

Data Analytics with Tableau

COURSE OBJECTIVE

- Fundamentals of Business Intelligence, including data integration, processing, and presentation
- Gain proficiency in using Tableau for data visualization and analysis.
- Learn how to extract data from databases and perform CRUD operations using SQL.
- Learn how to clean & prepare the data with Tableau prep builder
- Explore the architecture of Tableau and understand its interface, field types, and data source management
- Develop skills in creating various types of visualizations and charts using Tableau
- Learn advanced techniques such as data blending, advanced data manipulations, filtering, and creating interactive dashboards and stories using Tableau.

COURSE OUTCOMES	
On completion of the course, students will be able to:	
CO1 :	Learn about basics of business intelligence, data extraction & data analysis, you will also become proficient in interface of different tableau products
CO2 :	Data preparation Skills : With the help of tableau prep builder you will understand how to clean and prepare the raw data, so that it can be used for gaining insights
CO3 :	Data Visualization skills: you will learn how to create different data visualizations and customize them. you will also learn how to gain insights from different data visualizations
CO4 :	Data manipulation skills: you will learn how to manipulate data, apply different filters and parameters to get the desired output
CO5 :	Dashboard and Analytics Skills: you will learn how to create custom interactive dashboards with tableau to analyze data, gain insights, and track key performance metrics, enabling data-driven decision-making.

UNIT-I	Introduction to BI & Tableau	08 Hours
Understand the concept of Business Intelligence - Explain the process of data integration, processing, and presentation - Familiarize with ETL (Extract, Transform, Load) architecture - Gain an introduction to data analytics and its types - Understand descriptive, diagnostic, predictive, and prescriptive analytics-Explore the applications of analytics in business.		
Introduction to Tableau :		
Introduction to tableau-Overview & Features-Connecting Tableau to Data Sources -Working with Flat files-Connecting spreadsheets		

Data Extraction:

Understand the fundamentals of databases and their role in data management - Learn how to create databases and tables for data storage - Develop skills in performing CRUD (Create, Read, Update, Delete) operations on database tables - Gain a basic understanding of SQL operations for data extraction and manipulation

Architecture of Tableau :

Gain knowledge of the architecture of Tableau and how it functions - Explore the interface of Tableau, including layout, toolbars, data pane, and analytics pane - Understand different Tableau field types and their usage - Learn how to save and publish data sources in Tableau - Differentiate between live and extract connections in Tableau - Explore various file types and ways to share and export work done in Tableau

UNIT-II	Tableau Prep Builder	05 hours
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What is Tableau Prep ? - Installing Tableau Prep- Tableau Prep Interface - Basics of Data Preparation - Connecting to Data

Creating Data Flows:

The Input Step - The profile pane - The cleaning step - Group & replace - The output step - The pivot step & calculated fields - The aggregate step - The union step - The join step

UNIT-III	Data Visualization & Data Blending	05 hours
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Understand different chart types for data visualization, including histograms, box plots, pie charts, bar charts, line charts, bubble charts, bullet charts, scatter plots, tree maps, heat maps, maps, text tables, and highlighted tables - Learn how to create effective visualizations using Tableau

Working with Metadata & Data Blending:

Connect to different data sources in Tableau - Gain an understanding of Tableau data types - Learn how to connect to Excel, cubes, and PDFs in Tableau - Manage metadata and extracts in Tableau.- Master joining techniques such as left, right, inner, and outer joins, as well as union operations - Explore data blending and data preparation techniques in Tableau

UNIT-IV	Advanced Data Manipulations & Filters	08 hours
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Learn advanced techniques for marking and highlighting data points - Understand how to group data and create sets in Tableau - Explore bins, hierarchies, and sorting options in Tableau - Utilize the formatting pane for menu, font, alignment, and other settings - Edit axes and annotations in Tableau

Working with Filters, Organizing Data & Visual Analytics :

Gain proficiency in working with filters in Tableau - Learn different types of filters and how to add or remove them - Explore filtering techniques for continuous dates, dimensions, and measures - Understand the order of operations in filtering data - Learn techniques for organizing data and conducting visual analytics in Tableau.

Working With Mapping ,Calculations and Expressions :

Gain proficiency in working with filters in Tableau - Learn different types of filters and how to add or remove them - Explore filtering techniques for continuous dates, dimensions, and

measures - Understand the order of operations in filtering data - Learn techniques for organizing data and conducting visual analytics in Tableau

Working With Mapping ,Calculations and Expressions :

Work with coordinate points and plot longitude and latitude data on maps in Tableau -Edit unrecognized locations and work with background images in Tableau - Understand map visualization and custom territories in Tableau - Learn calculation syntax and functions in Tableau. - Create calculated fields and utilize quick table calculations

Working with Parameters :

Gain knowledge of creating parameters in Tableau - Understand how to use parameters in calculations - Learn how to incorporate parameters with filters in Tableau

UNIT-V	Dashboards & Stories	04 hours
Build and format interactive dashboards using Tableau, incorporating various elements such as size, objects, views, filters, and legends - Apply best practices for creating visually appealing and engaging dashboards that effectively convey insights and support decision-making - Understand the concept of story points in Tableau and utilize them to create compelling data narratives - Create and update story points, combining visualizations, annotations, and descriptions to tell a coherent data story - Enhance stories and dashboards with catchy visuals and captivating design elements - Implement actions in dashboards, including highlight actions, URL actions, and filter actions, to enhance interactivity and user experience - Learn techniques for selecting and clearing values within dashboards - Explore dashboard examples using Tableau workspace and interface, gaining practical insights into effective dashboard design and layout		

Total: 30 Sessions

REFERENCE		
1	What is Tableau ?	https://www.tableau.com/why-tableau/what-is-tableau
2	Download Tableau Desktop	https://www.tableau.com/products/new-features/desktop
3	Cert Prep: Tableau Data Analyst	https://www.tableau.com/learn/certification/tableau-certified-data-analyst-exam-guide

SOFTWARE REQUIREMENT
<ul style="list-style-type: none"> ● Machine with 2 installed web browsers ● Min 30 Mbps Internet speed

HARDWARE REQUIREMENT
<ul style="list-style-type: none"> ● Windows 8+, Linux 8+, Mac 10+ ● Operating system with 8 GB RAM