

TABLEAU BASICS

Tableau is a **business intelligence software** that visually represents data from varied sources to create interactive and shareable dashboards.

Different Tableau products:

- **Tableau Desktop:** Desktop product is used to create optimized queries out from pictures of data. Once the queries are ready, you can perform those queries without the need to code. Tableau desktop encompasses data from various sources into its data engine and creates an interactive dashboard.
- **Tableau Server:** When you have published dashboards using Tableau Desktop, Tableau servers help in sharing them throughout the organization. It is an enterprise-level feature that is installed on a Windows or Linux server.
- **Tableau Reader:** Tableau Reader is a free feature available on Desktop that lets you open and views data visualizations. You can filter or drill down the data but restricts editing any formulas or performing any kind of actions on it. It is also used to extract connection files.
- **Tableau Online:** Tableau online is also a paid feature but doesn't need exclusive installation. It comes with the software and is used to share the published dashboards anywhere and everywhere.
- **Tableau Public:** Tableau public is yet another free feature to view your data visualizations by saving them as worksheets or workbooks on Tableau Server.

Tableau Desktop

There are **two types of data connections** in Tableau:

LIVE: Live connection is a dynamic way to extract real-time data by directly connecting to the data source. Tableau directly creates queries against the database entries and retrieves the query results in a workbook.

EXTRACT: A snapshot of the data, extract the file (.tde or .hyper file) contains data from a relational database. The data is extracted from a static source of data like an Excel Spreadsheet. You can schedule to refresh the snapshots which are done using the Tableau server. This doesn't need any connection with the database.

The **supported file extensions** used in Tableau Desktop are:

- **Tableau Workbook (TWB):** contains all worksheets, story points, dashboards, etc.

- **Tableau Data Source (TDS):** contains connection information and metadata about your data source
- **Tableau Data Extract (TDE):** contains data that has been extracted from other data sources.
- **Tableau Packaged Workbook (TWBX):** contains a combination of the workbook, connection data, and metadata, and the data itself in the form of TDE. It can be zipped and shared.
- **Tableau Packaged Data Source (TDSX):** contains a combination of different files.

The supported data types in Tableau

- The following data types are supported in Tableau:

Data Type	Possible Values
Boolean	True/False
Date	Date Value (January 1, 2022)
Date & Time	Date & Timestamp values (January 1, 2022 02:00:00 PM)
Geographical Values	Geographical Mapping (Delhi, Mumbai)
Text/String	Text/String("LEARNING TABLEAU")
Number	Decimal (8.00)
Number	Whole Number (5)

SHELVES IN TABLEAU

Tableau worksheets contain various named elements like columns, rows, marks, filters, pages, etc. which are called shelves. You can place fields on shelves to create visualizations, increase the level of detail, or add context to it

MEASURES AND DIMENSIONS

In Tableau, when we **connect to a new data source**, each field in the data source is either mapped as **measures** or **dimensions**. These fields are the columns defined in the data source. Each field is assigned a data Type (integer, string, etc.) and a role (discrete dimension or continuous measure).

Measures contain **numeric values** that are analysed by a dimension table. Measures are stored in a table that allows storage of multiple records and contains foreign keys referring uniquely to the associated dimension tables.

While Dimensions contain **qualitative values** (name, dates, geographical data) to define comprehensive attributes to categorize, segment, and reveal the data details

CONTINUOUS AND DISCRETE

Tableau's specialty lies in displaying data differently either in continuous format or discrete. Both of them are mathematical terms used to define data where continuous means without interruptions and discrete means are individually separate and distinct.

While the blue color indicates discrete behaviour, the green color indicates continuous behaviour. On one hand, the discrete view defines the headers and can be easily sorted, while continuous defines the axis in a graph view and cannot be sorted.