Data Visualization and Techniques for Corporate Analytics

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Abstract

Data visualization is a technique of representing data in a graphical or pictorial format to enable viewers to easily comprehend complex information. It involves creating visual representations of data to communicate information, patterns, and relationships in the data. Data visualization has become increasingly important in the modern era, as the volume of data generated by businesses and organizations continues to grow at an unprecedented rate. In the past, data was typically presented in tables and charts, which could be difficult for non-experts to interpret. However, advances in technology have made it possible to create visualizations that are both informative and visually appealing.

Introduction

Data Visualization has become an integral part of today corporate's data and analytics community to present the data to business users, investors, c executives and other stakeholder of the company. It provides a pictorial representation of the data in a very concise and aggregated manner.

There are several types of data visualization, including charts, graphs, maps, and infographics. Each type of visualization is suited to different types of data and can be used to convey different types of information.

Charts: are one of the most common types of data visualization. They are typically used to show trends over time, such as sales figures or website traffic. Common types of charts include line charts, bar charts, and pie charts.

Graphs: are another type of data visualization that is used to show relationships between different variables. Scatter plots, for example, are used to show the correlation between two variables, while bubble charts can be used to show the relationship between three variables.

Maps: are another type of data visualization that is used to show geographic data. They can be used to show things like population density, average income, or distribution of resources.

Infographics: are a type of data visualization that combines text, images, and charts to create a visually compelling representation of data. They are often used in marketing and advertising to communicate complex information in a way that is both informative and engaging.

The importance of data visualization lies in its ability to convey information in a way that is easy to understand and interpret. Data can be complex, and visualizations can help to simplify that complexity by presenting information in a format that is easy to comprehend.

Visualization also helps identify patterns and trends that might not be apparent in a table of numbers or raw data. This enables decision-makers to quickly grasp the meaning and implications of data, leading to better-informed decisions.

Furthermore, data visualization helps to improve communication. It is an effective way of communicating complex information to a non-technical audience. It can help to convey information in a more engaging and memorable way. Visualizations can also be used to tell a story, making data more accessible and relatable to people.

Data visualization can enhance understanding by simplifying complex data by presenting it in a format that is easy to understand. This enables non-experts to understand complex data and make informed decisions based on that data. Visualization can also be used to identify patterns and relationships in data that might not be evident otherwise, leading to new insights and discoveries.

There are several best practices to follow when creating data visualizations. First, it is important to select the appropriate type of visualization for the data being presented. Different types of data require different types of visualization to be most effective. It is also important to ensure that the visualization is clear and easy to understand. The title, axis labels, and legend should all be clear and concise, and the colors and fonts used should be easy to read.

Another important consideration when creating data visualizations is data accuracy. It is essential to ensure that the data being presented is accurate and reliable. This can be achieved by using trusted data sources, ensuring data is collected and stored correctly, and verifying data accuracy through data analysis and validation.

In recent years, there has been an increase in the use of interactive data visualizations, which allow viewers to manipulate and explore data in real-time. Interactive visualizations can help viewers to gain a deeper understanding of the data and can be particularly useful for complex data sets.

In summary, data visualization is a crucial tool for understanding and communicating complex data. It can help to identify patterns and trends, facilitate decision-making, improve communication, enhance understanding, and enable data-driven insights. By following best practices and considering the limitations of data visualization, organizations can create effective visualizations that communicate data accurately and effectively. As data continues to grow in volume and complexity, data visualization will become increasingly important as a means of making sense of that data and communicating it to others.

Data Visualization Tools and Technologies

There are many tools, technologies and scripting languages are available to use for data visualizations. Based on an enterprise's maturity in technologies one of these tools can be uses for visualization. These tools can be categorized in two ways.

1. Scripting Languages
   a. R
   b. Python
2. Visualization Tools
   a. Tableau
   b. Power BI
   c. QlikView
   d. Domo
   e. Apptio
   f. Looker
   g. Google Data Studio

Let's talk about above visualization tools and technologies in detail. Tableau is a leading tool so will include few examples of visualization in Tableau.

1.a R

R is a programming language and software environment that is widely used for statistical computing, data analysis, and visualization. It is an open-source language, which means that anyone can use, modify, and distribute it for free. R provides an extensive range of tools and libraries for data visualization, making it a popular choice for data analysts and scientists.

Some of the popular data visualization packages in R include:

ggplot2 - ggplot2 is a popular data visualization package in R that provides a flexible and powerful system for creating visualizations. It is based on the grammar of graphics, which allows users to construct plots using a series of layers that can be customized and combined to create complex visualizations.

lattice - lattice is another popular data visualization package in R that provides a set of powerful tools for creating complex and customizable visualizations. It provides a range of plotting functions for different types of data, including bar plots, line plots, scatter plots, and more.

plotly - plotly is a package in R that allows users to create interactive and dynamic visualizations. It provides a range of visualization options, including scatter plots, line plots, bar charts, and more. With plotly, users can add interactivity to their visualizations, including hover-over information, zooming, and panning.

Shiny - Shiny is an R package that allows users to create interactive web applications. It provides a range of tools for creating user interfaces and visualizations that can be deployed on the web. With Shiny, users can create interactive visualizations that can be customized and updated in real-time.

dygraphs - dygraphs is a package in R that allows users to create interactive time-series visualizations. It provides a range of options for customizing the appearance of time-series data, including options for zooming, panning, and highlighting.

wordcloud - wordcloud is a package in R that allows users to create word clouds from text data. It provides a range of options for customizing the appearance of word clouds, including options for adjusting the size, color, and shape of words.

In addition to these packages, there are many other data visualization packages available in R, including packages for creating heatmaps, network graphs, and more.

One of the main advantages of using R for data visualization is its flexibility and customization options. R provides users with a range of tools and libraries for creating visualizations that can be customized and combined to create complex and informative visualizations. R also provides users with the ability to automate the creation of visualizations, which can be useful for analyzing large data sets.

Another advantage of using R for data visualization is its integration with other data analysis tools. R can be used in combination with other data analysis tools like Python, SQL, and more, to create more powerful and informative visualizations.

In conclusion, R is a popular language for data visualization that provides users with a range of tools and libraries for creating complex and informative visualizations. With its flexibility, customization options, and integration with other data analysis tools, R is a

powerful tool for data analysts and scientists who want to create powerful and informative visualizations from their data.

1.b Python

Python is another popular programming language that is widely used for data visualization. Python has several libraries and frameworks for data visualization, making it a powerful tool for data analysts and scientists.

Some of the popular data visualization libraries in Python include:

Matplotlib - Matplotlib is a popular data visualization library in Python that provides a range of tools for creating 2D and 3D plots. It provides a range of options for customizing the appearance of plots, including color, line style, and more.

Seaborn - Seaborn is a library in Python that provides a set of high-level interface for creating informative and attractive statistical graphics. It is built on top of Matplotlib and provides a range of tools for creating complex visualizations with ease.

Plotly - Plotly is also a library in Python like R that allows users to create interactive and dynamic visualizations. It provides a range of visualization options, including scatter plots, line plots, bar charts, and more. With plotly, users can add interactivity to their visualizations, including hover-over information, zooming, and panning.

Bokeh - Bokeh is a library in Python that allows users to create interactive and dynamic visualizations for the web. It provides a range of tools for creating interactive visualizations, including hover-over information, zooming, and panning.

Altair - Altair is a declarative visualization library in Python that allows users to create interactive and informative visualizations. It provides a range of options for customizing the appearance of visualizations, including color, shape, and more.

In addition to these libraries, there are many other data visualization libraries available in Python, including libraries for creating heatmaps, network graphs, and more.

One of the main advantages of using Python for data visualization is its flexibility and customization options. Python provides users with a range of libraries and frameworks for creating visualizations that can be customized and combined to create complex and informative visualizations. Python also provides users with the ability to automate the creation of visualizations, which can be useful for analyzing large data sets.

Another advantage of using Python for data visualization is its integration with other data analysis tools. Python can be used in combination with other data analysis tools like R, SQL, and more, to create more powerful and informative visualizations.

In conclusion, Python is a powerful language for data visualization that provides users with a range of libraries and frameworks for creating complex and informative visualizations. With its flexibility, customization options, and integration with other data analysis tools, Python is a popular choice for data analysts and scientists who want to create powerful and informative visualizations from their data.

2.a Tableau

Tableau is a powerful data visualization tool that allows users to create interactive and informative visualizations from their data. It provides a range of tools and features for creating complex and dynamic visualizations, including drag-and-drop functionality, advanced filtering options, and easy-to-use dashboards.One of the key features of Tableau is its ability to connect to a wide range of data sources, including spreadsheets, databases, and cloud-based services. This makes it easy for users to connect to their data and begin creating visualizations.

Tableau provides a range of visualization options, including bar charts, line charts, scatter plots, heat maps, and more. Users can easily create these visualizations by dragging and dropping their data into the workspace, and then customizing the appearance of the visualization using a range of tools and options.One of the key advantages of Tableau is its ability to create interactive and dynamic visualizations. Users can add filters, drill-down options, and hover-over information to their visualizations, making it easy to explore and analyze their data. This interactivity can be particularly useful when presenting data to others, as it allows viewers to interact with the data and explore it in more detail.

Tableau also provides a range of tools for creating dashboards, which allow users to combine multiple visualizations into a single, interactive dashboard. Users can easily drag and drop visualizations onto the dashboard, and then customize the appearance of the dashboard using a range of tools and options.

Another advantage of Tableau is its ability to create geographic visualizations. Users can easily plot their data on a map, and then customize the appearance of the map using a range of options. This can be particularly useful for analyzing data that is location-based, such as sales data or customer demographics.Tableau also provides a range of tools for data analysis, including data blending, forecasting, and statistical modeling. These tools allow users to analyze their data in more detail, and gain insights that may not be immediately obvious from the raw data.

Tableau provides a range of deployment options, including cloud-based and on-premises solutions. This makes it easy for organizations of all sizes to deploy Tableau and begin creating visualizations from their data.

Visualization charts in Tableau
Tableau provides in-built visualization charts which are easy to use and can be built on few clicks by required dimensions and measure.
Bar chart - A bar chart displays categorical data with rectangular bars that are proportional to the values they represent. It is commonly used to compare the frequency, count, or percentage of categories.
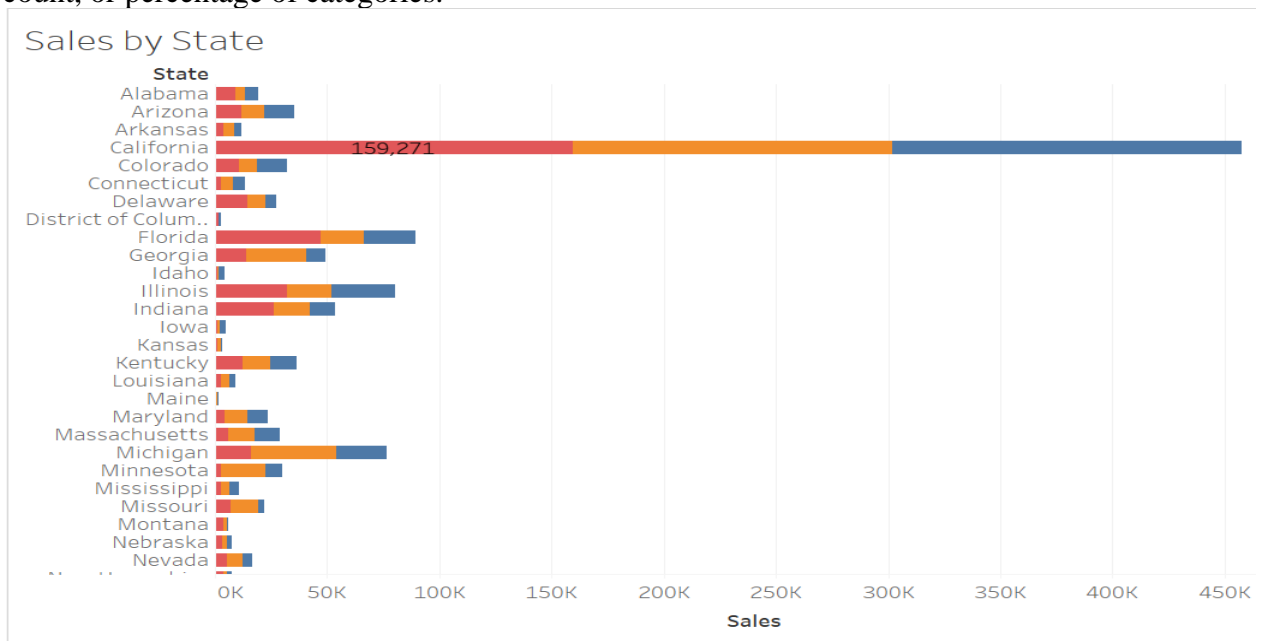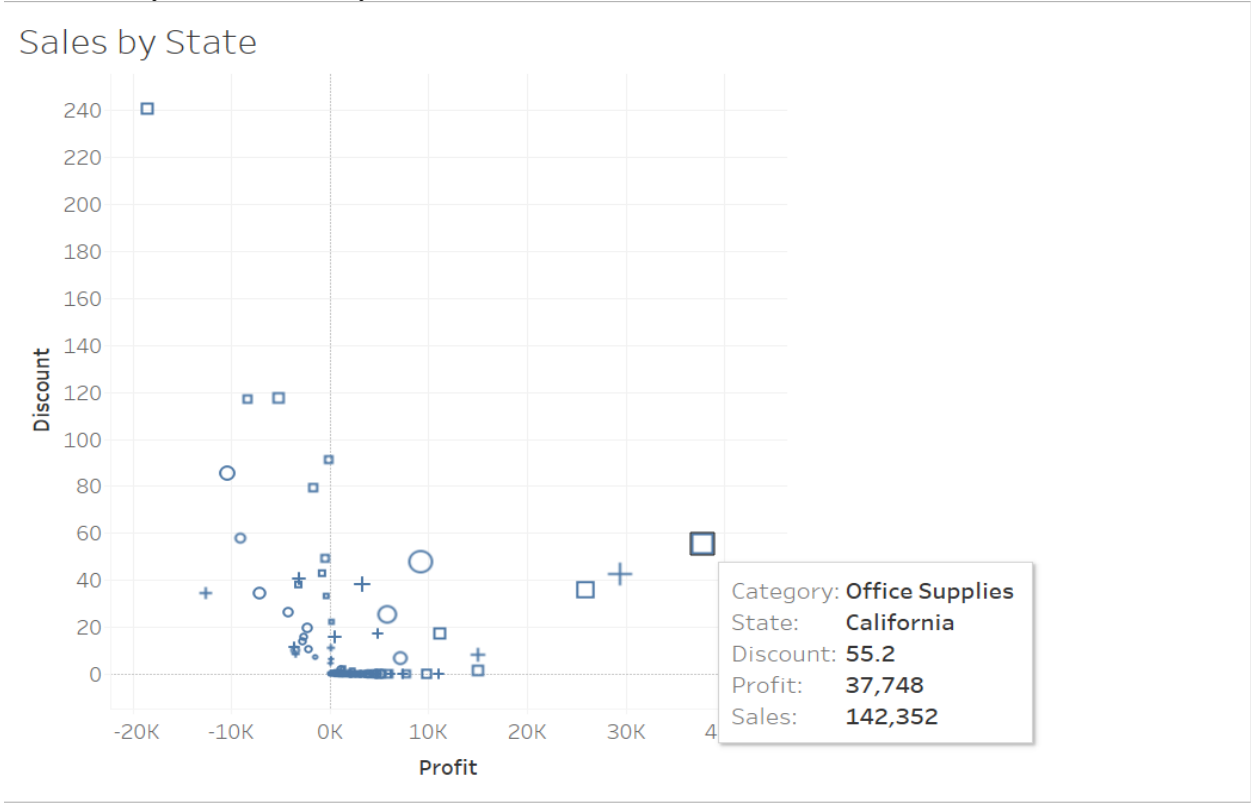

Bar Chart

Line chart - A line chart displays continuous data over time or other continuous scale. It is commonly used to show trends and patterns over time.
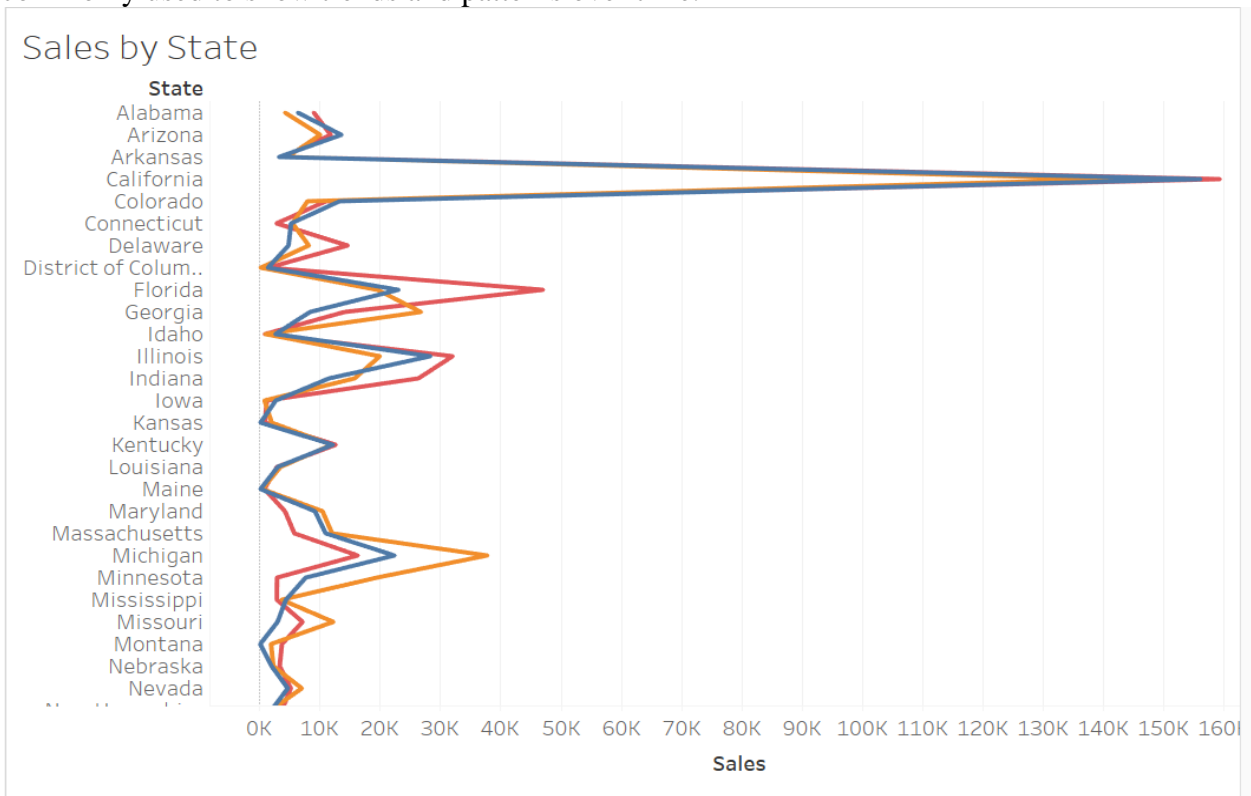

Line Chart

Scatter plot - A scatter plot displays the relationship between two continuous variables. It is commonly used to identify correlations and outliers.

Scatter plot

Area chart - An area chart displays the cumulative totals of data over time or other continuous scale. It is commonly used to show the overall trend and distribution of data.
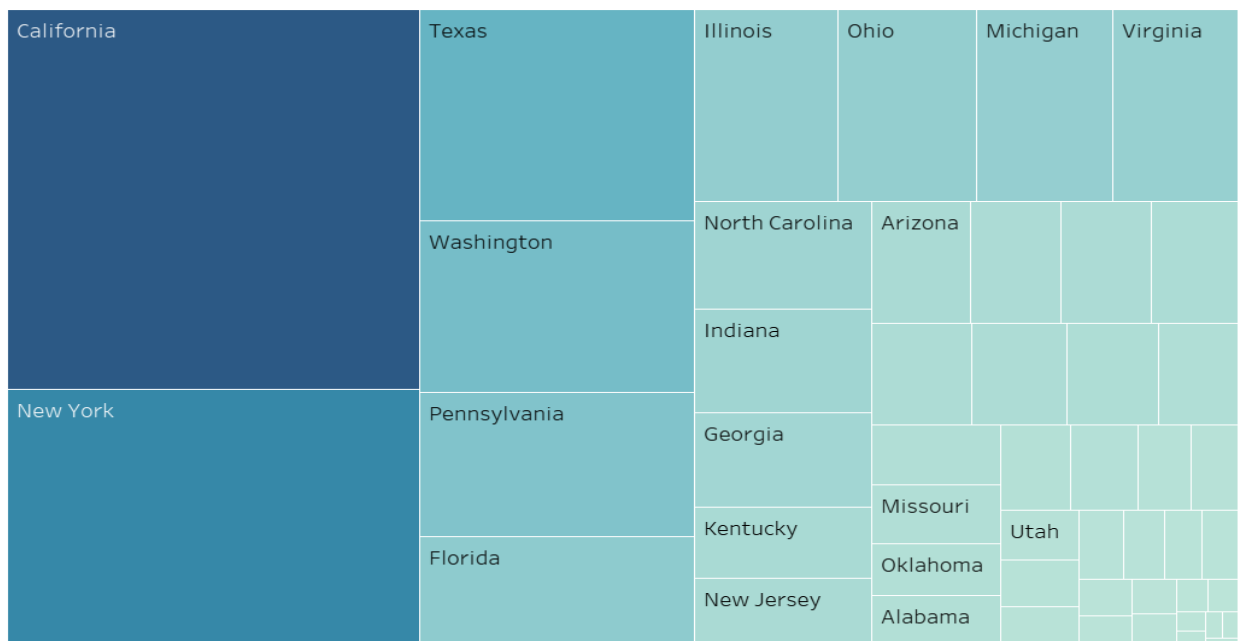
Pie chart - A pie chart displays the proportion of each category as a slice of a pie. It is commonly used to show the composition of a whole.
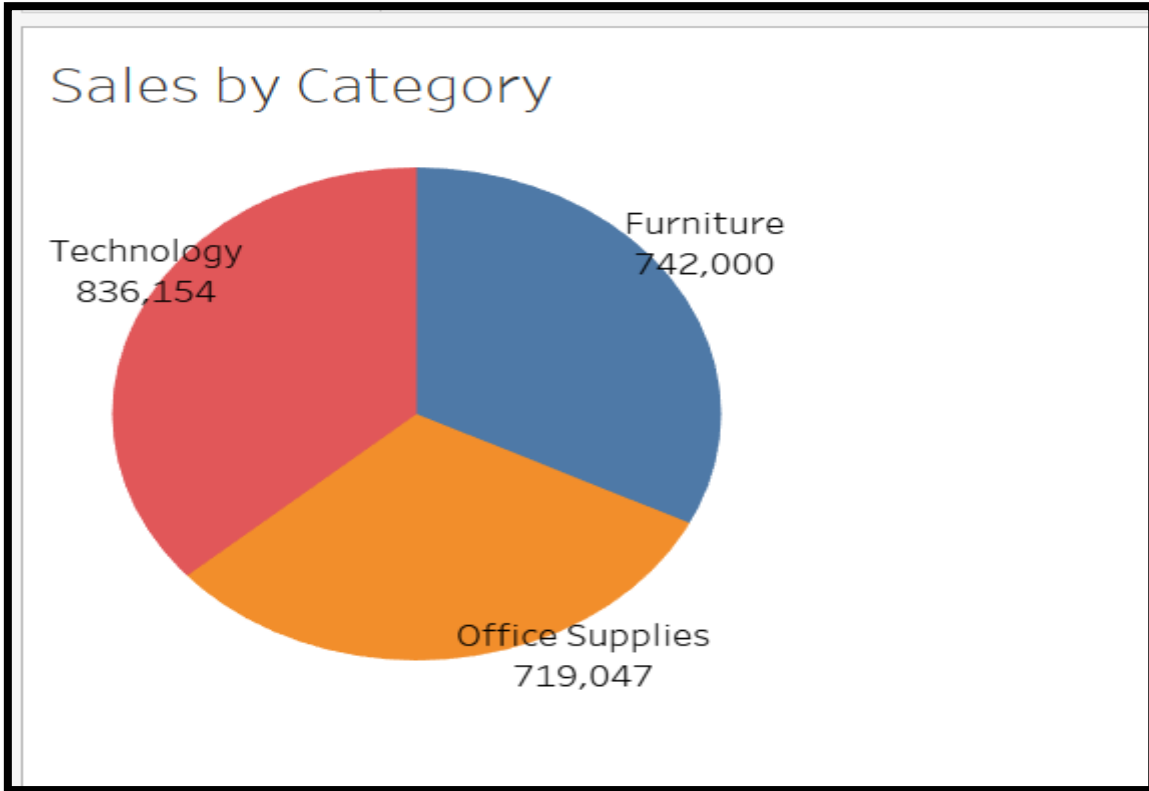
Pie Chart

Heat map - A heat map displays the density of data using color variations. It is commonly used to show the distribution of data over a geographic area or across time.

Heat Map

Treemap - A treemap displays hierarchical data using nested rectangles that are sized and colored according to the values they represent. It is commonly used to show the relative sizes of different categories within a hierarchical structure.

Tableau also provides many other chart types, including tree maps, bullet graphs, box-and-whisker plots, and more. Each chart type has its own unique strengths and weaknesses, and the choice of chart type will depend on the specific data being analyzed and the insights that need to be communicated. You can find most of them under Shoe Me in Tableau

In conclusion, Tableau is a powerful data visualization tool that provides users with a range of tools and features for creating interactive and informative visualizations. Its ability to connect to a wide range of data sources, create interactive visualizations, and create dashboards make it a popular choice for data analysts and scientists who want to create powerful and informative visualizations from their data.

2.b PowerBI

Power BI is a business analytics service by Microsoft that provides a range of tools and features for data visualization. Power BI allows users to connect to a wide range of data sources, including spreadsheets, databases, cloud-based services, and more. Once connected, users can create interactive and informative visualizations from their data using a range of tools and features.

Some of the key features of Power BI include:

Drag-and-Drop Interface: Power BI provides a drag-and-drop interface that makes it easy for users to create visualizations from their data. Users can simply drag and drop their data onto the workspace, and then customize the appearance of the visualization using a range of options.

Customizable Visualizations: Power BI provides a range of visualization options, including bar charts, line charts, scatter plots, maps, and more. Users can customize the appearance of these visualizations using a range of options, including color, font, and more.

Interactive Visualizations: Power BI allows users to create interactive visualizations that allow viewers to explore and analyze the data in more detail. Users can add filters, drill-down options, and hover-over information to their visualizations, making it easy to interact with the data.

Dashboards: Power BI allows users to create dashboards that combine multiple visualizations into a single, interactive dashboard. Users can customize the appearance of the dashboard using a range of options, and can easily share the dashboard with others.

Natural Language Query: Power BI provides a natural language query feature that allows users to ask questions about their data using natural language. Power BI then uses machine learning algorithms to provide answers to these questions in the form of visualizations.

Integration with Other Microsoft Tools: Power BI integrates with other Microsoft tools, including Excel, SharePoint, and more. This makes it easy for users to import data from these tools into Power BI, and to export visualizations and reports back to these tools.

In addition to these features, Power BI also provides a range of tools for data analysis, including data modeling, forecasting, and statistical analysis. Power BI also provides a range of deployment options, including cloud-based and on-premises solutions.

In conclusion, Power BI is a powerful data visualization tool that provides users with a range of tools and features for creating interactive and informative visualizations. Its drag-and-drop interface, customizable visualizations, and interactive features make it a popular choice for data analysts and scientists who want to create powerful and informative visualizations from their data. Its integration with other Microsoft tools, natural language query feature, and data analysis tools make it a comprehensive business analytics solution.

2.c QlikView

QlikView is a data visualization and business intelligence tool that provides users with a range of tools and features for creating interactive and informative visualizations from their

data. QlikView allows users to connect to a wide range of data sources, including spreadsheets, databases, cloud-based services, and more. Once connected, users can create dynamic and interactive visualizations using a range of tools and features.Some of the key features of QlikView include:

Associative Data Model: QlikView provides an associative data model that allows users to explore and analyze their data in a more intuitive way. Users can click on a data point in one visualization and see how that data point relates to other data points in other visualizations.

Customizable Visualizations: QlikView provides a range of visualization options, including bar charts, line charts, scatter plots, maps, and more. Users can customize the appearance of these visualizations using a range of options, including color, font, and more.

Interactive Visualizations: QlikView allows users to create interactive visualizations that allow viewers to explore and analyze the data in more detail. Users can add filters, drill-down options, and hover-over information to their visualizations, making it easy to interact with the data.

Dashboards: QlikView allows users to create dashboards that combine multiple visualizations into a single, interactive dashboard. Users can customize the appearance of the dashboard using a range of options, and can easily share the dashboard with others.

Data Exploration: QlikView provides a range of tools for exploring and analyzing data, including data profiling, data modeling, and data discovery. These tools allow users to gain insights into their data and identify patterns and trends that may not be immediately obvious from the raw data.

Collaboration: QlikView provides a range of tools for collaboration, including the ability to share dashboards and visualizations with others, and to create and participate in discussions around the data.

In addition to these features, QlikView also provides a range of tools for data analysis, including data modeling, forecasting, and statistical analysis. QlikView also provides a range of deployment options, including cloud-based and on-premises solutions.

One of the key advantages of QlikView is its associative data model. This data model allows users to explore and analyze their data in a more intuitive way, and to gain insights into the relationships between different data points. This can be particularly useful for analyzing complex data sets or for identifying patterns and trends in large data sets.

Another advantage of QlikView is its range of customization options. Users can customize the appearance of their visualizations using a range of options, and can create interactive and dynamic visualizations that allow viewers to explore and analyze the data in more detail.

QlikView is a powerful data visualization and business intelligence tool that provides users with a range of tools and features for creating interactive and informative visualizations from their data. Its associative data model, customizable visualizations, and interactive features make it a popular choice for data analysts and scientists who want to create powerful and informative visualizations from their data. Its collaboration and data analysis tools make it a comprehensive business analytics solution.

2.d Domo

Domo is a cloud-based business intelligence platform that provides a range of tools and features for data visualization and analysis. Domo is designed to help users quickly and easily create and share interactive and informative visualizations from their data. Some of the key features of Domo include:

Data Connectors: Domo provides a range of data connectors that allow users to connect to a wide range of data sources, including databases, spreadsheets, cloud-based services, and more. This makes it easy to bring all of your data into a single location for analysis and visualization.

Customizable Visualizations: Domo provides a range of visualization options, including bar charts, line charts, scatter plots, heat maps, and more. Users can customize the appearance of these visualizations using a range of options, including color, font, and more.

Interactive Visualizations: Domo allows users to create interactive visualizations that allow viewers to explore and analyze the data in more detail. Users can add filters, drill-down options, and hover-over information to their visualizations, making it easy to interact with the data.

Dashboards: Domo allows users to create dashboards that combine multiple visualizations into a single, interactive dashboard. Users can customize the appearance of the dashboard using a range of options, and can easily share the dashboard with others.

Data Exploration: Domo provides a range of tools for exploring and analyzing data, including data profiling, data modeling, and data discovery. These tools allow users to gain insights into their data and identify patterns and trends that may not be immediately obvious from the raw data.

Collaboration: Domo provides a range of tools for collaboration, including the ability to share dashboards and visualizations with others, and to create and participate in discussions around the data.

In addition to these features, Domo also provides a range of tools for data analysis, including data modeling, forecasting, and statistical analysis. Domo also provides a range of deployment options, including cloud-based and on-premises solutions.One of the key advantages of Domo is its ease of use. Domo is designed to be user-friendly and intuitive, making it easy for even non-technical users to create powerful and informative visualizations from their data. This makes it a popular choice for businesses of all sizes that want to quickly and easily gain insights from their data.

Another advantage of Domo is its range of customization options. Users can customize the appearance of their visualizations using a range of options, and can create interactive and dynamic visualizations that allow viewers to explore and analyze the data in more detail.

Domo is a powerful data visualization and business intelligence tool that provides users with a range of tools and features for creating interactive and informative visualizations from their data. Its ease of use, customization options, and interactive features make it a great option.

2.e Apptio

Apptio is a cloud-based technology business management platform that provides a range of tools for managing and analyzing IT spending and resources. One of the key features of

Apptio is its data visualization capabilities, which allow users to create interactive and informative visualizations from their data.Some of the key features of Apptio's data visualization capabilities include:

Customizable Visualizations: Apptio provides a range of visualization options, including bar charts, line charts, scatter plots, heat maps, and more. Users can customize the appearance of these visualizations using a range of options, including color, font, and more.

Interactive Visualizations: Apptio allows users to create interactive visualizations that allow viewers to explore and analyze the data in more detail. Users can add filters, drill-down options, and hover-over information to their visualizations, making it easy to interact with the data.

Dashboards: Apptio allows users to create dashboards that combine multiple visualizations into a single, interactive dashboard. Users can customize the appearance of the dashboard using a range of options, and can easily share the dashboard with others.

Data Exploration: Apptio provides a range of tools for exploring and analyzing data, including data profiling, data modeling, and data discovery. These tools allow users to gain insights into their data and identify patterns and trends that may not be immediately obvious from the raw data.

Collaboration: Apptio provides a range of tools for collaboration, including the ability to share dashboards and visualizations with others, and to create and participate in discussions around the data.

Cost Optimization: Apptio provides a range of tools for managing and optimizing IT costs, including the ability to track spending, identify areas of waste, and make recommendations for cost savings.

One of the key advantages of Apptio is its focus on IT spending and resource management. This makes it a valuable tool for IT professionals who need to manage complex IT budgets and resources. Its data visualization capabilities make it easy to identify areas of waste and inefficiency, and to make informed decisions about where to allocate resources.Another advantage of Apptio is its customizable visualizations and interactive features. This makes it easy to create informative and engaging visualizations that allow viewers to explore and analyze the data in more detail. Its collaboration and data analysis tools make it a comprehensive business analytics solution.

Apptio is a powerful technology business management platform that provides a range of tools and features for managing and analyzing IT spending and resources. Its customizable visualizations, interactive features, and cost optimization tools make it a valuable tool for IT professionals who need to manage complex IT budgets and resources. Its collaboration and data analysis tools make it a comprehensive business analytics solution.

2.f Looker
Looker is a business intelligence and data analytics platform that provides users with a range of features for analyzing and visualizing their data. One of the key features of Looker is its data visualization capabilities, which allow users to create interactive and informative visualizations from their data.
Some of the key features of Looker's data visualization capabilities include:
Customizable Visualizations: Looker provides a range of visualization options, including bar charts, line charts, scatter plots, heat maps, and more. Users can customize the

appearance of these visualizations using a range of options, including color, font, and more.

Interactive Visualizations: Looker allows users to create interactive visualizations that allow viewers to explore and analyze the data in more detail. Users can add filters, drill-down options, and hover-over information to their visualizations, making it easy to interact with the data.

Dashboards: Looker allows users to create dashboards that combine multiple visualizations into a single, interactive dashboard. Users can customize the appearance of the dashboard using a range of options, and can easily share the dashboard with others.

Data Exploration: Looker provides a range of tools for exploring and analyzing data, including data profiling, data modeling, and data discovery. These tools allow users to gain insights into their data and identify patterns and trends that may not be immediately obvious from the raw data.

Collaboration: Looker provides a range of tools for collaboration, including the ability to share dashboards and visualizations with others, and to create and participate in discussions around the data.

Embedded Analytics: Looker allows users to embed their visualizations and dashboards directly into their existing applications or workflows, making it easy to integrate with existing business processes.

One of the key advantages of Looker is its focus on data exploration and analysis. This makes it a valuable tool for data analysts and business intelligence professionals who need to gain insights into their data and identify patterns and trends. Its customizable visualizations and interactive features make it easy to create informative and engaging visualizations that allow viewers to explore and analyze the data in more detail.Another advantage of Looker is its collaboration and embedded analytics capabilities. This makes it easy to share visualizations and dashboards with others, and to integrate them directly into existing workflows and applications.

Looker is a powerful business intelligence and data analytics platform that provides a range of features for analyzing and visualizing data. Its customizable visualizations, interactive features, and embedded analytics capabilities make it a valuable tool for data analysts and business intelligence professionals who need to gain insights into their data and identify patterns and trends. Its collaboration tools make it easy to share visualizations and dashboards with others, and to integrate them directly into existing workflows and applications.

2.f Google Data Studio

Google Data Studio is a free data visualization tool that allows users to create interactive dashboards and reports from a variety of data sources. It is part of the Google Marketing Platform, which provides a range of tools for digital marketers.

Google Data Studio allows users to connect to a wide range of data sources, including Google Analytics, Google Ads, YouTube, and more. It also allows users to connect to non-Google data sources, such as databases, spreadsheets, and cloud-based services like BigQuery.Once connected to a data source, users can create customizable visualizations, such as bar charts, line charts, scatter plots, heat maps, and more. They can also create tables, pivot tables, and other data tables, and add text and images to their reports.

One of the key advantages of Google Data Studio is its ability to create interactive dashboards. Users can add filters, date range selectors, and other interactive elements to their dashboards, allowing viewers to explore and analyze the data in more detail. Users can also set up alerts and notifications to be notified of important changes in their data.Another advantage of Google Data Studio is its collaboration features. Users can share their reports and dashboards with others, and set up permissions to control who can view and edit the data. They can also add comments and notes to their reports, and use the built-in chat feature to collaborate in real-time.

Google Data Studio also provides a range of customization options, allowing users to create reports that match their branding and style. Users can choose from a range of themes, fonts, and colors, and can even create their own custom themes using CSS.

In conclusion, Google Data Studio is a powerful data visualization tool that allows users to create interactive dashboards and reports from a variety of data sources. Its ability to connect to a wide range of data sources, create customizable visualizations, and provide collaboration features make it a valuable tool for marketers, data analysts, and other professionals who need to gain insights from their data. Plus, being free, it makes it accessible to a wider range of users who want to explore data visualization.

Data Preparation

Data preparation is an important aspect for any visualization tool and helps visualization tool architecture and framework to improve the performance by doing data related transformation outside of the visualization or before feeding the data to visualization tool. There are many ways to accomplish this.

- Martialized View or Analytics Table
- Visualization Tool's Data Prep
- Alteryx

Martialized view or analytics table

Data transformation can be done at database side by creating a materialized view on top of underlying tables and have that materialized view updated automatically. Or same can be done by creating database stored procedure or package to do the transformation and push the result data to a analytics table.

This stored procedure and package can be automated by a scheduling tool for daily updates from underlying table. This approach has a dependency on IT teams and may slow down the analytics teams who need the data for visualizations.

Visualization Tool's Data Prep

Most of the Visualization tools have data prep capabilities in-built in visualization tools. Domo and Tableau both of these capabilities and can connect to most of the databases, APIS and other data storges to get the data, transform it and push it to tool itself for visualization.

Tableau data prep is very popular to use for data transformation for tableau and ia very powerful and easy to use tool. It blends great with Tableau server and can run with the server.

Alteryx

Alteryx is a modern, predictive modeling, data prep and ETL tool and used widely for data prep in addition of visualization tools. Alteryx can improve data prep and data transformation drastically for any organizations. It has the ability to connect to most of the available databases in market, Cloud based DB, APIs, Big Data technology and many file systems.

Conclusion

In conclusion, data visualization is a crucial tool for organizations and individuals to make sense of their data. It allows them to present complex data in a clear, concise, and visually appealing manner, making it easier to identify patterns, trends, and insights.

Regardless of the tool used, it is important to keep in mind that data visualization is more than just creating pretty charts and graphs. It involves understanding the data, selecting the appropriate visualization type, and designing the visualization in a way that effectively communicates the key insights.

Ultimately, effective data visualization is about telling a story with data. By presenting data in a compelling and visually appealing way, data visualization can help organizations and individuals make informed decisions, drive growth and innovation, and create value.