



A small circular icon representing a user profile, followed by the text 'rishabh-mishra' and a downward-pointing arrow indicating a dropdown menu.

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Reading: Define and Describe Basic Visualization Tools

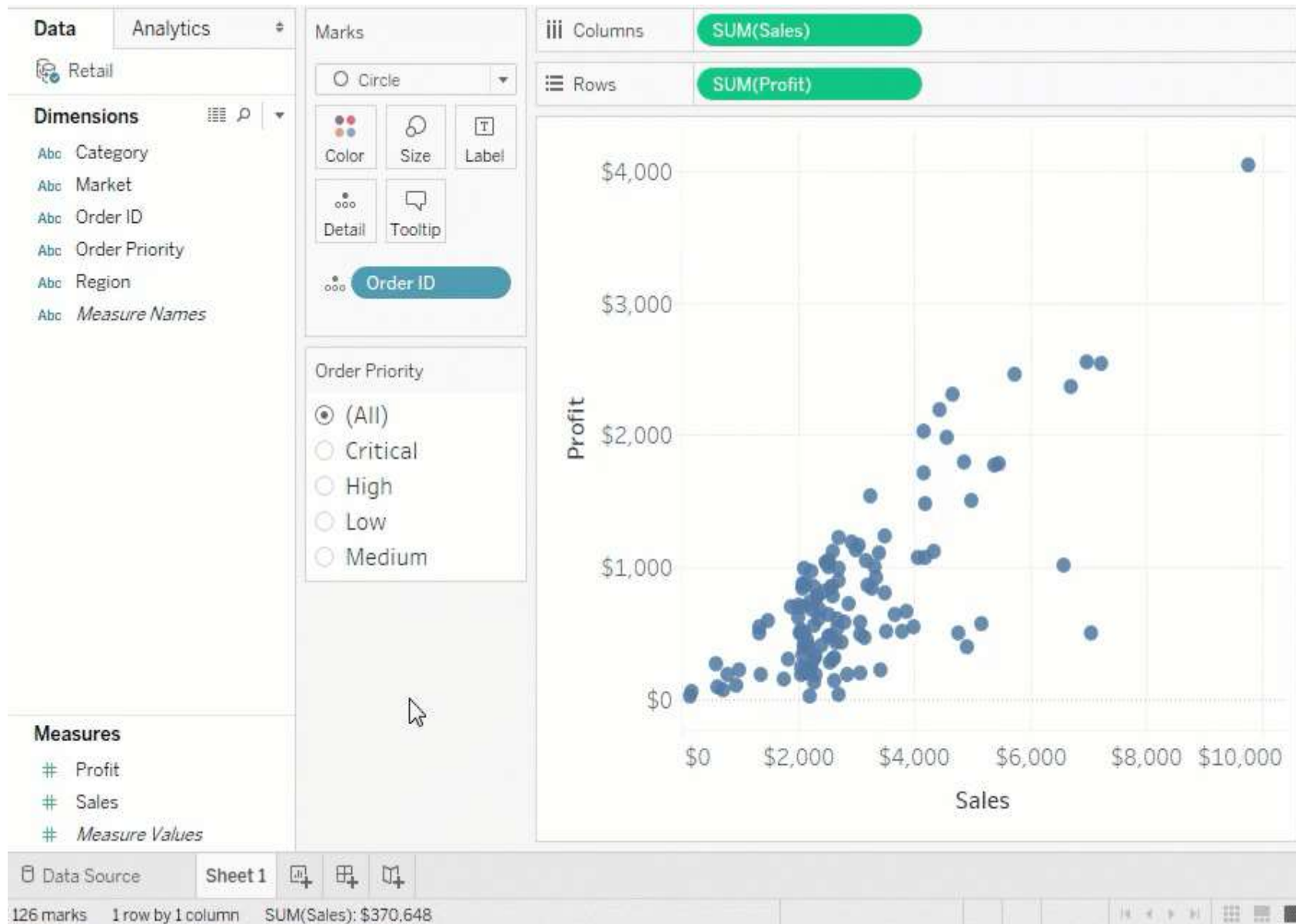
Reading: Define and Describe Basic Visualization Tools

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Now that we've discussed popular visualization dashboards, let's move on to learn about visualization tools.

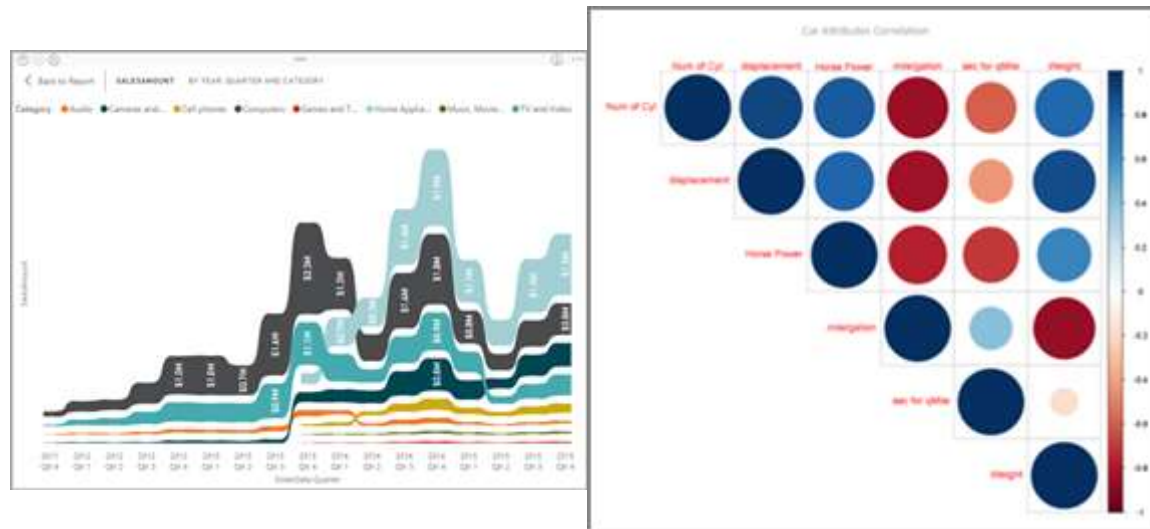
Basic visualization tools can help you build the most commonly used types of charts, graphs, and plots. We'll discuss the following basic visualization tools: Tableau Desktop, Microsoft Power BI, QlikView, and Jupyter Notebook.

As you learned in Module 1, Tableau Desktop is one of the most popular visualization dashboards. It has many tools available to create the visualization that you are after. Tableau Desktop offers live visual analytics with an interactive dashboard. You can connect to your data on-premises or in the cloud. Visualization tools available include text table (crosstab), heat map, highlight table, symbol map, filled map, pie chart, horizontal bar chart, stacked bar chart, side-by-side bar chart, treemap, circle view, side-by-side circle view, line charts (continuous & discrete), dual-line chart (non-synchronized), area charts (continuous & discrete), scatter plot, histogram, box-and-whisker plot, Gantt chart, bullet graph, and packed bubbles.



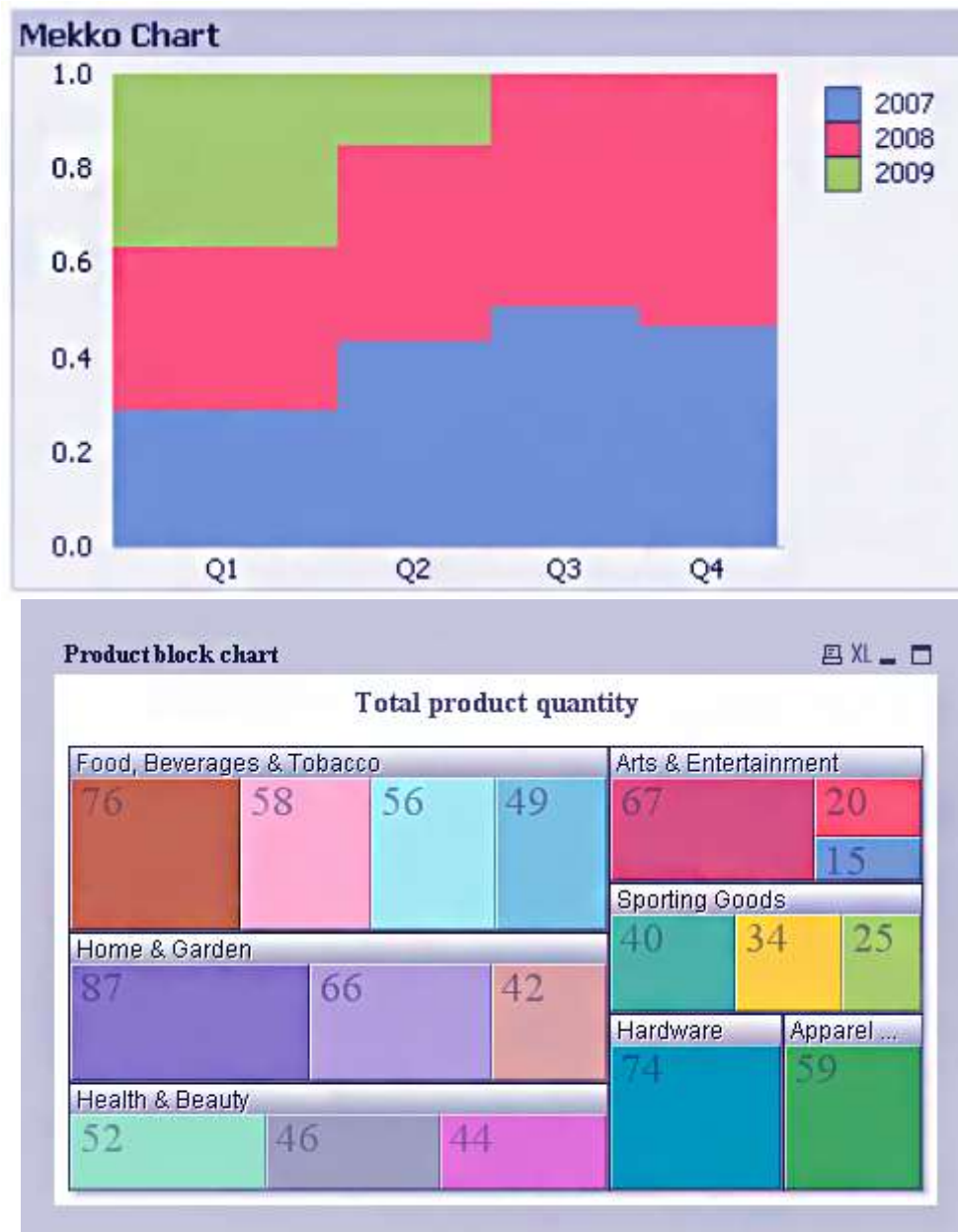
[Click here to learn more about Tableau Desktop.](#)

Microsoft Power BI is another popular visualization dashboard that offers a wide array of visualization tools. Microsoft Power BI offers layered area charts, stacked area charts, bar charts, columns charts, multi row, single number, combo charts (which combine a column chart and a line chart), doughnut charts, funnel charts, gauge charts, key influencers chart, KPIs (which displays progress towards a measurable goal), line charts, basic maps, ArcGIS maps, filled maps, shape maps, table matrix, pie chart, Power Apps visual, Q&A visual, R script visual, ribbon chart, scatter chart, bubble chart, scatter high density, slicers, treemaps, and waterfall charts. Microsoft is also developing new charts all the time. In addition, Microsoft Power BI users have the ability to visit the Microsoft AppSource where a growing list of Power BI visuals are available to use in your own dashboards and reports.



[Click here to learn more about Microsoft Power BI.](#)

The next tool we will discuss is QlikView. All the visualizations offered by Qlik in Qlik Sense and QlikView fall under one of four visualization categories: comparison charts, composition charts, relationship charts, and distribution charts. The types of visualizations available include a bar chart, pie chart, combo chart, scatter chart, line chart, radar chart, grid chart, gauge chart, block chart, funnel chart, pivot table, straight table, Mekko chart, list box, statistics box, multi-box, table box, input box, current selections box, button, text object, line/arrow object, slider/calendar object, custom object, search object, bookmark object, and container object.



[Click here to learn more about QlikView.](#)

The last tool on our list to discuss is Jupyter Notebook which is an open-source web application that allows you to create and share documents that contain live code, equations, visualizations, and narrative text. Visualizations available in Jupyter Notebook include all of the common ones and you can work with code or Pandas to create more. In the next module, we will use Jupyter Notebook to create some charts.

The image shows two overlapping Jupyter Notebook windows. The background window is the 'Welcome to Jupyter' screen, which includes a warning message: 'WARNING: Don't rely on this server for production use. Your server is hosted there.' Below this, it says 'Run some Python code' and provides instructions: '1. Click on the cell to select it. 2. Press SHIFT+ENTER to run the code below.' The foreground window is titled 'Lorenz Differential Equations (autosaved)' and is running Python 3. It contains the following text:

Exploring the Lorenz System

In this Notebook we explore the [Lorenz system](#) of differential equations:

$$\begin{aligned}\dot{x} &= \sigma(y - x) \\ \dot{y} &= \rho x - y - xz \\ \dot{z} &= -\beta z + xy\end{aligned}$$

This is one of the classic systems in non-linear differential equations. It exhibits a range of complex behaviors as the parameters (σ, β, ρ) are varied, including what are known as *chaotic solutions*. The system was originally developed as a simplified mathematical model for atmospheric convection in 1963.

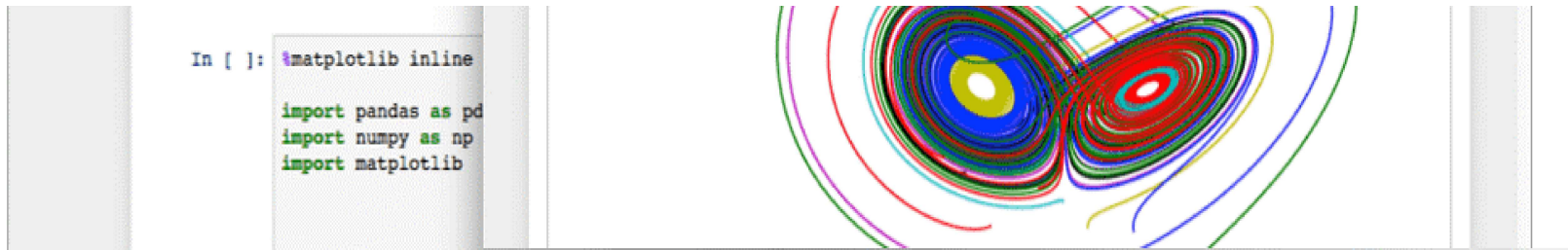
The notebook includes an interactive plot of the Lorenz system. The code cell shows:

```
In [7]: interact(Lorenz, N=fixed(10), angle=(0.,360.),
                sigma=(0.0,50.0), beta=(0.,5), rho=(0.0,50.0))
```

Below the code, there are sliders for the following parameters:

- angle: 308.2
- max_time: 12
- σ : 10
- β : 2.6
- ρ : 28

The plot shows the characteristic Lorenz attractor, a complex, chaotic trajectory in a 3D space.



[Click here to learn more about Jupyter Notebook.](#)

Now that we've learned about some of the basic visualization tools available, we'll move on to discuss specialized visualization tools.



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