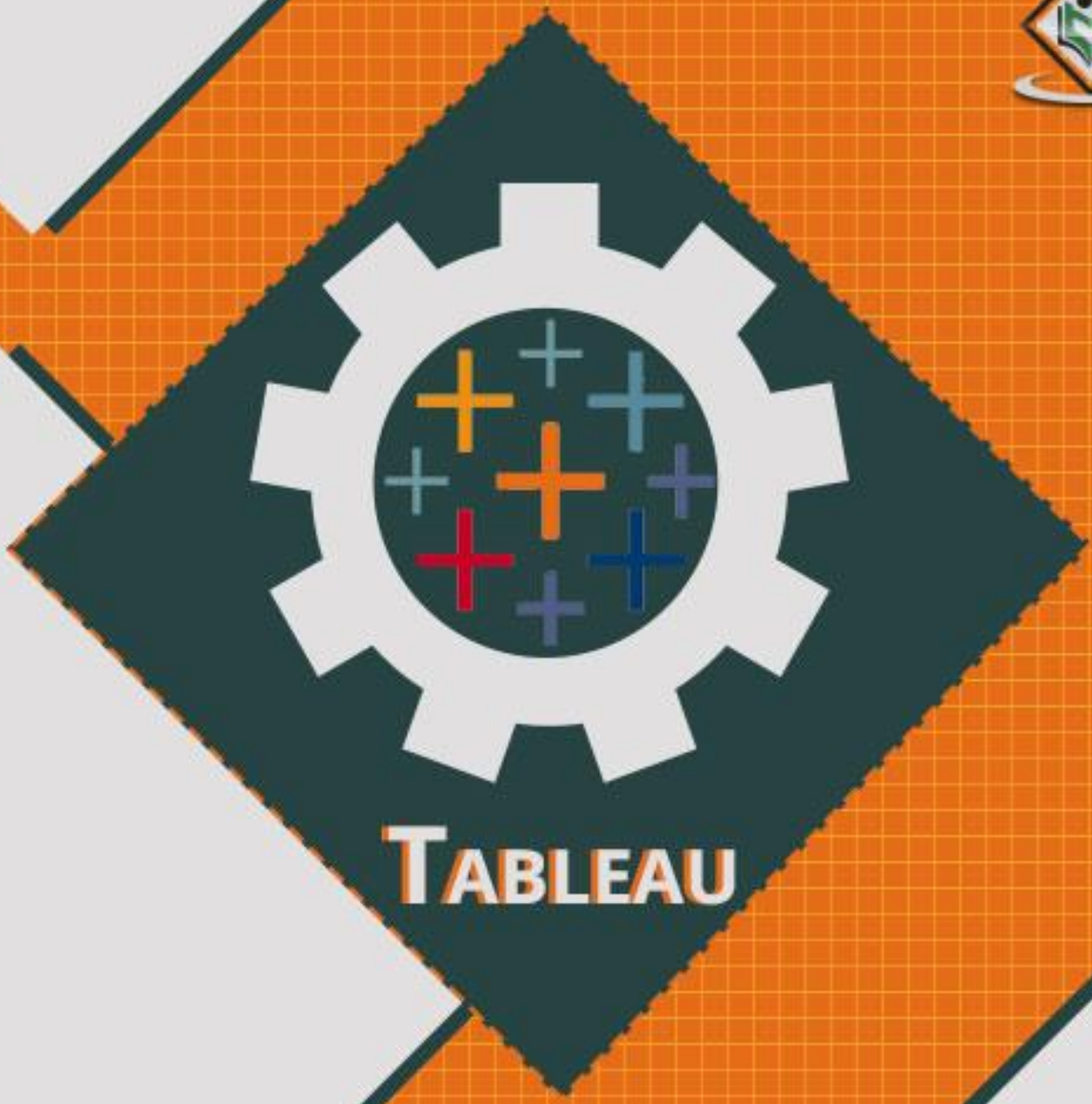

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About the Tutorial

Tableau is a Business Intelligence tool for visually analyzing the data. Users can create and distribute an interactive and shareable dashboard, which depict the trends, variations, and density of the data in the form of graphs and charts.

Tableau can connect to files, relational and Big Data sources to acquire and process data. The software allows data blending and real-time collaboration, which makes it very unique. It is used by businesses, academic researchers, and many government organizations for visual data analysis. It is also positioned as a leader Business Intelligence and Analytics Platform in Gartner Magic Quadrant.

Audience

This tutorial is designed for all those readers who want to create, read, write, and modify Business Intelligence Reports using Tableau. In addition, it will also be quite useful for those readers who would like to become a Data Analyst or a Data Scientist.

Prerequisites

Before proceeding with this tutorial, you should have a basic understanding of Computer Programming terminologies and Data analysis. You should also have some knowledge on various types of graphs and charts. Familiarity with SQL will be an added advantage.

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Tableau – Basics

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1. Tableau – Overview

As a leading data visualization tool, Tableau has many desirable and unique features. Its powerful data discovery and exploration application allows you to answer important questions in seconds. You can use Tableau's drag and drop interface to visualize any data, explore different views, and even combine multiple databases easily. It does not require any complex scripting. Anyone who understands the business problems can address it with a visualization of the relevant data. After analysis, sharing with others is as easy as publishing to Tableau Server.

Tableau Features

Tableau provides solutions for all kinds of industries, departments, and data environments. Following are some unique features which enable Tableau to handle diverse scenarios.

- **Speed of Analysis:** As it does not require high level of programming expertise, any user with access to data can start using it to derive value from the data.

- **Self-Reliant:** Tableau does not need a complex software setup. The desktop version which is used by most users is easily installed and contains all the features needed to start and complete data analysis.

- **Visual Discovery**: The user explores and analyzes the data by using visual tools like colors, trend lines, charts, and graphs. There is very little script to be written as nearly everything is done by drag and drop.

- **Blend Diverse Data Sets:** Tableau allows you to blend different relational, semi-structured and raw data sources in real time, without expensive up-front integration costs. The users don't need to know the details of how data is stored.

- **Architecture Agnostic**: Tableau works in all kinds of devices where data flows. Hence, the user need not worry about specific hardware or software requirements to use Tableau.

- **Real-Time Collaboration**: Tableau can filter, sort, and discuss data on the fly and embed a live dashboard in portals like SharePoint site or Salesforce. You can save your view of data and allow colleagues to subscribe to your interactive dashboards so they see the very latest data just by refreshing their web browser.

- **Centralized Data**: Tableau server provides a centralized location to manage all of the organization's published data sources. You can delete, change permissions, add tags, and manage schedules in one convenient location. It's easy to schedule extract refreshes and manage them in the data server. Administrators can centrally define a schedule for extracts on the server for both incremental and full refreshes.

2. Tableau – Environment Setup

In this chapter, you will learn about the environment setup of Tableau.

Download Tableau Desktop

The Free Personal Edition of Tableau Desktop can be downloaded from Tableau Desktop. You need to register with your details to be able to download.

After downloading, the installation is a very straightforward process in which you need to accept the license agreement and provide the target folder for installation. The following steps and screenshots describe the entire setup process.

Start the Installation Wizard

Double-click the **TableauDesktop-64bit-9-2-2.exe.** It will present a screen to allow the installation program to run. Click "Run".

Accept the License Agreement

Read the license agreement and if you agree, choose the "I have read and accept the terms of this license agreement" option. Then, click "Install".

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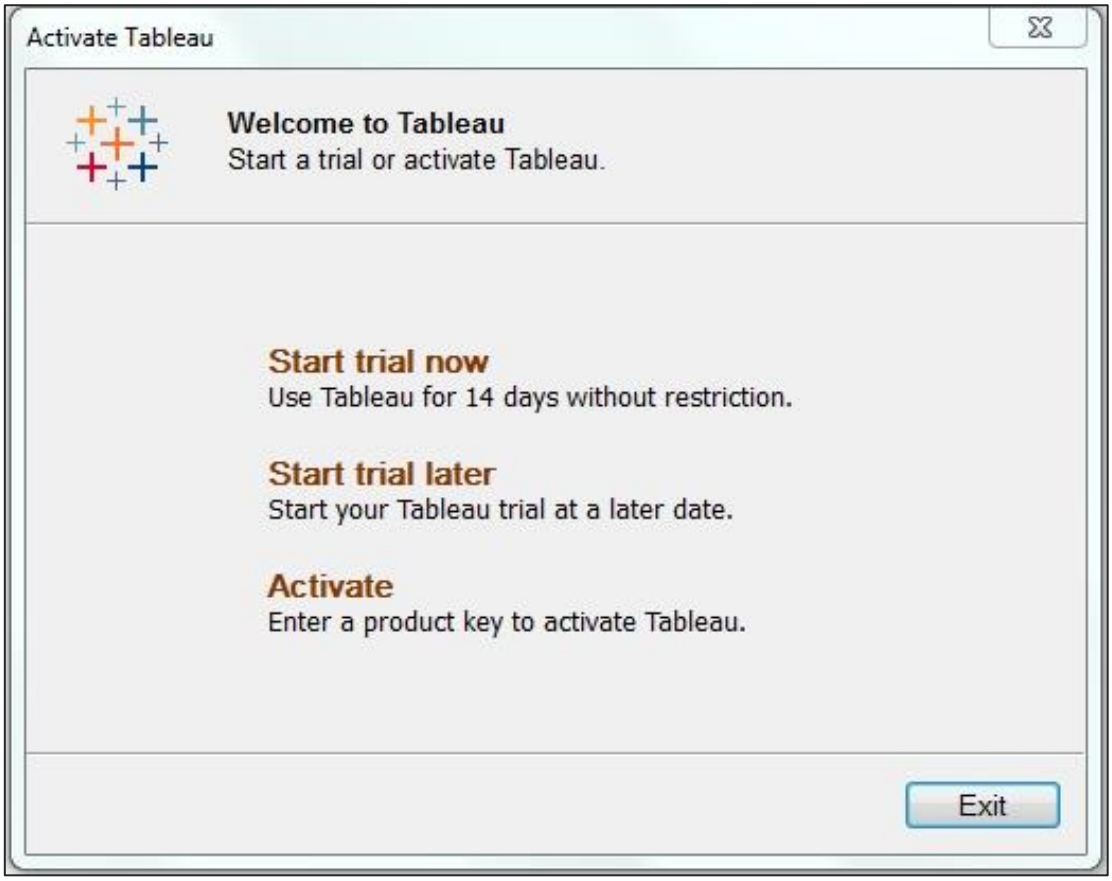
Start Trial

On completion of the installation, the screen prompts you with the option to Start the trial now or later. You may choose to start it now. Also, if you have purchased Tableau then you may enter the License key.



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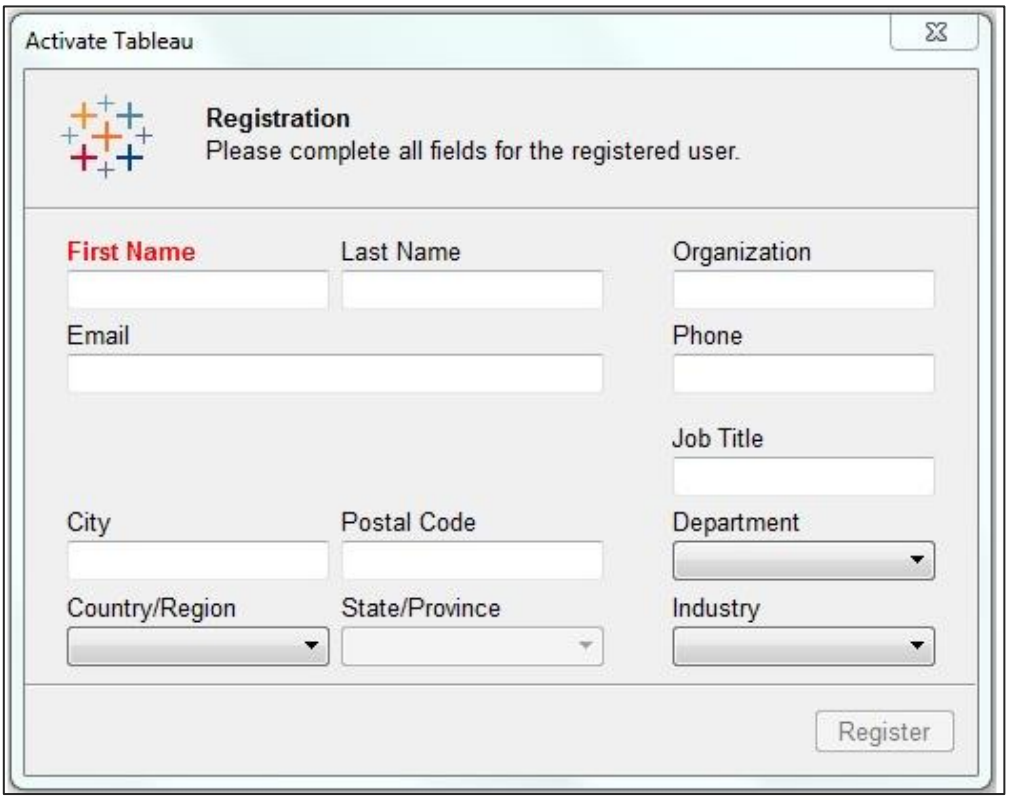
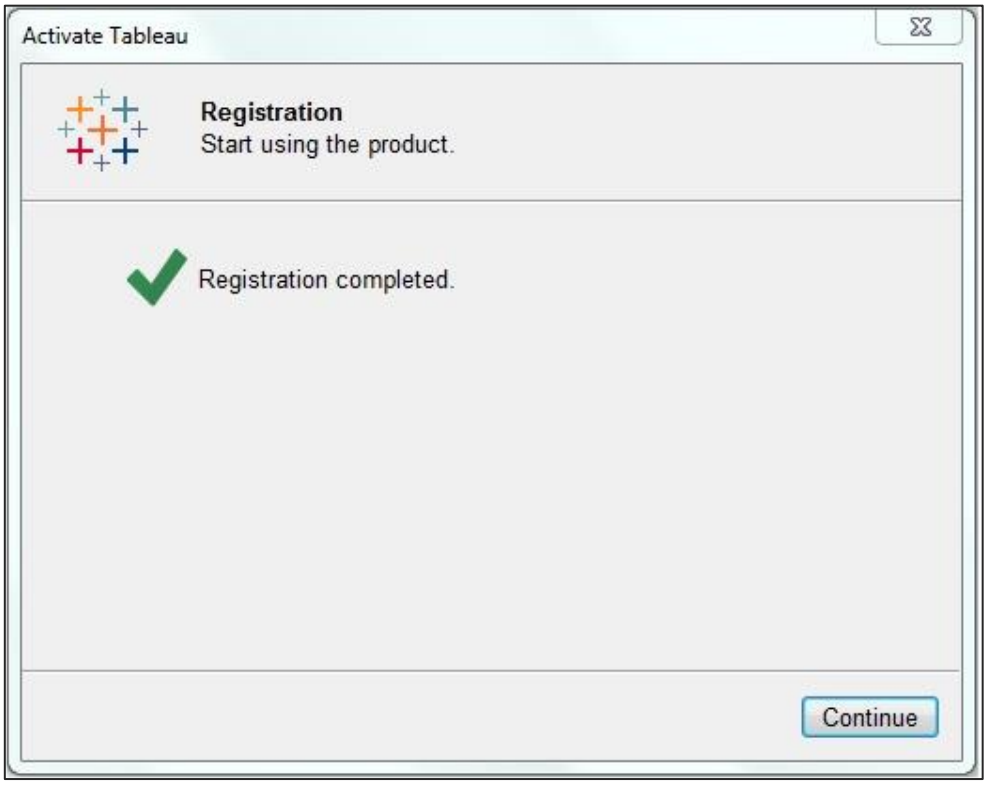
Provide Your Details

Provide your name and organization details. Then, click "Next".



Registration Complete

The registration completion screen appears. Click "Continue".



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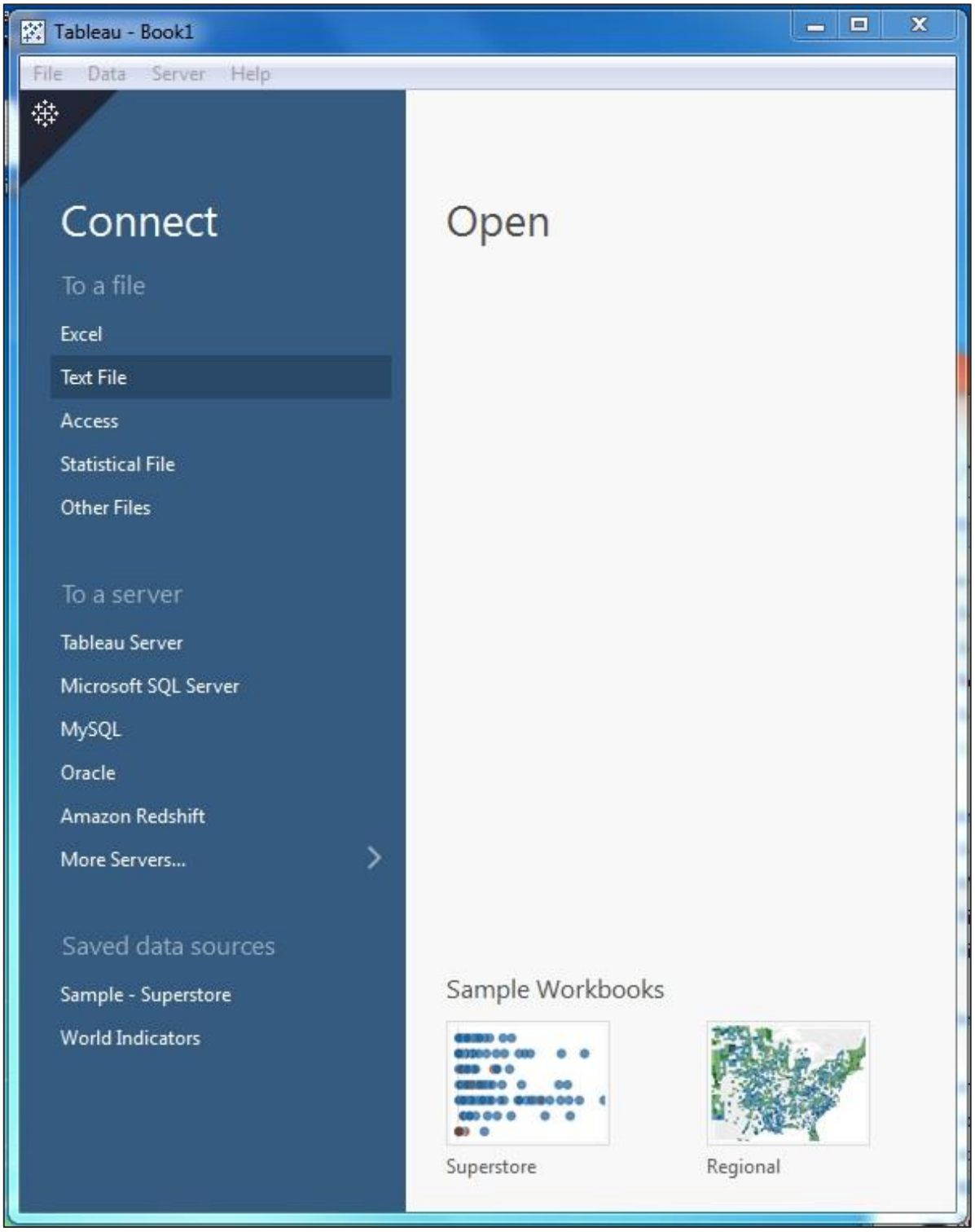
Verify the Installation

You can verify the installation by going to the Windows start menu. Click the Tableau icon. The following screen appears.



You are now ready to learn Tableau.

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3. Tableau – Get Started

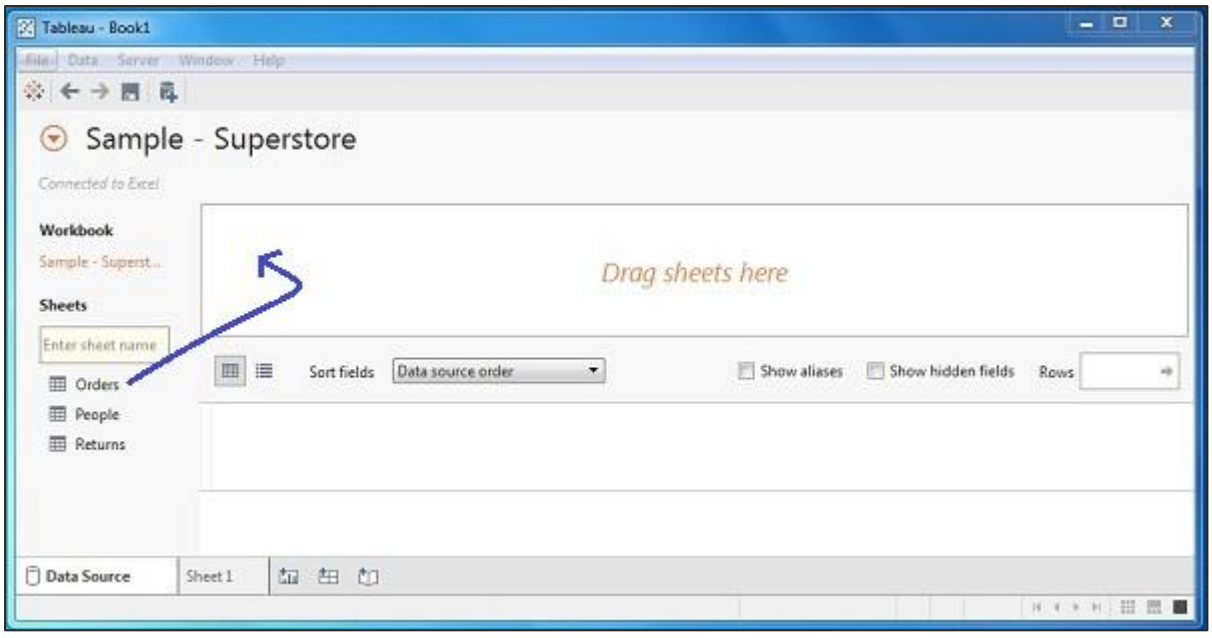
In this chapter, you will learn some basic operations in Tableau to get acquainted with its interface. There are three basic steps involved in creating any Tableau data analysis report. These three steps are:

- **Connect to a data source**: It involves locating the data and using an appropriate type of connection to read the data.
- **Choose dimensions and measures**: This involves selecting the required columns from the source data for analysis.
- **Apply visualization technique**: This involves applying required visualization methods, such as a specific chart or graph type to the data being analyzed.

For convenience, let's use the sample data set that comes with Tableau installation named sample – superstore.xls. Locate the installation folder of Tableau and go to **My Tableau Repository**. Under it, you will find the above file at **Datasources\9.2\en_US-US**.

Connect to a Data Source

On opening Tableau, you will get the start page showing various data sources. Under the header "**Connect**", you have options to choose a file or server or saved data source. Under Files, choose excel. Then navigate to the file "**Sample – Superstore.xls**" as mentioned above. The excel file has three sheets named Orders, People and Returns. Choose **Orders**.



Choose the Dimensions and Measures

Next, choose the data to be analyzed by deciding on the dimensions and measures. Dimensions are the descriptive data while measures are numeric data. When put together, they help visualize the performance of the dimensional data with respect to the data which

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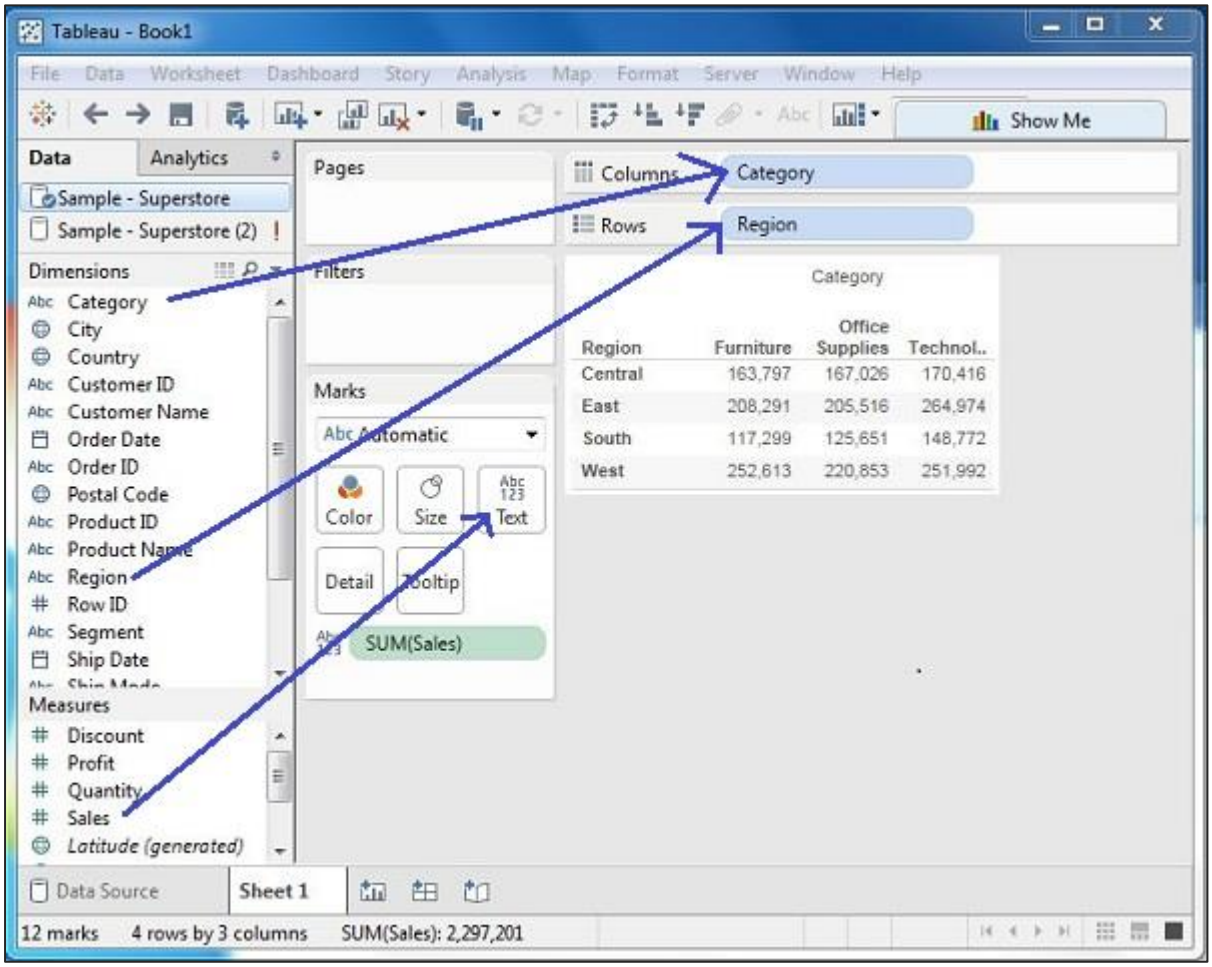
are measures. Choose **Category** and **Region** as the dimensions and **Sales** as the measure. Drag and drop them as shown in the following screenshot. The result shows the total sales in each category for each region.



Apply Visualization Technique

In the previous step, you can see that the data is available only as numbers. You have to read and calculate each of the values to judge the performance. However, you can see them as graphs or charts with different colors to make a quicker judgment.

We drag and drop the sum (sales) column from the Marks tab to the Columns shelf. The table showing the numeric values of sales now turns into a bar chart automatically.

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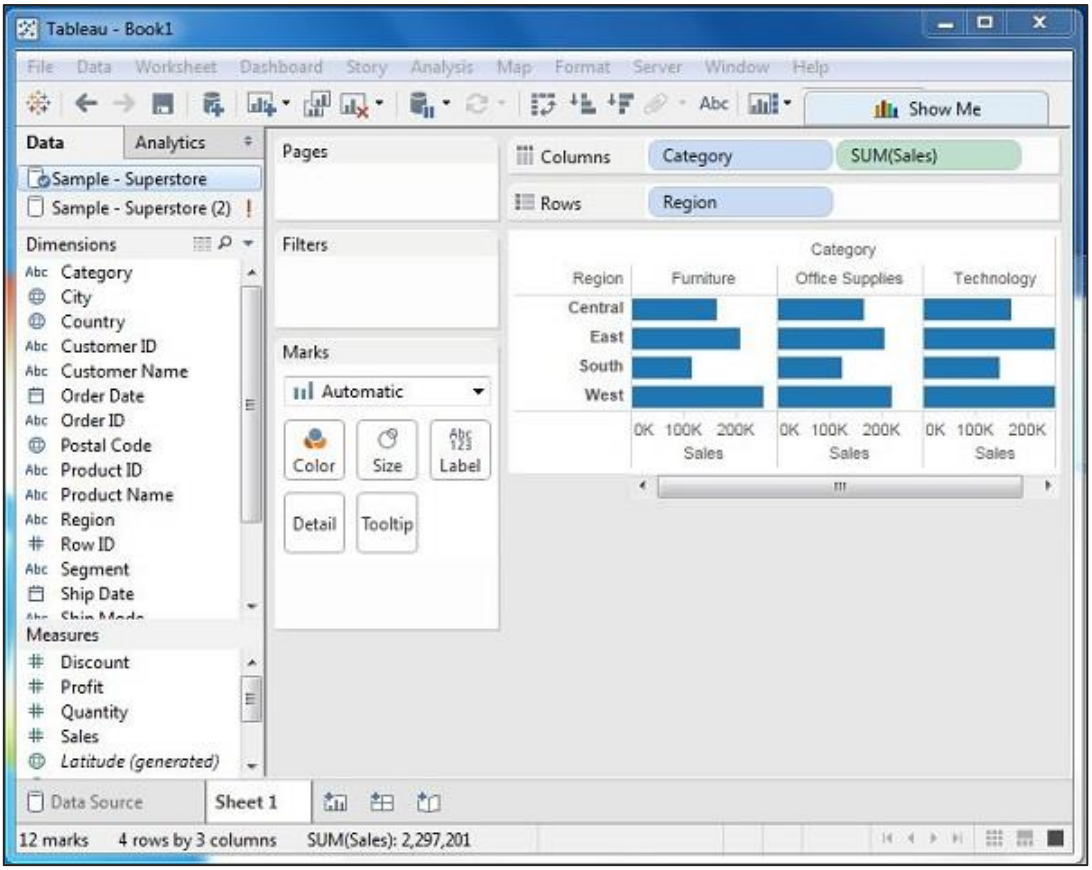
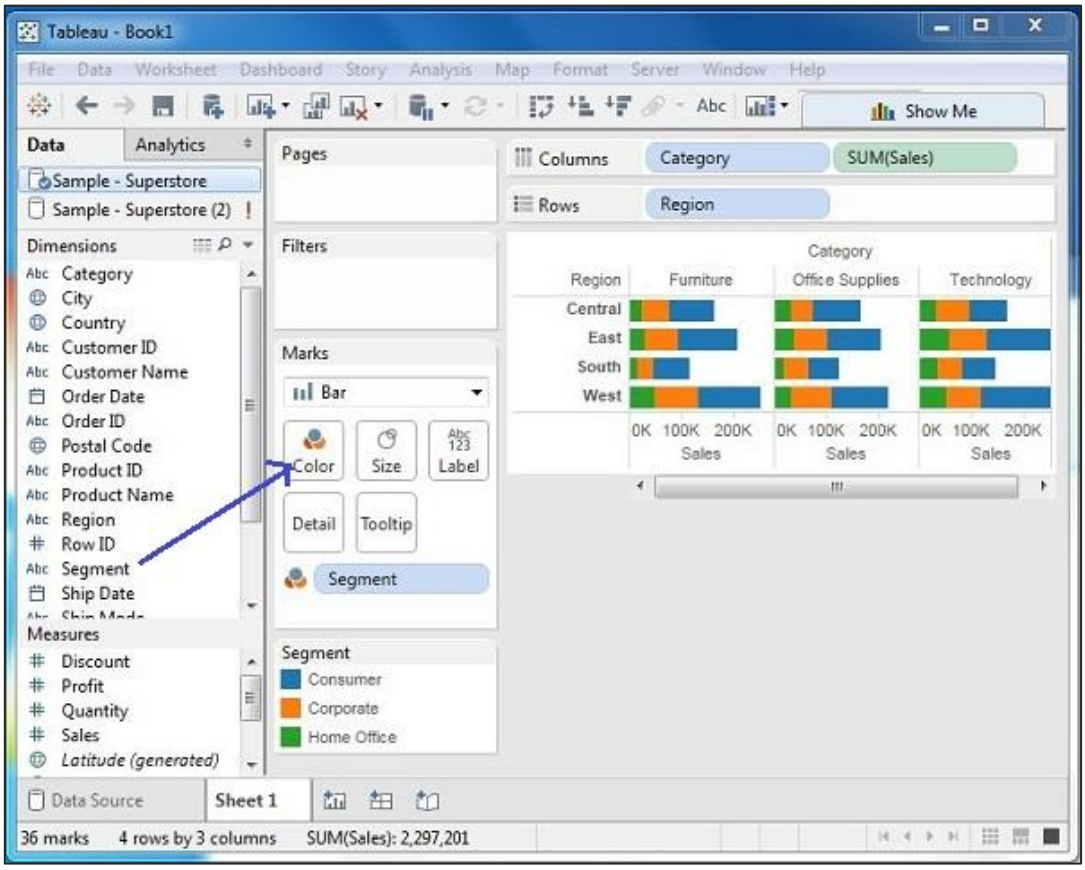


You can apply a technique of adding another dimension to the existing data. This will add more colors to the existing bar chart as shown in the following screenshot.



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