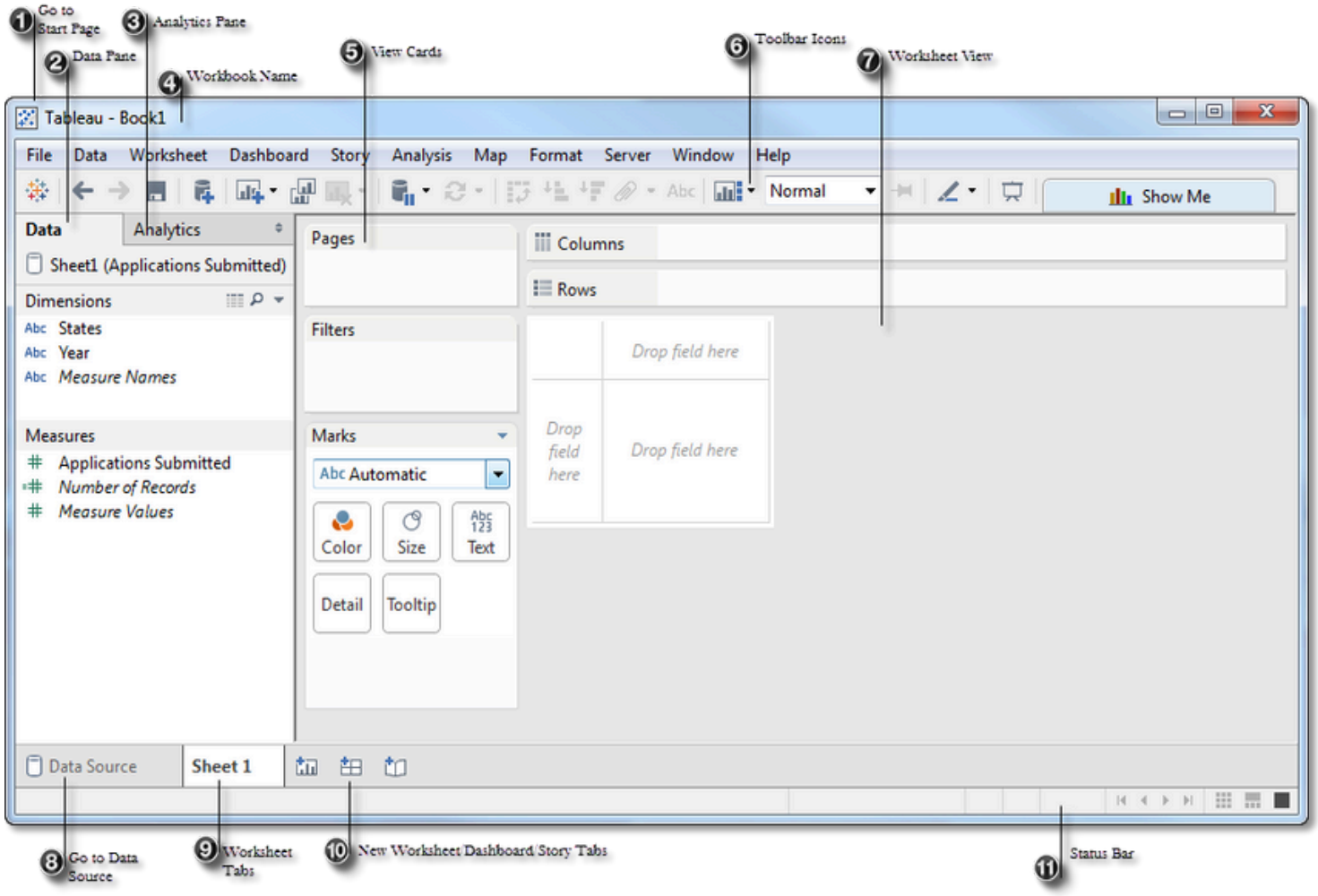
Application Terminology

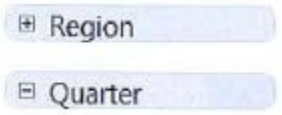


1. **Go to Start Page**: Toggle between the active sheet and the Desktop Start Page.
2. **Data Pane**: Includes dimensions and measures, populated from your selected data source. May also include calculated fields, parameters, or sets.
3. **Analytics Pane**: Includes options you can use to apply reference lines, forecasts, trend lines, to add totals to crosstabs, and to build boxplots.
4. **Workbook Name**: The file name of our workbook.
5. **View Cards**: Used for modifying the worksheet.
6. **Toolbar Icons**: Icons are available for quick access to popular features.
7. **Worksheet/View**: Workspace for building your visualizations.
8. **Go to Data Source**: Returns you to the data source specification page.
9. **Worksheet Tabs**: Click to view a specific worksheet, dashboard, or story
10. **New Worksheet, Dashboard, and Story Tabs**: Click to create a new Worksheet, Dashboard, or Story.
11. **Status Bar**: Displays data about the fields and marks included in the view.

Icons and Visual Cues for Fields

In the Data Pane and the Worksheet/View, Tableau displays visual cues. Each of the field icons can be modified in the Data Pane by one of four indicators:

Icon/Cues Description	
Blue icons indicate that the field is discrete.	
Green icons indicate that the field is continuous.	
Icons preceded by the equal sign (=) indicate that the field is a user-defined calculation or a copy of another field.	
Icons with an exclamation mark next to them indicate that the field is invalid.	
Move between the active data source or sheet and the Start Page. When on the Start Page, the icon is black. When on an active data source or sheet, the icon is in color.	
Undo Button: The left-facing arrow is will undo your last action.	
Redo Button: The right-facing arrow will redo your last action.	
	Show/Hide Cards: Use this to edit the cards displayed.
Swap: Use this icon to swap, quickly, axes of a visualization.	
Text Values	
Numeric Values	
Date Only Values	
Date & Time Values	
Geographical Data	
User-Defined Set	
Boolean (True/False) Values	
Group	
A blue field on a shelf indicates a **discrete** field.	
	
	A green field on a shelf indicates a **continuous** field.
	A (SORT) icon indicates a sorted field.

	The delta icon indicates that the field has a table calculation applied to it.
	The plus and minus controls appear when the field is part of the hierarchy in which you can drill up or down.

Getting Started in Tableau Desktop

The Tableau Workspace is made up of menus, a toolbar, the Data and Analytics panes, cards and shelves, and one or more sheets (worksheets, dashboards, and/or stories).

Data Pane

Component	Description
Dimensions	Fields that contain category data such as text and dates. Dimensions create the axis headers in a view.
Measures	Fields that contain numbers that can be aggregated. Measures create the axes in a view.
Parameters	Author-defined variables that can replace constant values in calculated fields and filters.
Sets	Subsets of data that are defined by you.

Analytics Pane

Component	Description
Summarize	Includes options to add pre-defined components such as constant and average lines, medians with quartiles, box plots, and totals.
Model	Adds modeling information to your view, such as trend lines, forecasting, and average distribution band.
Custom	Add custom lines, bands, and box plots.

View Components

The View area is where you create your visualization. It is located to the right of the Side Bar. Drag items from the Side Bar to the View to being creating your visualization.

Component	Description
Columns and Rows	Drag dimension and measure fields to these shelves to define how you want the data shown in the view.
Pages	Show data changes over time or across discrete dimensions.
Filter	Drag fields to the Filters shelf to limit the number of members shown. Exposed filters in a dashboard allow others to control how they view the visualization.
Marks	Data as shown in the visualization. Bars, circles, pies, text, and lines are examples of Marks.

Marks Card Tools used to change the appearance of “mark” types.

Worksheets The tabs across the bottom of the view correspond to the worksheets contained within the entire workbook. To add a new worksheet, click the New Worksheet tab and a new worksheet displays.

When you connect to data, Tableau categorizes your data fields as Dimensions (discrete categories of data) and Measures (numeric data values). When you drag a dimension or measure into a view, the Tableau visualization process transforms your data into Marks, which are the visual form your data takes. Marks can be bars, lines, dots, shapes, numbers, or text.

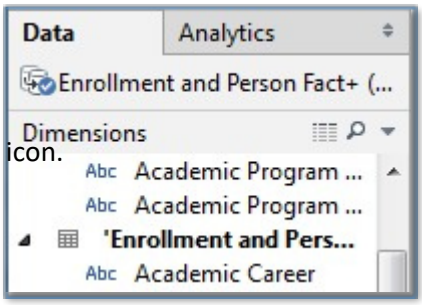
You would use the Marks card to change the attributes of the marks in your view. You can change the color, size, or mark type.

Editing Attributes

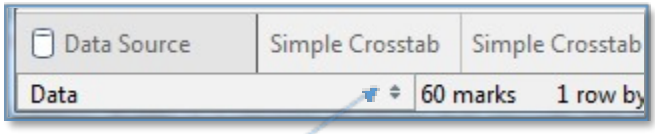
To …	Do This …
Change the mark type	On the Marks card, select the drop-down menu and choose the mark type.
Change colors	Choose Color to access the color menu options.
Adjust mark size	Choose Size, and use the slider to adjust the size.
Change label	Choose Label to access the label menu options. Options available are dependent on selections you make. NOTE when TEXT is selected from the Marks dropdown, Label appears as Text.
Add Details	From the Data window, drag a dimension field to Detail to separate the marks in the view according to members of a dimension. Using details brings more data into a view without changing the table structure.
Edit Tooltip	Choose Tooltip, and in the Edit Tooltip dialog box, edit the details of the tooltip.
Edit Angle	On the Marks card, choose Pie from the drop-down menu, and drag a measure to Angle. Note: Angle only displays when Pie is selected.
Edit Path	**ch**ra**a**g**rt** a dimension to Path. Note: Path only displays when Line or Polygon is **Cco**te**n**d**t**.**r ol the path of a line**

Helpful Hints

You can minimize your Data window by clicking the double arrow at the upper right corner of the window.

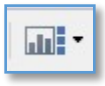


If you've minimized the Data window, it will collapse to the bottom status bar. You can restore the window again by clicking the same double arrow icon.



If you've accidentally hidden a card and want to show it again, there are two ways to do this.

1. Select the **Worksheet** menu and **Show Cards** option.
2. Click the **Show/Hide Cards** icon (shown to the right).



Data Sources

Tableau Desktop is a tool that allows you to connect to nearly any data source. These include Excel, Access, server sourced and cloud based data. You can also easily join multiple data sources for your visualizations. This can be useful when you need to include details from more than one source. For example, you may have performed a survey to find the effectiveness of a program. In order to determine whether the results varied by select demographic details, you might want to join the survey participant information with the personal details from a human resources database. By doing this, you could greatly enrich your reporting capabilities without overwhelming the survey takers with identifying information. This capability within Tableau allows you to move easily beyond previous reporting constraints.

However, with this ability comes a new responsibility. It's *extremely important* to understand fully the data on which you are reporting. Because you will be creating new joins and providing subsequent visualizations, it's important to know that the results are accurate. As you learn, validate your data by running queries from the warehouse or in other proven methods to ensure your counts are correct. Likewise, since you have the ability to create new data connections, it is your obligation to ensure you are not sharing any confidential material. This is discussed in depth in the following section.

Security Considerations

Data

While CeDAR does provide a repository for housing university data and assistance in generating reports, we do not own, nor can we grant, access to specific proprietary data. Instead, if there is a need to include data from a group other than your own, you should contact the appropriate data custodian. The specific contact details for each group can be found on the CeDAR website under “Access and Permissions”. Specifically, . We are happy to help facilitate conversations as needed. In order to prepare for your conversation it is important to identify and document your reporting requirements. Start by determining your audience. Next, be specific about what you are trying to achieve with the report and working with the data custodian, determine the exact data elements needed. Once this has been outlined, consider how the data will be secured. This might include restricted access to the report or even more limited access to specific data. Ensure reports are designed and written to show only the level of detail appropriate and necessary. Once agreed by the data custodian, access may be granted.

When reviewing and creating data sources, consider the specific data elements and whether or not you will be allowing access to underlying data. Specifically, if you are accessing a custom data source that has not been created in advance such as an excel spreadsheet, be sure to include only items you will need. For example, inclusion of sensitive data such as the social security number should be avoided when you could use the employee number for identification more appropriately and just as well. Similarly, care should be taken when creating reports to ensure appropriate anonymity is retained.

Report Access and Security in Tableau

Once you have obtained access to the required data and created your reports, you will want to publish them to your server site. It is from the server site where users will access your reports. You may either send them direct links to your reports via email or by sending them the URL for the Princeton University Tableau site, In order to access content posted to the server, all users must be added on a site specific basis. This may be achieved using Active Directory groups or as individual users.

Once added, users may be granted permission to the site’s content. To this end it is once again important to consider your audience to ensure you have included your report consumers in the appropriate access groups.

- Will your users need to manipulate the reports, changing them to customize the views and results, have access to the underlying data (**Interactor Full**)?
- Will they only need to access filters you have provided to narrow their view (**Interactor Light**)?
- Or will they be restricted from making any changes to the view as provided (**Viewer**)?

Each of these levels of access is available but the user must be added to the appropriate group.

Similarly, you may have reports that will be available to a more limited group. In order to achieve this, you may create a new Folder with more focused access. This may be done using groups or by granting access to individual users. However, it’s best to utilize groups wherever possible if the same access applies to more than one person in order to simplify and streamline any maintenance required.

These access groups allow for the limitation of access to or activities against specific report views. However while it may be a future enhancement at this time, Tableau server does not have built in row level security. In order to account for this limitation, you may build in your own security by adding in filtering against access tables that you create and maintain. Alternatively, if limited access is required, you might create separate projects with specialized access groups on the server site.

There is one last important point regarding report access and security. If you have a report that is meant for public consumption, it will need to be posted to Princeton's public Tableau server, When the appropriate link has been embedded within your webpages, this will enable access to your views without requiring authentication. This guest access will be set at a standard level allowing work with filters but no editing or access to underlying detail data.

Tableau Server

Tableau Server is a browser based platform where you will publish your dashboards in order to share them with others around the university and beyond. Here at Princeton, the sites on Tableau server are managed in a manner very similar to the data warehouse. Each business unit will have a site and that site will be managed by a designated site administrator. The site administrator will be responsible for managing users by granting and setting access to data and dashboards on the server site.

As a desktop user, when you have created dashboards you need to share, you will publish to your server site. In order to do this, you will need to have a Publisher role on the server site and access to the Project. Please note that you must not have a later version of Tableau installed on your desktop than that of the server if you would like to publish to the server (e.g. if the server is at release 9.2, desktop users with releases 9.0, 9.1, and 9.2 may publish to the server but those with release 9.3 will not). Once published, report users will be able to interact with the workbook at their designated level of access as defined by the site administrator.

As mentioned earlier, when outlining data security, there may be times when you need to embed your dashboards into external websites. If this is the case, you will need to bypass authentication. This is when you would use the Tableau Public server.