Now one might ask why would I need to learn how to visualize data. Well data visualization is a way to show a complex data in a form that is graphical and easy to understand.

Data Visualisation

This can be especially useful when one is trying to explore the data and getting acquainted with it. Also since a picture is worth a thousand words, then plots and graphs can be very effective in conveying a clear description of the data especially when disclosing findings to an audience or sharing the data with other peer data scientist. Also, they, can be very valuable when it comes to supporting any recommendations you make to clients managers or other decision-makers in your field.

Data Visualisation

Data visualization plays an essential role in the representation of both small and large-scale data. One of the key skills of a data scientist is the ability to tell a compelling story, visualizing data and findings in an approachable and stimulating way. Learning how to leverage a software tool to visualize data will also enable you to extract information, better understand the data, and make more effective decisions.

Data Visualisation

Data visualization is a technique used for the graphical representation of data. By using elements like scatter plots, charts, graphs, histograms, area plots etc., we make our data more understandable. Data visualization makes it easy to recognize patterns, trends, and exceptions in our data. It enables us to convey information and results in a quick and visual way.

Benefits of data visualization

The main benefits of data visualization are as follows:

- It simplifies the complex quantitative information.
- It helps analyse and explore big data easily
- It identifies the areas that need attention or improvement.
- It identifies the relationship between data points and variables.
- It explores new patterns and reveals hidden patterns in the data.

Benefits of data visualization

Data Visualization Application enables users to visualize data, draw insights and understand it better. It allows people to organize and present information intuitively. By visualizing data, you are able to ask more questions and quickly find answers. You can combine visualizations into a dashboard. Dashboards are useful because they allow you to relate different views of information visually. You may create operational dashboards that are used over and over again, or create dashboards on the fly to dig deeper into an issue. Data Visualization tools provide valuable decision support by allowing users to quickly create and modify dashboards.

Benefits of data visualization

Three major considerations for Data Visualization:

- **Clarity**
- **Accuracy**
- **Efficiency**

Clarity ensures that the data set is complete and relevant. This enables the data scientist to use the new patterns yield from the data in the relevant places.

Accuracy ensures using appropriate graphical representation to convey the right message.

Efficiency uses efficient visualization technique which highlights all the data points.

Importance of data visualization

Data visualization gives a speedy and viable approach to impart data in a widespread way utilizing visual data. The training can likewise assist organizations with recognizing which components influence client conduct; pinpoint territories that should be improved or need more consideration; cause information increasingly vital for stakeholders; to get when and where to put explicit items; and anticipate deals volumes.

Importance of data visualization

Other benefits of data visualization include:

the ability to absorb information quickly, improve insights and make faster decisions;

an increased understanding of the next steps that must be taken to improve the organization;

an improved ability to maintain the audience's interest with information they can understand;

an easy distribution of information that increases the opportunity to share insights with everyone involved.

Top Python Libraries for Data Visualization

1. Matplotlib:

Matplotlib is the most popular data visualization library of Python and is a 2D plotting library. It is the most widely-used library for plotting in the Python community and is more than a decade old. It comes with an interactive environment across platforms. Matplotlib can be used in Python scripts, the Python and IPython shells, the Jupyter notebook, web application servers and four graphical user interface toolkits.

Top Python Libraries for Data Visualization

1. Matplotlib:

It is a very versatile visualization library. With this library, with just a few lines of code, one can generate plots, bar charts, histograms, power spectra, stemplots, scatterplots, error charts, pie charts and many other types. The pyplot module provides a MATLAB-like interface, particularly when combined with Ipython.

Top Python Libraries for Data Visualization

2. Plotly:

Plotly is a web-based toolkit to form data visualisations. Plotly can also be accessed from a Python Notebook and has a great API. With unique functionalities such as contour plots, dendrograms, and 3D charts, it has visualizations like scatter plots, line charts, bar charts, error bars, box plots, histograms, multiple axes, subplots and many others.

Top Python Libraries for Data Visualization

3. Seaborn:

The Python data visualization library of Seaborn is a library based on Matplotlib. It provides a much more terse API for creating KDE-based visualizations. It provides a high-level interface for drawing attractive and informative statistical graphics.

Data Visualization Is Entering the Mainstream in a Big Way

Studies show charts, graphs and other visualizations provide an easy way of remembering data when compared to monotonous spread sheets and archaic reports.

Not only is this true in the professional world, but many academic institutions are embracing next-gen data visualizations in student essays, presentations and theses, too.

It seems there's hardly an area untouched by data visualization — and the field is still in its infancy.



Thank you