

DVBI - Data Visualization and BI Using Tableau

Overview

We are constantly faced with a vast amount of complex information – often more than we can handle. Well-designed visual interpretations of data improve comprehension, communication, and decision-making.

This course introduces data methods and techniques that increase the understanding of complex data. The focus is on conveying ideas effectively with visually appealing charts, graphs and maps.

Participants will learn to craft clear, meaningful pictures of complex statistics and publicly available data through the creation of effective graphs and charts.

In addition, participants will learn how to use Tableau the number one Business Intelligence tool on the market today. Tableau is business intelligence software that allows anyone to easily connect to data, then visualize and create interactive, sharable dashboards. It's easy enough that any Excel user can learn it, but powerful enough to satisfy the most complex analytical problems. .

Tableau helps anyone quickly analyze, visualize and share information

Objectives

- Apply critical thinking to visualization work
- Practice reading and interpreting charts
- Identify story angles in data
- Assess the use of chart types
- Make appropriate design choices
- Practice developing design concept solutions for given situations
- Explain how data visualization helps in the analysis and understanding of complex data
- Connect to your data.
- Understand Tableau terminology.
- Use the Tableau interface / paradigm to effectively create powerful visualizations.
- Create basic calculations
- Represent your data using various visualization types
- Use statistical techniques to describe your data.
- Use groups, bins, hierarchies, sorts, sets, and filters to create focused and effective visualizations.
- Use Measure Name and Measure Value fields to create visualizations with multiple measures and dimensions.
- Share your visualizations with others.
- Combine your visualizations into interactive dashboards and publish them to the web.

Duration

Course Duration: **4 days**

Pre-requisites

None

Course Outline:

The Context of Data Visualization

- The data visualization methodology
- Visualization design objectives
- The interaction of form and function
- Justifying design selections
- Creating accessibility
- Ethics
- The "eight hats" of data visualization design

Setting the Purpose and Identifying Key Factors

- Clarifying the purpose of your project
- Establishing intent – the visualization's function (explain, explore, exhibit, entertain)
- Establishing tone
- The importance of editorial focus
- Preparing and familiarizing yourself with your data
- Using visual analysis to find stories

Visualization Design Options

The visualization anatomy – data representation

- Choosing the correct visualization method
- Considering the physical properties of our data
- Determining the degree of accuracy in interpretation
- Creating an appropriate design metaphor
- Choosing the final solution

The visualization anatomy – data presentation

- The use of color
- Creating interactivity
- Annotation
- Arrangement

Data visualization methods, choosing the appropriate chart type

- Comparing categories (Dot plot, Bar chart)
- Assessing hierarchies and part-to-whole relationships (pie chart, stacked bar chart)
- Showing changes over time (sparklines, area charts)

- Plotting connections and relationships (Scatter plot, heat map)
- Mapping Geo-spatial data (Choropleth, dot lot map)

Creating Basic Visualizations

- Getting Started in Tableau Desktop
- Elements of a Visualization
- Formatting Your View

Simplifying and Sorting Your Data

- Data Filtering
- Sorting

Organizing your Data

- Using Groups
- Creating and Using Hierarchies
- Creating a Combined Field
- Using Sets

Slicing your Data by Date

- Working with Dates
- Using Discrete Date Parts
- Creating Date Filters
- Defining a Fiscal Year
- Creating Custom Dates

Using Multiple Measures on the Same Axis

- Comparing Views with Multiple Measures
- Using Measure Values and Measure Names
- Combo Charts
- Combined or Shared Axis Charts
- Creating Dual Axis Charts

Showing the Relationship between Numerical Values

- Options for Showing Numerical Relationships
- Creating Scatter Plots
- Creating Heat Maps

Mapping Data Geographically

- Mapping in Tableau
- Geographic Mapping

Viewing Distributions

- Bins and Histograms

Viewing Specific Values

- Creating Crosstabs
- Creating Highlight Tables

- Grand Totals, Sub-totals, and Changing Aggregation

Customizing your Data

- Calculation Types
- Creating Calculated Fields
- Using Logic Statements
- Type Conversions and Date Calculations
- Using Quick Table Calculations
- Calculations and Aggregations

Showing Breakdowns of the Whole

- Pie Charts and Parts of the Whole
- Creating Tree Maps

Highlighting Data with Reference Lines

- Using Reference Lines and Reference Bands

Showing Data History

- Creating Motion Charts