

Attendance: tinyurl.com/MCGTableau

Tableau Workshop

Introduction to Data Analysis



Accessing Tableau



Understanding the Software



Guided Exercise

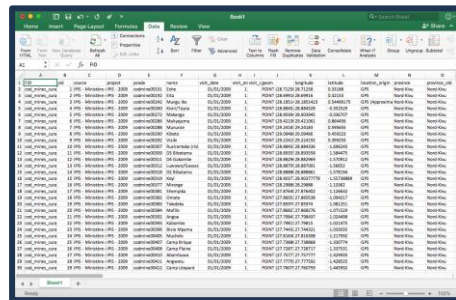


What is Data Analysis?

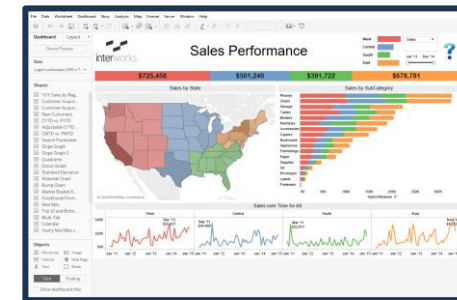
- Cleaning, transforming, and modeling data to create comparisons and analyze trends

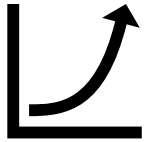
How is Data Visualization Used?

- Presenting large amounts of data in digestible formats, leading to better decision-making



A screenshot of a Microsoft Excel spreadsheet. The spreadsheet contains a large table of data with multiple columns and rows. The columns include various identifiers, dates, and numerical values. The data appears to be organized in a structured format, possibly representing sales or financial records.





Over 90% of our data today was created within the last two years



Every online search, photo, text, and social media post creates new data



The Internet of Things is largely responsible for the recent data explosion

This has led to massive amounts of structured and unstructured data, now known as **big data**.

1. Descriptive Analytics

Using past data, many times in the form of companies' KPIs, to discover how critical trends and comparisons evolved over time



Types of Data Analytics

2. Diagnostic Analytics

Determining the root cause behind the observed trends from the descriptive analytics by using additional data sets

3. Predictive Analytics

Conducting risk assessments and forecasts to determine what the outcome of future actions may be

4. Prescriptive Analytics

Combines results from past three analytics to determine what the best data-driven decisions that can be made

Popular Analytics Tools



Free Data Sources



Steps to Download

1. Search for [Tableau Student](#)
2. Register with your Binghamton email
3. Check your inbox for instructions to download Tableau Desktop and Tableau
4. Download the eLearning software with the respective code

Students receive free one-year Tableau licenses and eLearnings

Personal information

Legal First Name*

Legal Last Name*

Email*

Confirm Email*

School information

School Name*

How will you be using your Tableau license?*

Select one: ▾

VERIFY STUDENT STATUS

We offer free one-year Tableau licenses to students at accredited academic institutions through our eLearning software

Welcome to Tableau for Students! Your academic license now includes Tableau Desktop, Tableau Prep, and eLearning for free.

1

The product key below can be used to activate both [Tableau Desktop](#) and [Tableau Prep](#) on two separate computers, Windows or Mac. This key will expire in one year.

- [Download Tableau Desktop](#)
- [Download Tableau Prep](#)
- Activate with your product key: **TCBN-3AA5-FFA0-4E73-6FDA**
- If you're receiving the error "product key is invalid" visit the [knowledge base page](#) to resolve your issue.

2

Get started with free eLearning online self-paced courses:

1. Go to <https://elearning.tableau.com>
2. Create (or login to) your TableauID account, and confirm email address via the TableauID confirmation email
3. Go to <https://elearning.tableau.com> and log on using your TableauID
4. Register at the Tableau Learning Center with this Access Key: **1ce14-dhjc2yn**

These keys are for your personal use only. Please do not share them. Need additional help? check out the [FAQ's](#) or [submit a case](#) for installation support.

Importing Excel File

Tableau allows you to import data from multiple sources

The datasets MCG provided to teams are Excel files, you should import them accordingly

The screenshot shows the Tableau interface. On the left, the 'Connect' menu is open, listing various data sources. 'Microsoft Excel' is highlighted with a yellow box. Other options include 'Text file', 'JSON file', 'Microsoft Access', 'PDF file', 'Spatial file', 'Statistical file', 'More...', 'To a Server' (with sub-options like 'Microsoft SQL Server', 'MySQL', 'Oracle', 'Amazon Redshift', 'More...'), and 'Saved Data Sources' (with sub-options like 'Sample - Superstore', 'World Indicators').

The main area is titled 'Open' and contains a search bar and a button labeled 'Open a Workbook'. Below this, there are three sample workbook thumbnails: 'Superstore' (a bar chart), 'Regional' (a map of the United States), and 'World Indicators' (a bar chart). A button labeled 'More Samples' is located to the right of these thumbnails.

On the right side of the interface, there is a 'Discover' section with links to 'Training', 'Resources', and 'Update to 2020.3 Now'.

Editing Dataset

Once you import the file you should be brought to this screen, where you can make changes to the data if needed

Tableau utilizes live connections between datasets, so if you change the data in Excel it will also be updated in Tableau

When your dataset is ready to be visualized, you will move on to the Worksheet

The screenshot shows the Tableau interface for a live connection to an Excel dataset. The 'Connections' pane on the left shows 'mcdonalds dataset' (Microsoft Excel) selected. The 'Sheets' pane shows 'Sheet1' with a checkbox for 'Cleaned with Data Interpreter' checked. The main view displays 'Sheet1 (mcdonalds dataset)' with a table of data. A yellow box highlights the 'Connection' options: 'Live' (selected) and 'Extract'. A blue arrow points from the 'Go to Worksheet' button to the 'Sheet1' tab at the bottom.

Group	Target	Base Total '000	Five Guys	McDonald's	Burger King	Wendy's	Smashburger	Whataburger	Checkers	Carl's Jr.
All	All	248,885	22,091	127,051	70,571	63,757	5,399	13,360	8,434	13,492
Gender	Men	120,167	11,798	62,549	36,029	30,523	2,765	6,722	4,025	7,860
Gender	Women	128,718	10,293	64,502	34,541	33,234	2,634	6,639	4,409	5,632
Education	graduated colleg...	79,281	9,074	40,162	19,046	21,217	2,519	4,034	1,942	3,735
Education	attended college	70,694	6,973	37,029	21,179	18,950	1,425	4,173	2,416	4,715
Education	graduated high s...	71,543	4,896	36,725	22,700	18,146	1,068	3,672	3,092	3,231
Education	did not graduate ...	27,366	1,148	13,134	7,645	5,443	387	1,482	985	1,811
Education	post graduate	28,822	3,280	14,031	6,257	7,127	1,011	1,163	672	1,255
Education	no college	98,909	6,044	49,860	30,345	23,589	1,455	5,154	4,076	5,042
Age	18-24	29,526	3,472	15,504	7,496	7,481	854	1,835	1,295	2,010
Age	25-34	44,726	4,490	24,385	13,713	12,811	1,002	2,667	2,705	2,797

Measures vs. Dimensions

Dimensions are qualitative information that determine groupings

Groups and Targets can be refined by dragging the target/group to the Filter Tool

The screenshot shows the Tableau interface with the 'Data' source set to 'Analytics'. The 'Dimensions' list includes 'Group', 'Target', and 'Measure Names'. The 'Measures' list includes 'Base Total '000', 'Burger King', 'Carl's Jr.', 'Checkers', 'Five Guys', 'McDonald's', 'Smashburger', 'Wendy's', 'Whataburger', 'Number of Records', and 'Measure Values'.

Dimensions	Measures
Group	Base Total '000
Target	Burger King
Measure Names	Carl's Jr.
	Checkers
	Five Guys
	McDonald's
	Smashburger
	Wendy's
	Whataburger
	Number of Records
	Measure Values

Measures are quantitative information that is used for visualizations

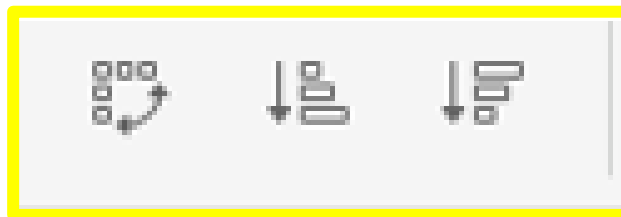
Comparing Measures is an effective way to compare two different datapoints

Applying Data in Columns and Rows



Double click or drag measures and dimensions to move them into columns or rows

Multiple measures and dimensions can be used in each column and row

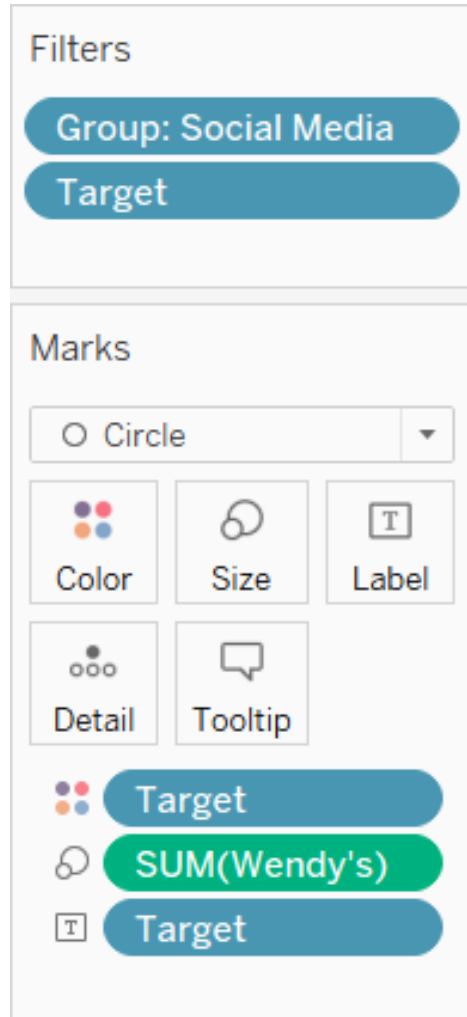


The switch column/rows, ascending, and descending tools are useful to rearrange the orientation of your data

The Show Me Tool is very useful in showing you the visualizations that could be created with your data

Simply click on one of the pictures and Tableau will create that visualization for you





Filters allow you to refine your data to only certain groups or target points

Marks allow you to manipulate the graph features after bringing the measures or dimensions into columns and rows

Examples Include:

- Color changes to graphs
- Size edits to emphasize certain datapoints
- Label adds data labels to the graph
- Detail is useful to point out small marks within the data

Questions?

MCG
MANAGEMENT
CONSULTING GROUP