TOP 7 PYTHON LIBRARIES FOR DATA VISUALIZATION
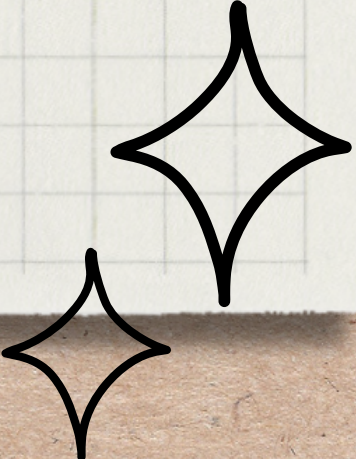
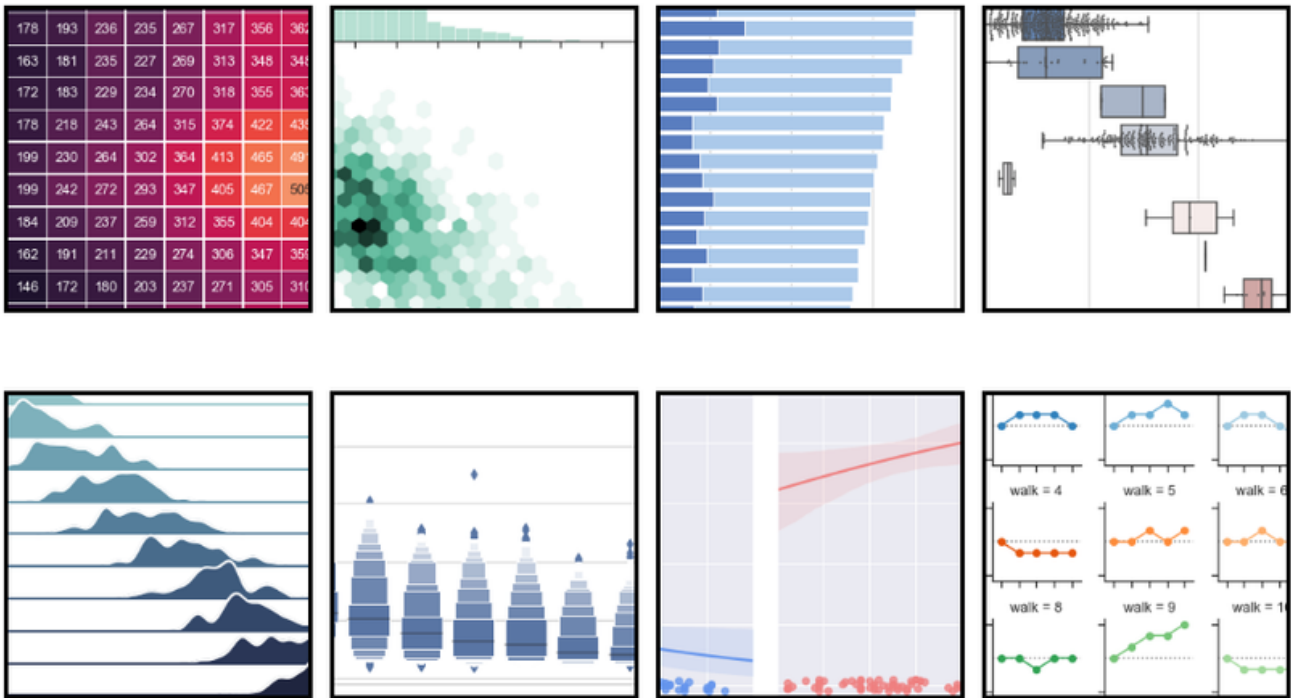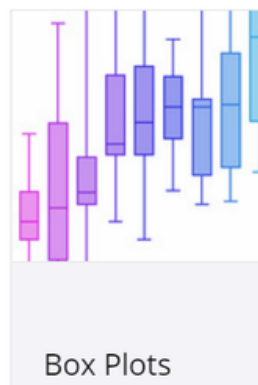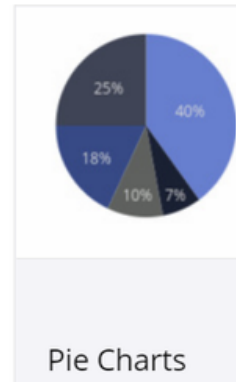by Akash Singh

1 .SEABORN

About –
Seaborn is also one of the very popular Python visualization tools and is based on Matplotlib. Seaborn is thin wrappers over Matplotlib

Key features and benefits: –

- A higher-level Python visualization library based on the Matplotlib library.
- A great range of settings for processing graphs and charts.
- Very rich gallery of visualizations and some of them are complicated types such as time series, and violin plots. Also, it has a great range of more common charts.
- Sophisticated styles and color palettes.
- Easily displays distributions and data relationships.
- Can show information from matrices and DataFrames.
- Website: https://seaborn.pydata.org/

2 .PLOTLY

| Scatter Plots | Line Charts | Bar Charts | Pie Charts |
| Error Bars | Box Plots | Histograms | Distplots |
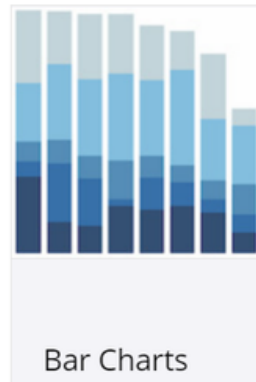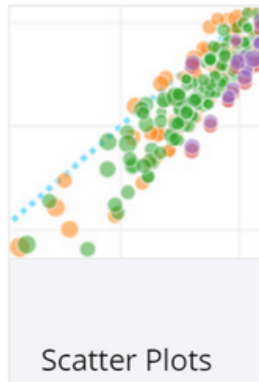
About –

When it comes to interactive Python visualization tools, Plotly has a top place here. Plotly's Python free and open source graphing library help you create interactive, publication-quality graphs easily online.

Key features and benefits: –

- A comprehensive range of rich and interactive graphs.
- The interactive plots allow you to seamlessly explore the data by panning, selecting, zooming on the graphing surface.
- Ternary plots and 3D charts.
- A great range of basic charts, statistical and Seaborn-style charts, scientific graphs, financial charts, 3d scatter plot, maps, 3D graphs, multiple Axes, subplots, insets, and transformations.
- Supports for "multiple linked views" and animation.
- Plotly is able to graph and visualize almost all sorts of data.
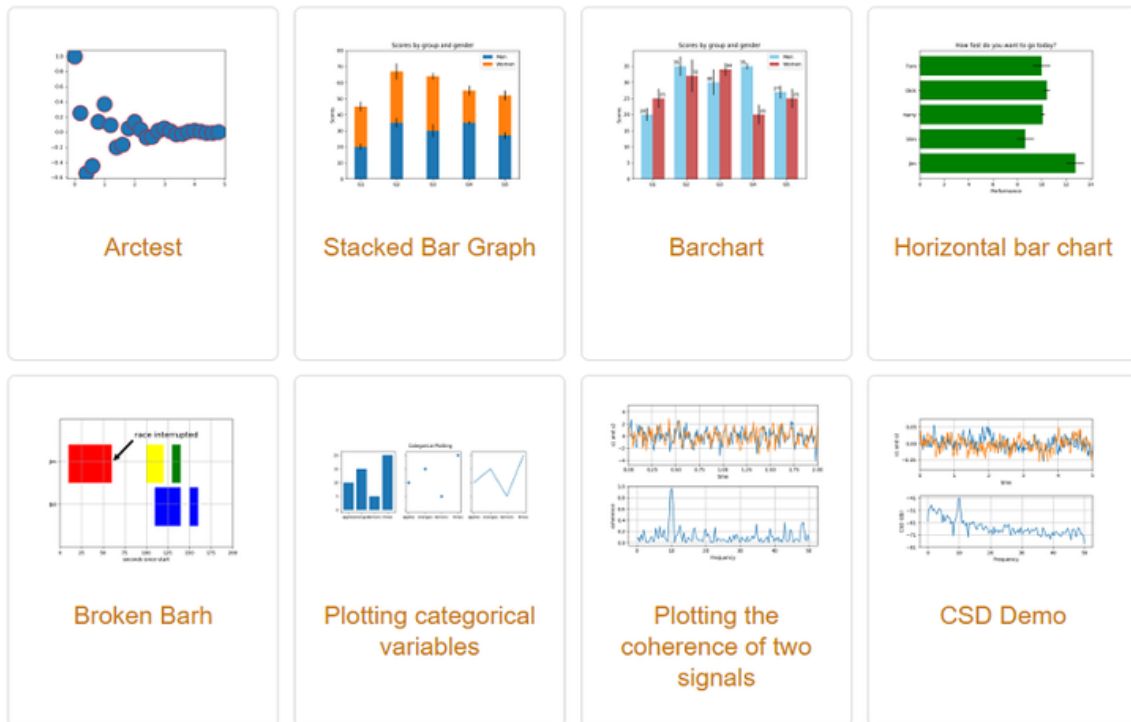- Website: https://plot.ly/

3 .BOKEH

About –

Bokeh also is an interactive Python visualization library tool that provides elegant and versatile graphics. It is able to extend the capability with high-performance interactivity and scalability over very big data sets.

Key features and benefits: –

- Able to combine multiple plots and widgets.
- Handles categorical data with different techniques such as bar charts and categorical heatmaps.
- Creates network graph visualizations.
- Working with geographical data.
- Uses interactive tools such as pan, zoom, and select, on your plots.
- You can easily customize every visual aspect of the plots- axes, labels, glyphs, and more.
- You can also create very sophisticated interactions including widgets or linked planning.
- Displays interactive plots inside Jupyter notebooks.
- You can add new features to Bokeh with custom user extensions.
- Website: https://plot.ly/

4 . MATPLOTLIB

Arctest

Stacked Bar Graph

Barchart

Horizontal bar chart

Broken Barh

Plotting categorical variables

Plotting the coherence of two signals

CSD Demo

About –

Matplotlib is one of the most popular and oldest data visualization tools using Python. It is a quite powerful but also a complex visualization tool. Matplotlib is a Python 2D plotting library that provides publication quality figures in a variety of hardcopy formats and interactive environments across many platforms.

Key features and benefits: –

- You can generate and use plots, bar charts, pie charts, 3D plotting, error charts, histograms, power spectra, scatter plot, etc.
- Provides a MATLAB-like interface
- An object-oriented interface and a set of functions familiar to MATLAB to control your line styles, axes properties, font properties, etc.
- A great examples gallery and a list of plotting commands to help you learn how to do a particular kind of plot.
- Ships with many add-on toolkits, including 3d plotting with mplot3d, axes helpers in axes_grid1 and axis helpers in axisartist.
- An open source Python visualization tool with an active developer community and contributions.
- Website: https://matplotlib.org
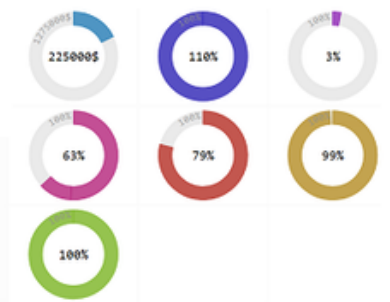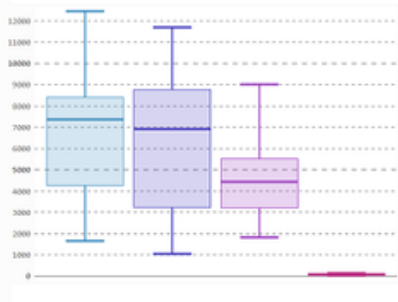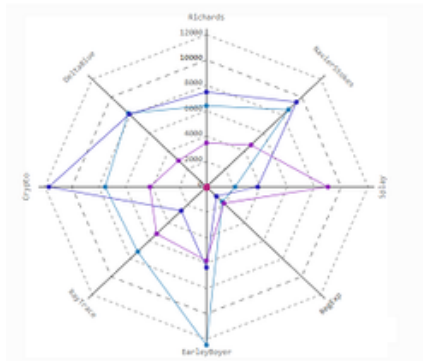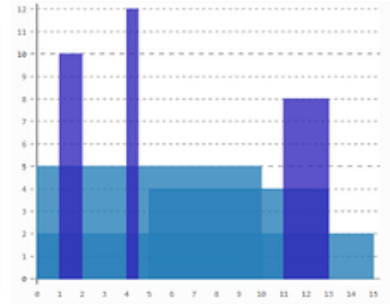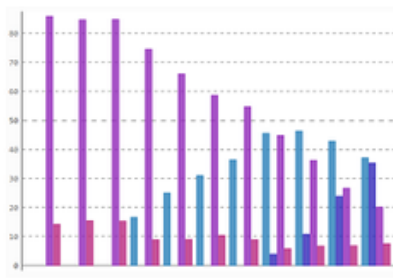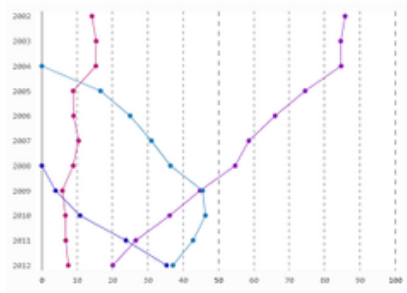
5 . PYGAL

About –

Pygal, as Bokeh and Plotly is also one of the top Python visualization tools that provide interactive plots, good-looking visualizations and support additional features.

The big difference is that Pygal concentrate on allowing you to create SVGs. SVG formatting is integrated greatly with Django and Flask.

Key features and benefits: –

- Three ways to style the charts – built-in styles, parametric styles, and custom styles.
- Provides good-looking interactive data visualizations.
- A lot of options for charts configuration as sizing, titles, labels, legend, axis, interpolations, tooltip, rendering, data, misc, and other specific options.
- Serie and value configuration.
- Provides a simple way to get beautiful sparklines.
- Pygal also supports an HTML table export.
- Can generate multiple output formats such as SVG, file, PNG, Etree, Browser, PyQuery, and Flask App.
- Website: https://matplotlib.org

6 . DASH
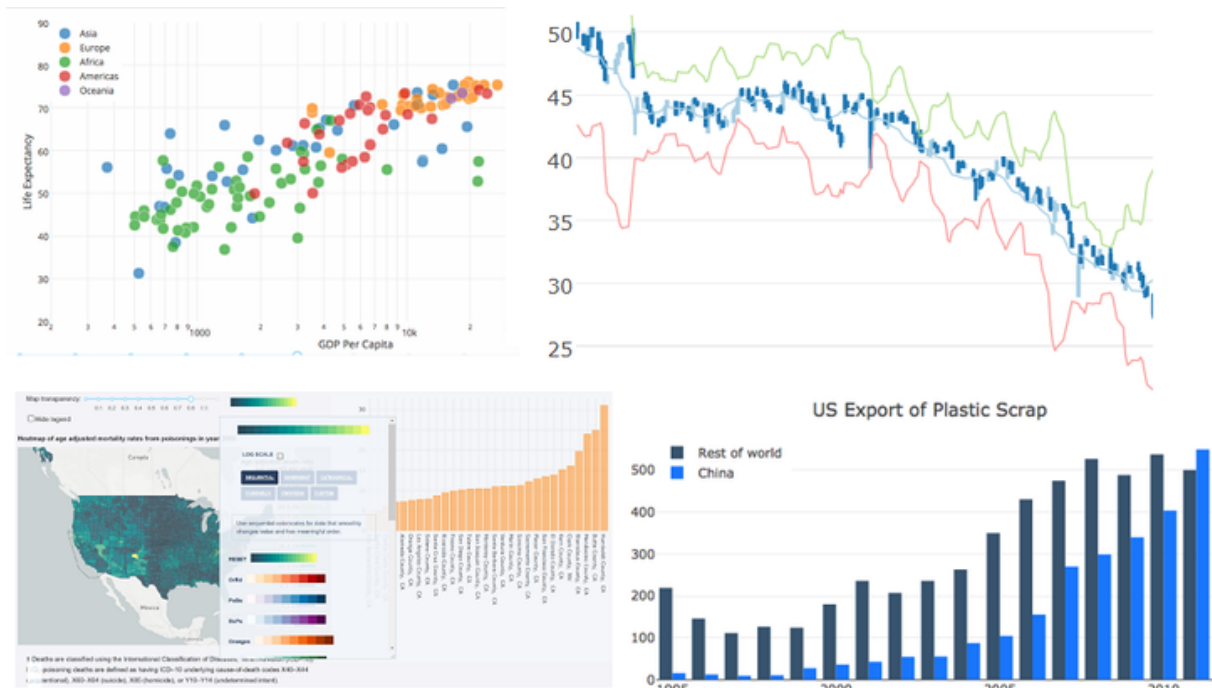
About –

Dash is a Python framework for building web applications. It is perfect for creating data visualization apps with highly custom user interfaces in Python.

Dash is written on Flask, Plotly.js, and React.js. Dash apps are rendered in the web browser and also mobile-ready.

Key features and benefits: –

- Interactive graphing and cross-filtering.
- Dash apps are made interactive through Dash Callbacks.
- Highly customizable and flexible tool with a wide variety of options such as sizing, positioning, fonts, colors, and etc.
- Provides modern UI elements like sliders, dropdowns, and graphs to your analytical Python code.
- Dash apps are built and published on the Web, so you have the full power of CSS.
- Open source – you can run the awesome Dash on your desktop for free.
- Handles expensive data processing tasks and process big data.
- Website: https://matplotlib.org

7 . ALTAIR

Bar Chart with Highlight | Box Plot with Min/Max Whiskers | Calculating Percentage of Total | Candlestick Chart

Multifeature Scatter Plot | Polynomial Fit Plot | Scatter Matrix | Scatter Plot with Href

Histogram with a Global Mean Overlay | Layered Histogram | World Projections | Interactive Average

About –

Altair is one of the good statistical Python visualization tools, based on Vega and Vega-Lite.
Altair allows you to create a comprehensive gamma of statistical visualizations easily thanks to its powerful and concise visualization grammar.

Key features and benefits: –

- An excellent range of simple to sophisticated plots and visualizations can be created.
- Altair plots can be made interactive. You can create many linked interactive chart types.
- Transforms or filter data in the process of visualizing.
- Top-level chart configuration.
- A number of compound plot types that can be used to create stacked, layered, faceted, and repeated charts.
- Automatically choose useful plot settings and configurations so that you can focus on the data rather than the mechanics of plotting.
- A selection of charts such as simple charts, bar and line graphs, area charts, scatter plots, histograms, maps, interactive charts, case studies, and many others.
- Website: https://altair-viz.github.io

NEED MORE PYTHON VISUALIZATION TOOLS?

Here is a list of other popular solutions: –

- Pydot
- Ggplot
- Pandas
- Geoplotlib
- Missingno
- Gleam
- Leather

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by Akash Singh

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