



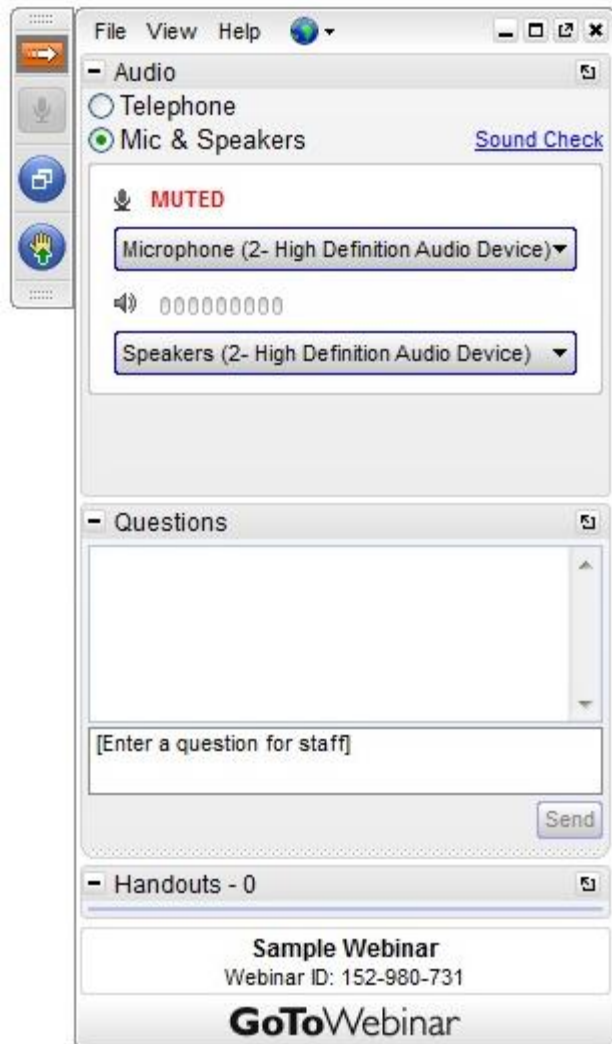
SENTURUS

ADVANCED ANALYTICS IN TABLEAU: USE THE FORCE!

**Built-In Functions and 3rd Party Tools for
Deeper Data Insights**



GoToWebinar Control Panel



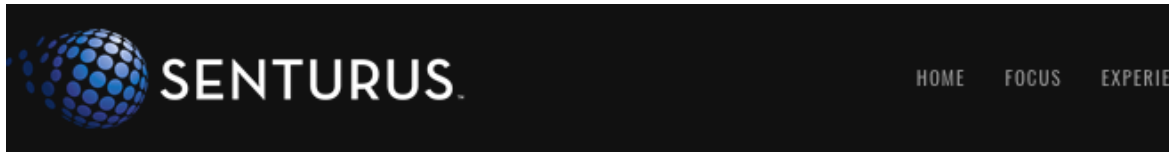
Click arrow to restore full control panel



Submit questions here

Presentation Slide Deck

www.senturus.com/resources/



RESOURCE LIBRARY

Welcome to our extensive, free library of past webinars, demos, whitepapers, presentations and helpful hints. Use the topic boxes to the right to filter through and easily locate content. We are constantly adding new materials, so please check back often to see our latest content. Enjoy!

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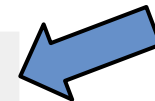
Date

Title

Type

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RESOURCE TITLE	TYPE	GO
IBM COGNOS ANALYTICS RELEASE 7+ AUTHORIZING IMPROVEMENTS Demos of New and Reintroduced Features	 TIPS & TRICKS	→
ADVANCED ANALYTICS IN TABLEAU: USE THE FORCE! Built-In Functions and 3rd Party Tools for Deeper Data Insights	 BUSINESS STRATEGY	→
EMBEDDING TABLEAU IN SALESFORCE DASHBOARDS A How-To Primer with Demos	 TIPS & TRICKS	→



Agenda

- Introductions
- The Analytics Maturity Curve
- Tableau's Built-In Advanced Analytics
- Tableau's Options for Advanced Analytics
- Open Source Programming Languages
- Clustering Demo Using Tableau
- Time Series Demo Using R Integration
- A/B Testing Demo Using Alteryx
- Additional Resources
- Q&A and Wrap-up

Introducing...Today's Presenters



Arik Killion

Advanced Analytics Architect
Senturus, Inc.



Michael Weinbauer

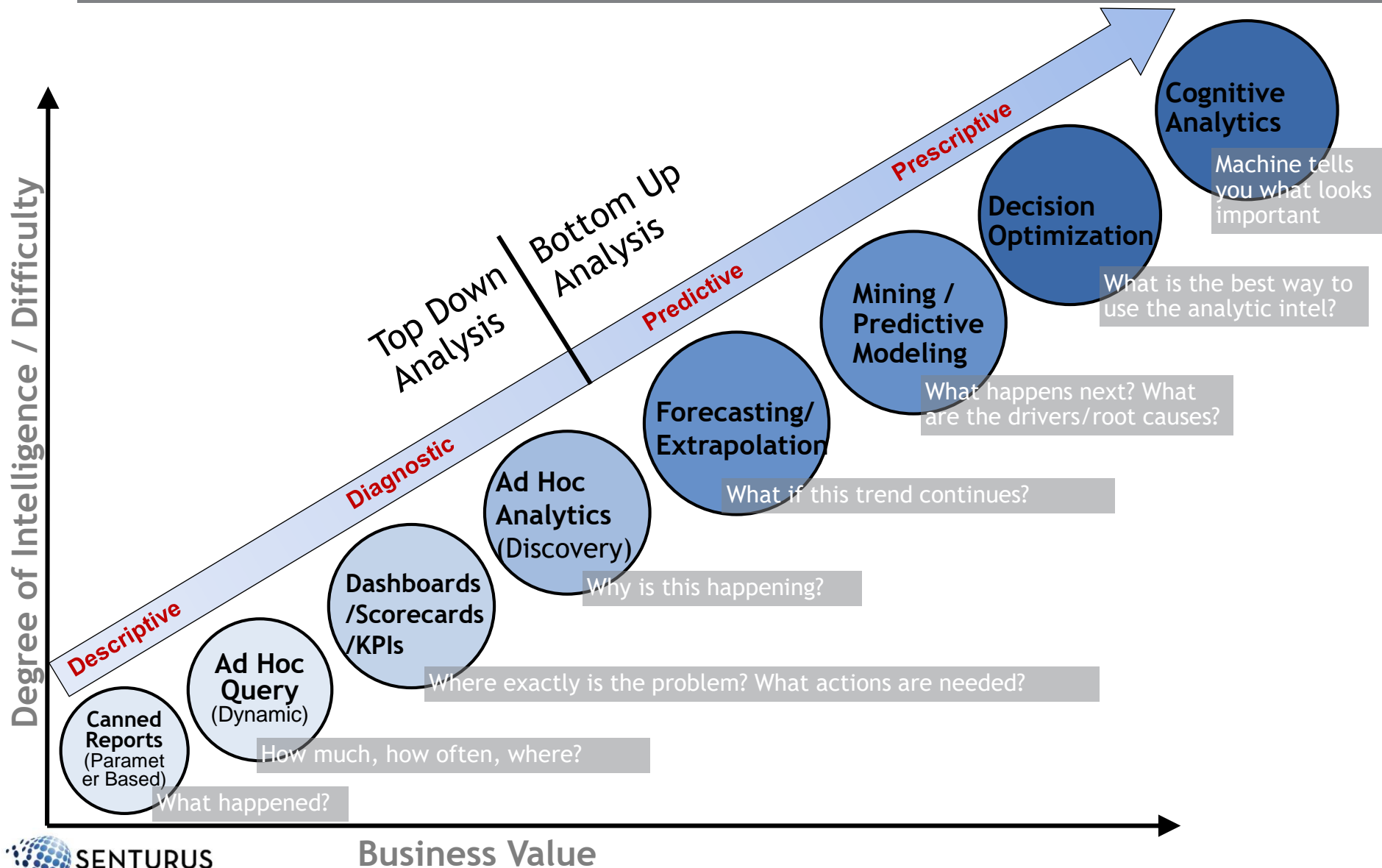
Practice Area Director /
Solutions Architect
Senturus, Inc.



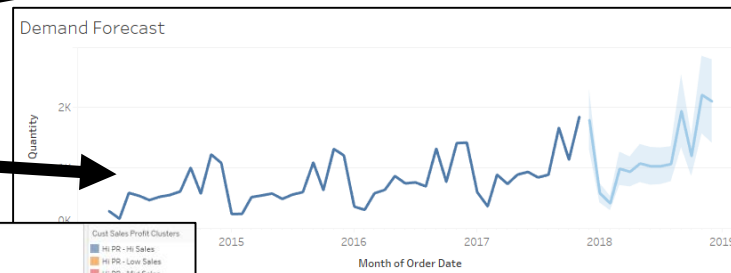
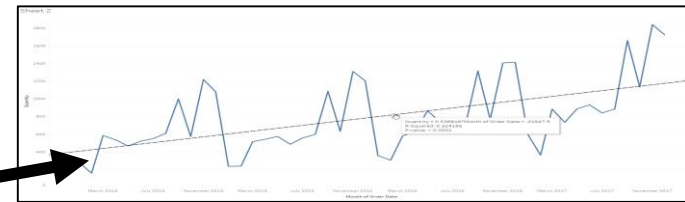
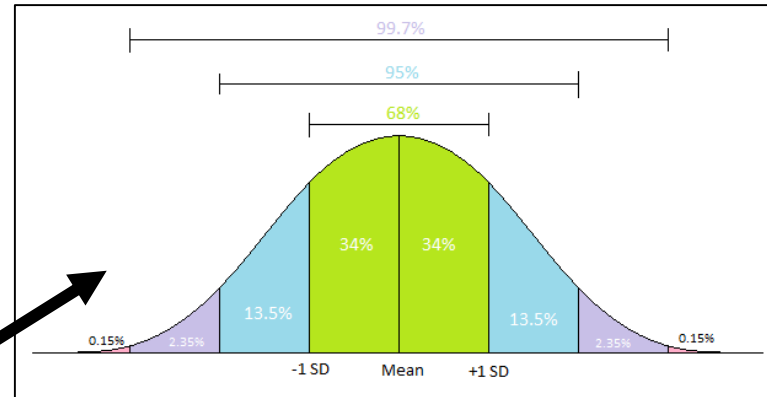
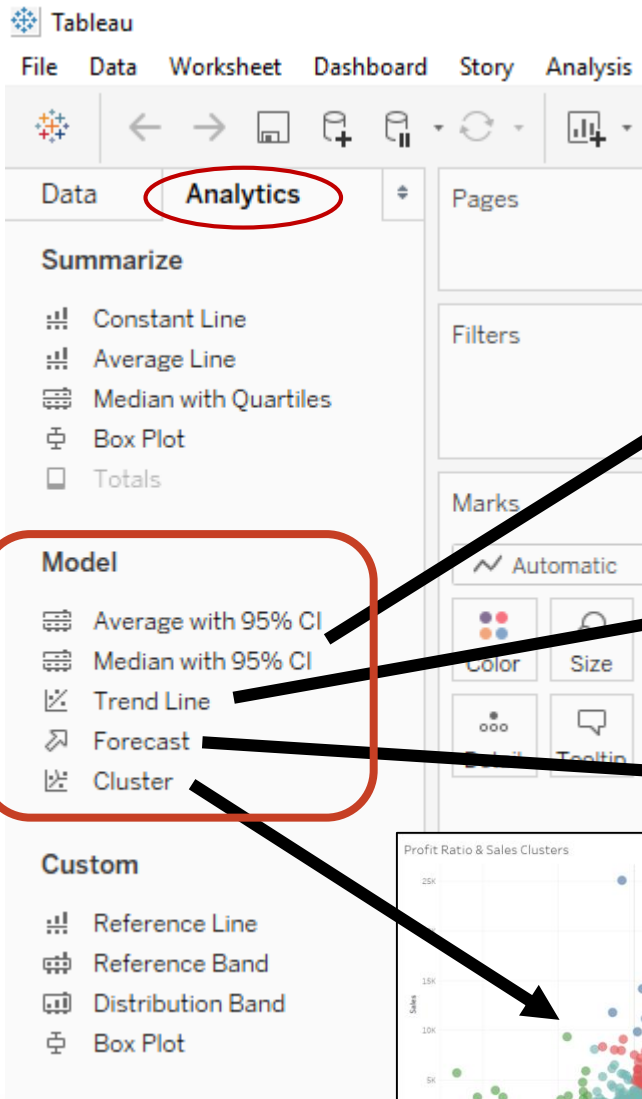
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ADVANCED ANALYTICS OPTIONS WITHIN TABLEAU

The Analytics Maturity Curve

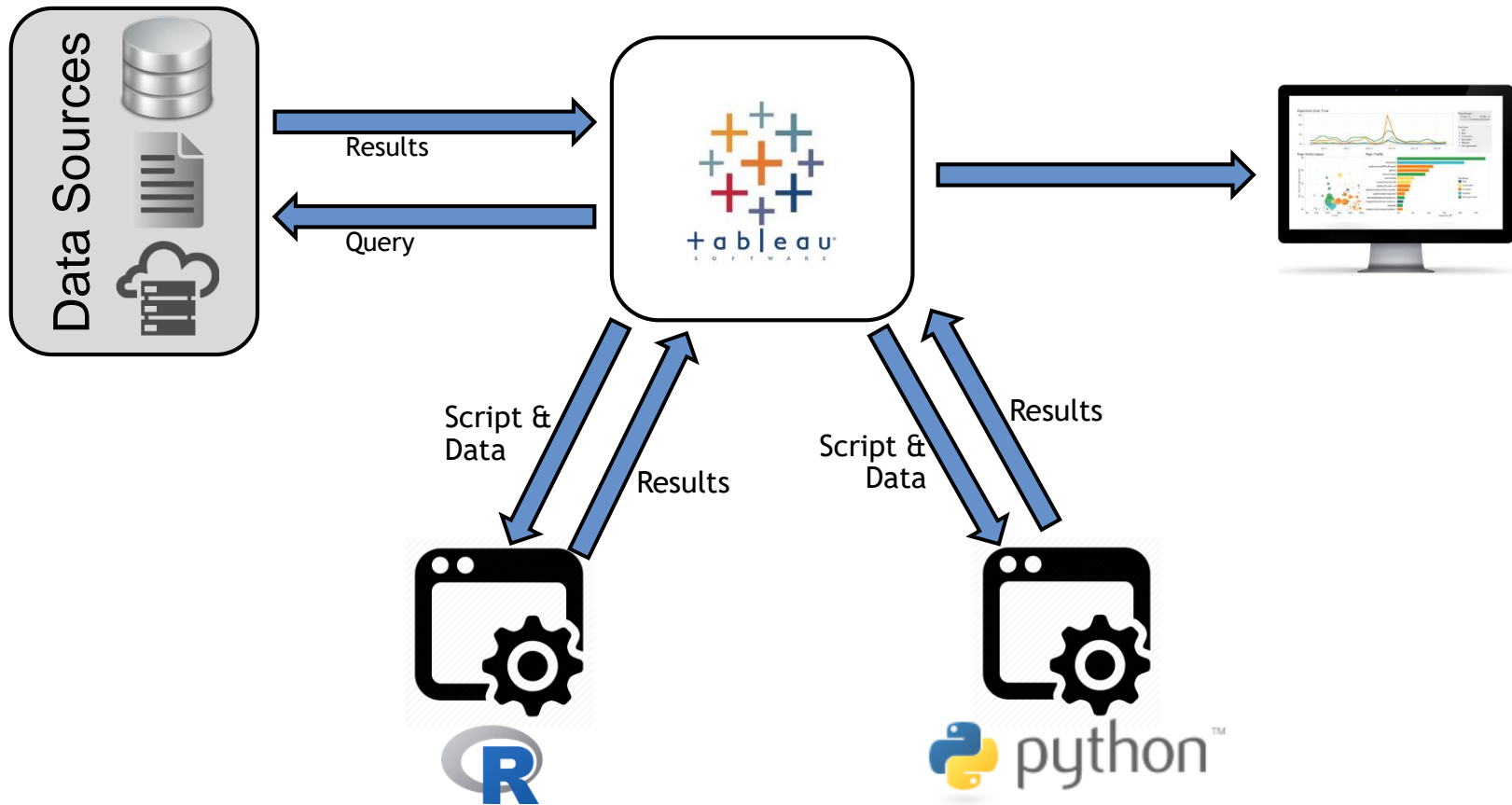


Tableau's Built-In Analytics



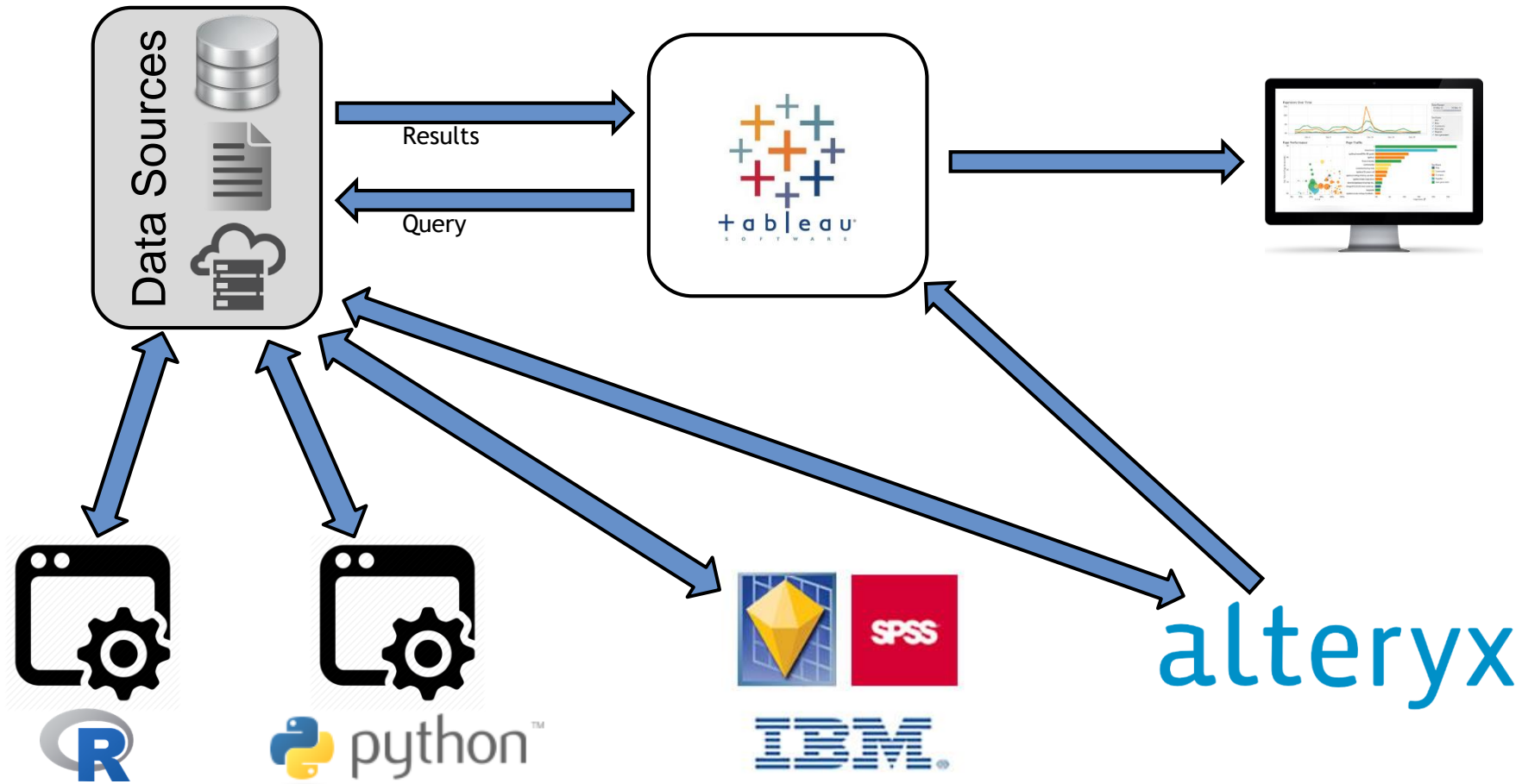
Using 3rd Party Analytics with Tableau

Integrated Architecture



Using 3rd Party Analytics with Tableau

Stand-Alone Architecture



Open Source Analytic Programming Languages



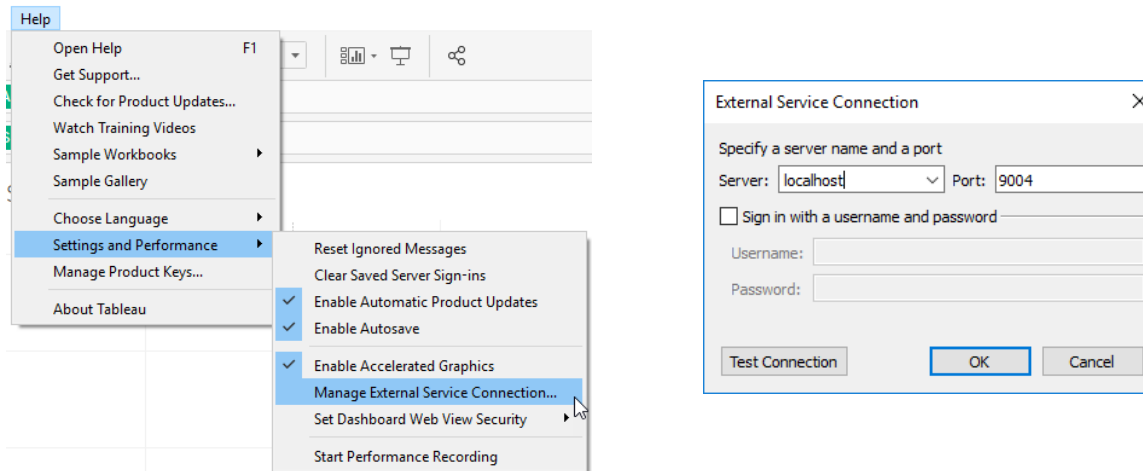
- Users primarily have been from academia and research, but is expanding into the enterprise
- Steep learning curve, but quite user friendly and easy to move into more advanced things once this is achieved
- Many packages available to perform various advanced analytics tests and models
- Most common IDE is RStudio



- Users primarily have been programmers crossing over into advanced data analysis
- Very gradual learning curve due to code readability and simplicity
- Came a little later to the analytics game, but has many libraries available that are comparable in R
- Various IDEs available, but most common for Data Science work is Spyder or Rodeo

Tableau Integration with R & Python

- Requires a server to handle and process requests coming from Tableau: R uses Rserve and Python uses TabPy
- Configuration on Tableau is as easy as telling it where the server is and what port address - found under Help > Settings



- Both “server” apps can run on a local machine for personal use or in a multi-user environment on an actual server.

NOTE: The Rserve server for R can only accommodate a single user when it is being run on Windows OS.

Poll

How have you used advanced or predictive analytics with Tableau? (select all that apply)

- I haven't yet
- Internal Tableau functionality
- 3rd party integrations (R, Python)
- Stand-alone programming languages or enterprise tools
- Advanced analytics produced elsewhere that I use



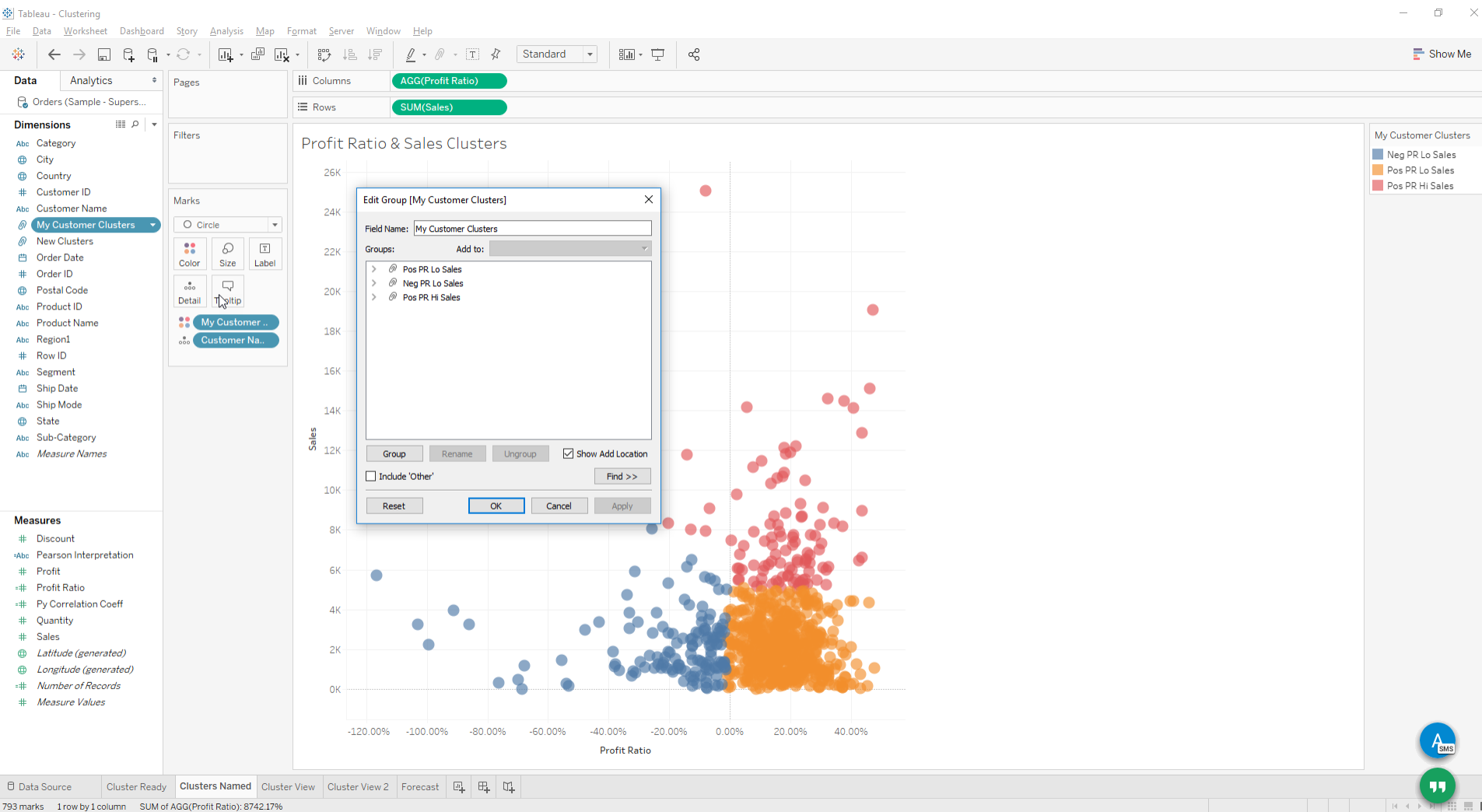
BUILT-IN ANALYTICS

Clustering Demo

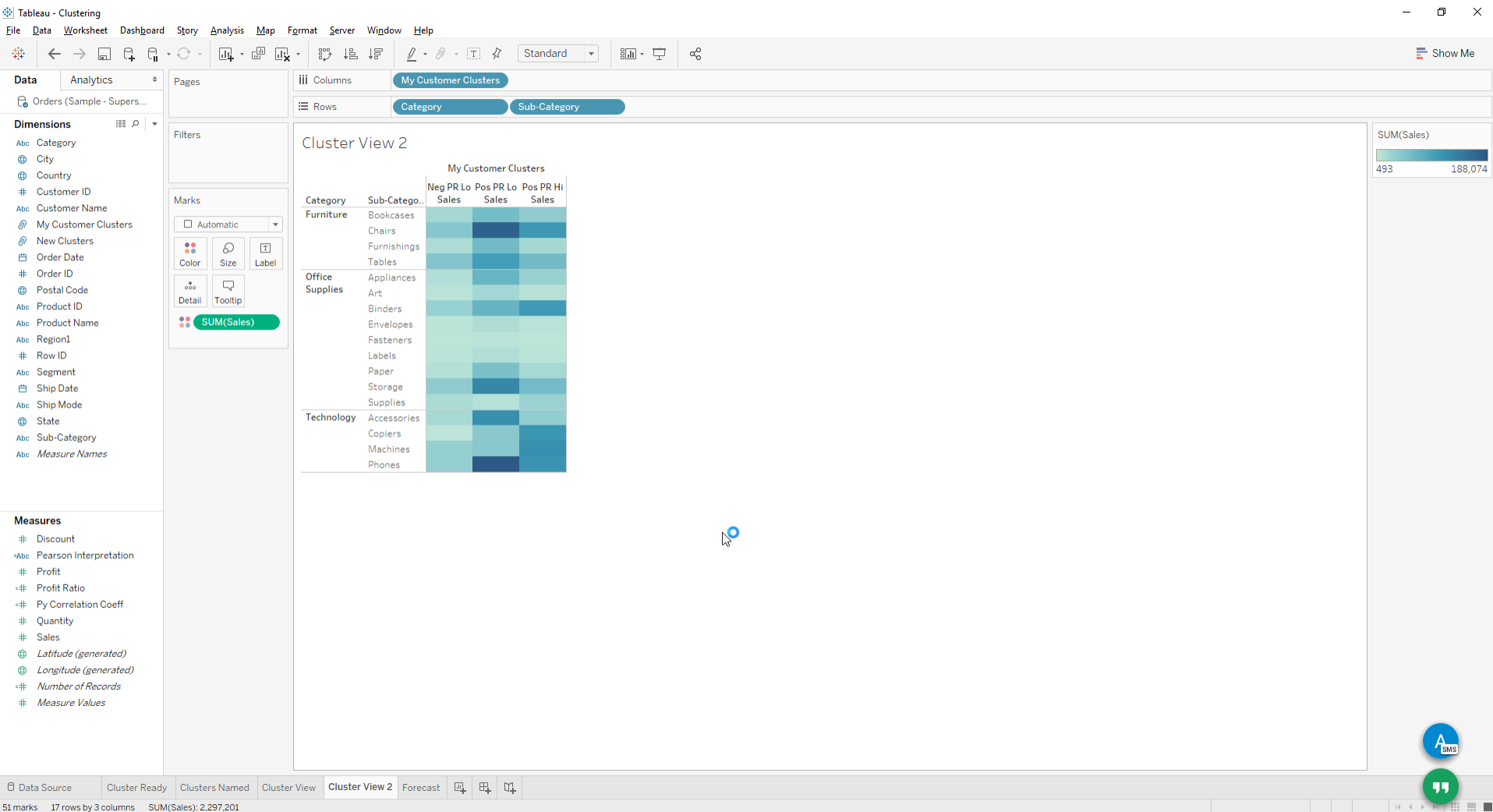
Clustering with Tableau



Clustering with Tableau



Clustering with Tableau

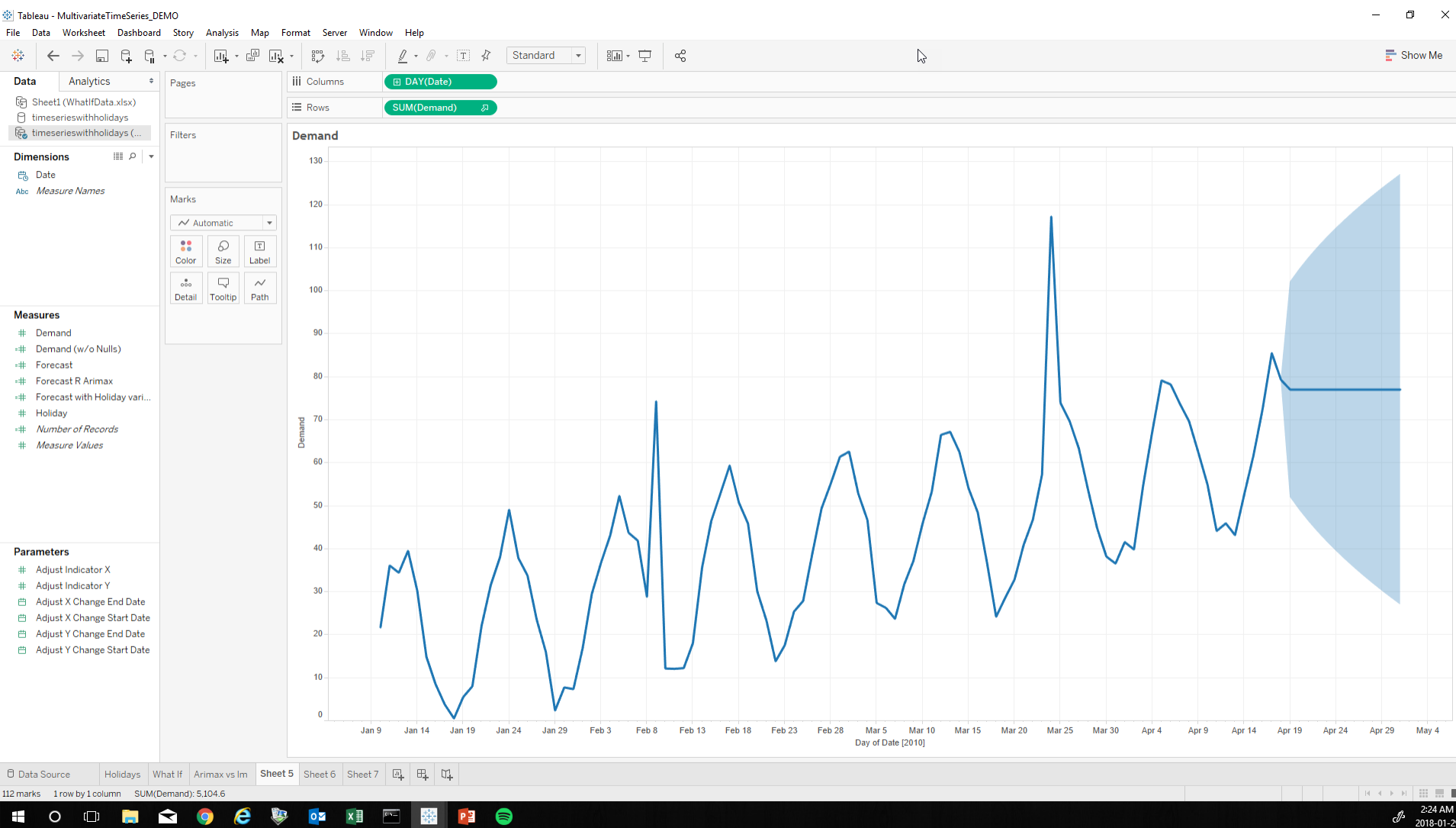




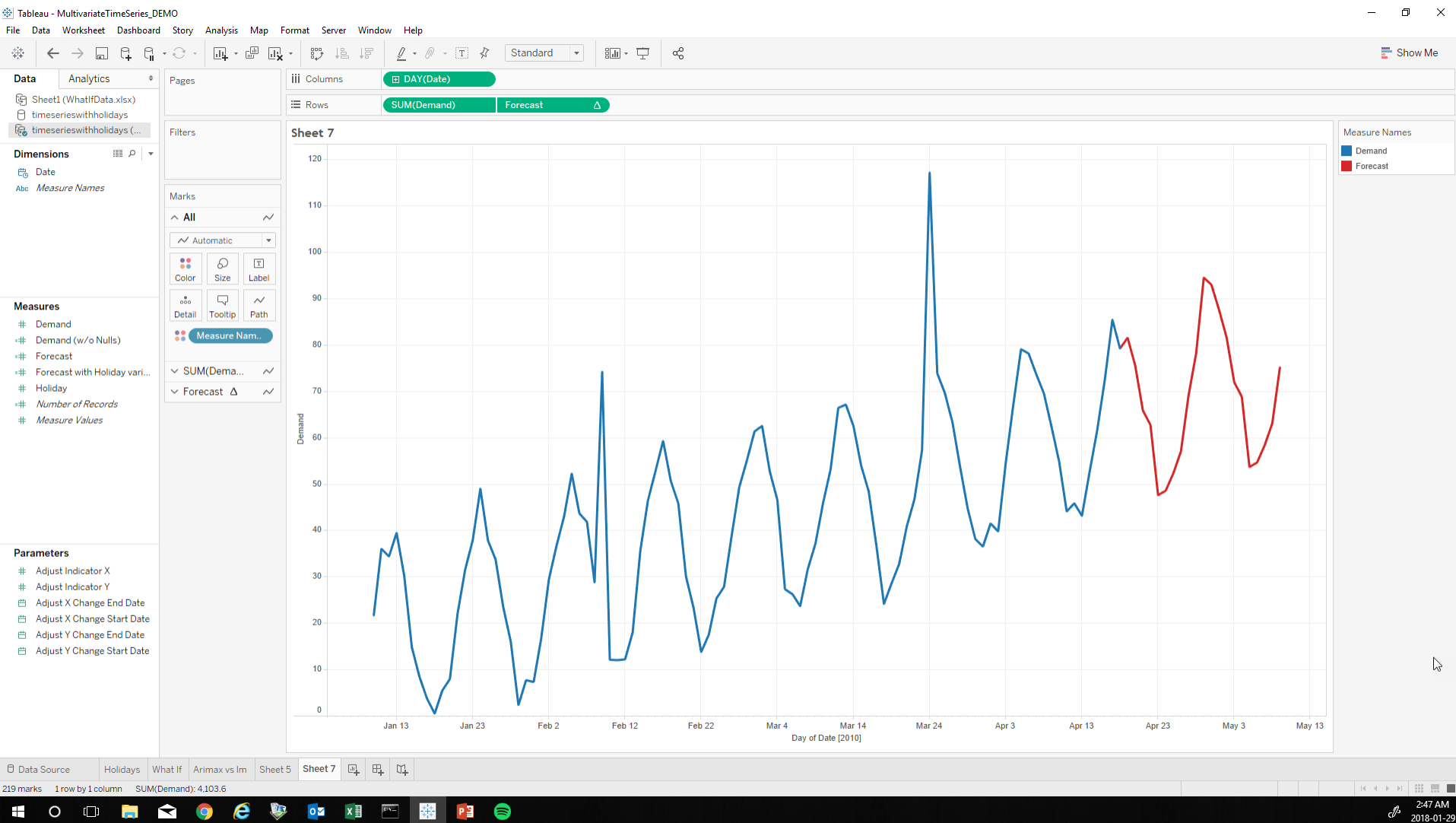
FROM BUILT-IN ANALYTICS TO ADVANCED FORECASTING IN R

Time Series Demo

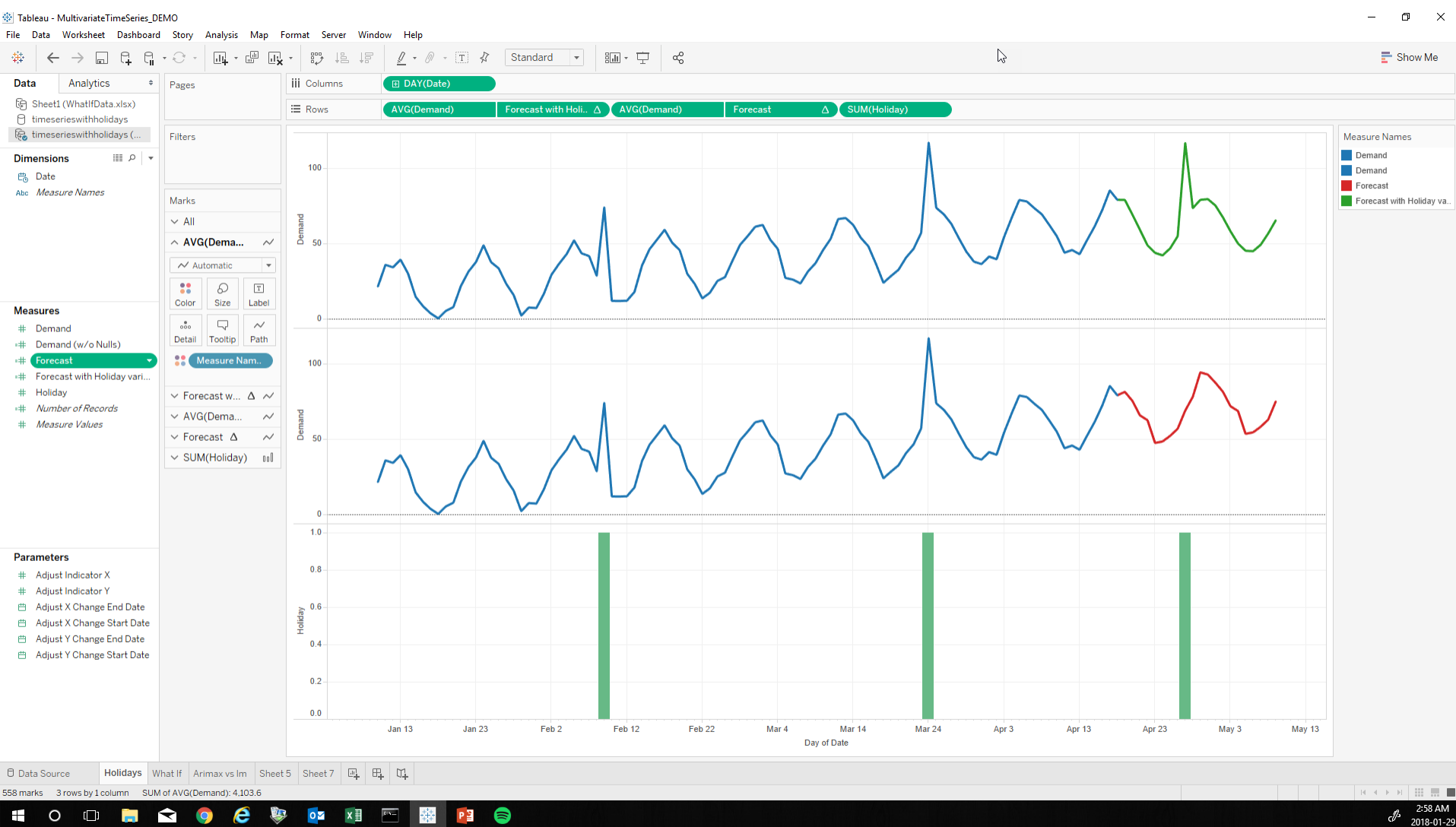
Demand Forecast - Built-In Function



Demand Forecast Using R - Monthly Seasonality



Demand Forecast Using R - with Holiday Variable





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A/B MARKETING TEST MODELS

Using Alteryx

A/B Test for Offer Response

Alteryx Designer x64 - Offer Responsiveness.yxmd*

File Edit View Options Help

Search for tools, help, and resources

Favorites In/Out Preparation Join Parse Transform In-Database Documentation Spatial Interface Data Investigation Predictive AB Testing Time Series Predictive Grouping Prescriptive Connectors Address Demographic Analysis

Workflow - Configuration

Canvas Workflow Runtime Events Meta Info

Workflow Name

☒ Use File Name

☐ Custom: Offer Responsiveness

Description

This workflow provides an example of how the A/B Testing tools can be used to examine the impact of changing the messaging of an offer for different customer segments. In this workflow, stores in the control group use Google AdWords to drive store visits while treatment stores have switched to LinkedIn ads. The insights are then output to a Tableau dashboard.

URL:

Display Text (optional):

Tool Settings

Root Tool Name:

Tool Version:

Tool In-Database? ☐

Tool Palette

Category Name:

Search Tags:

Overview

Offer Responsiveness.yxmd*

This workflow provides an example of how A/B Testing tools can be used to examine the impact of changing the messaging of an offer for different customer segments. In this workflow, store in the control group use Google AdWords to drive store visits while treatment stores have switched to LinkedIn ads. The insights are then output to a Tableau dashboard.

The Input Data tools read in data from our source systems.

An AB Trend tool creates seasonality and trend measures for the control group

An AB Controls tool connects the Treatment group to the Control group and identifies which measures to match up

An AB Analysis tool measures the AB test results versus our control and treatment data

The Join tool combines the AP test results and store DMA information data streams on matching store identifier fields.

The Output Tableau Workbook macro outputs a .twb file for Tableau.

Control
"Response data for what we are currently doing"

Treatment
"Who is going to receive the experimental change"

Test
"Results data for both control and treatment groups"

Designated Market Area (DMA) to Store lookup table

Within the Results - Messages window, click the Output Tableau Workbook link with the .twb file extension to view the workbook.

Results - Workflow - Messages

0 Errors 0 Conv Errors 1 Warnings 2 Messages 8 Files All

Last Run Configuration

Browse (124) 3 records

Input Data (106) 13572 records were read from "C:\ProgramData\Alteryx\DataProducts\DataSets\Content\Tableau Starter Kit\01 Supporting Macros\Offer Responsiveness\Full Final Test Analysis Data.yxdb"

Browse (125) 1 records

Input Data (107) 117 records were read from "C:\ProgramData\Alteryx\DataProducts\DataSets\Content\Tableau Starter Kit\01 Supporting Macros\Offer Responsiveness\Store DMA.yxdb"

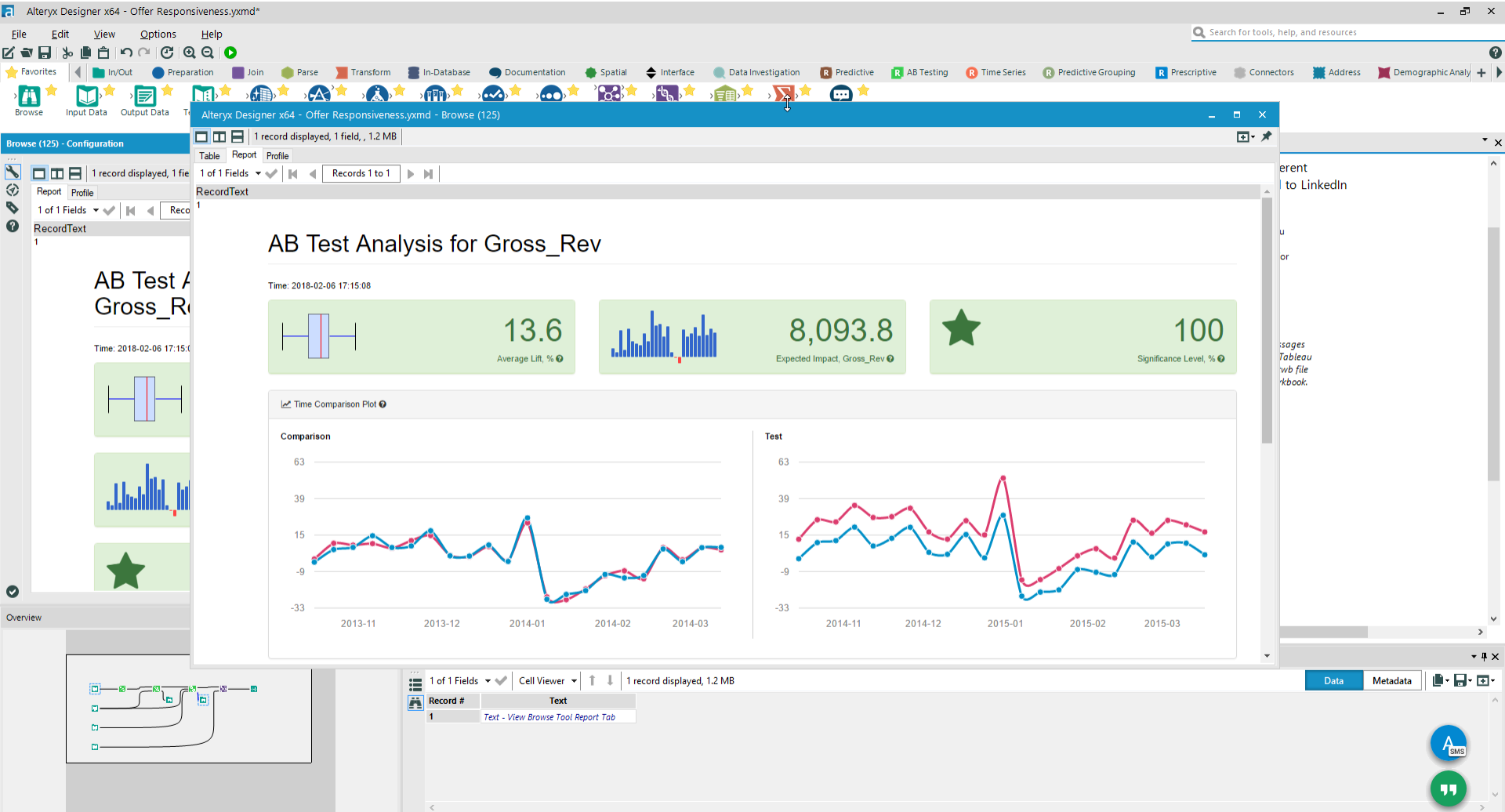
Join (95) 36 records were joined with 0 un-joined left records and 81 un-joined right records

Output Tableau Workbook (123) 36 records were written to "C:\Users\larikk\AppData\Local\Temp\Engine_19468_a60cd69d0cee4926928c7e9b2cb19943_AlteryxData_111899af83d84f249d33281509fb856.tde"

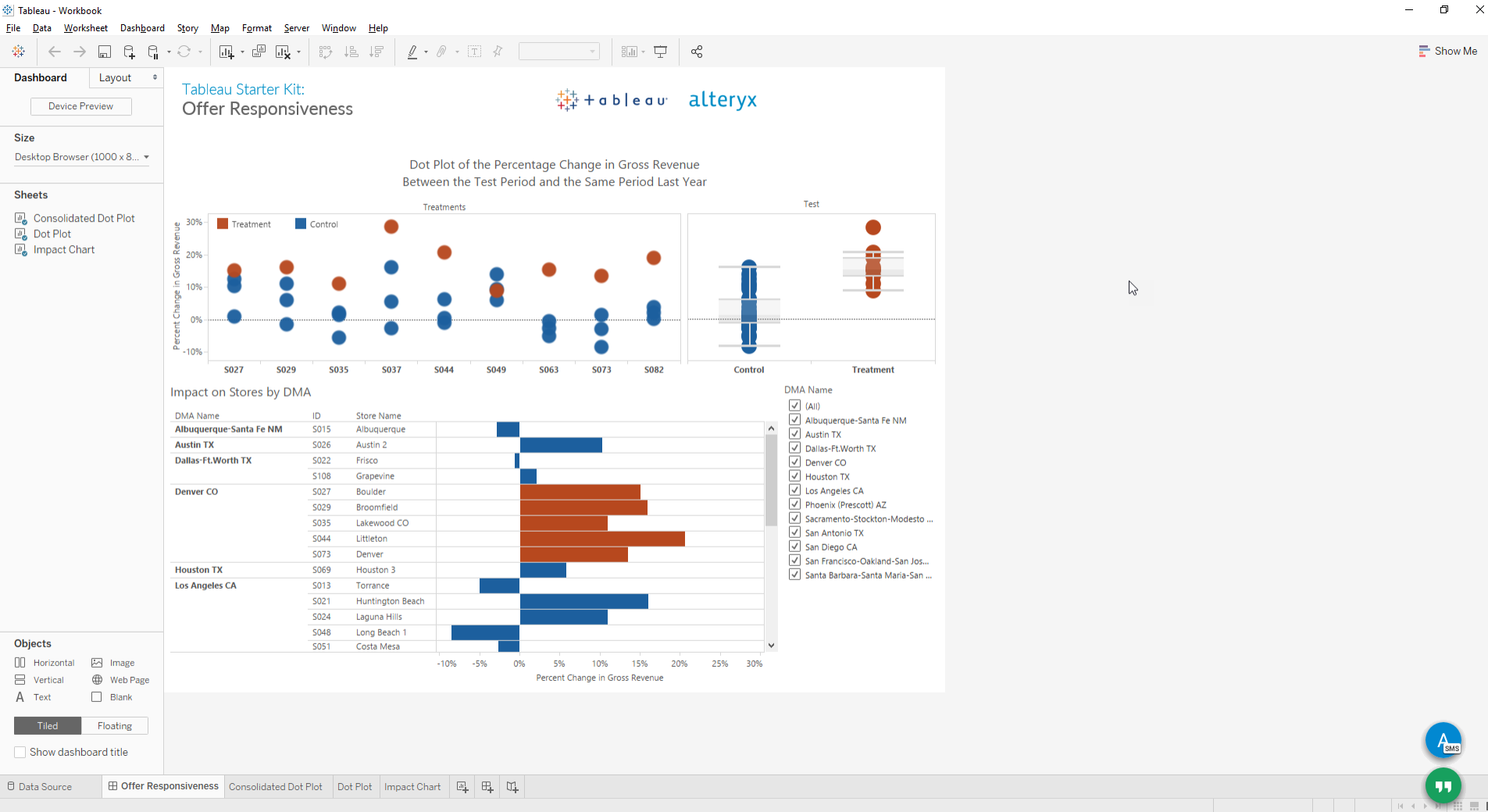
Output Tableau Workbook (123) 999 records were written to "C:\Users\larikk\AppData\Local\Temp\Engine_19468_a60cd69d0cee4926928c7e9b2cb19943_Workbook.twb"

Designer x64 Finished running Offer Responsiveness.yxmd in 41.7 seconds with 1 warning

A/B Test for Offer Response



A/B Test for Offer Response





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EVALUATING OPTIONS FOR USING ADVANCED ANALYTICS WITH TABLEAU

Welcome to The (Functionality) Matrix

Advanced Analytics with Tableau Matrix

Functional Area	Tableau Built-in Functions	Tableau Integration		Analytic Programming Languages		Enterprise Software Platforms	
		R (via Rserve)	Python (via TabPy)	R (stand-alone)	Python (stand-alone)	Alteryx Designer	IBM SPSS Modeler
On-the-fly Table Calculations for Visualization	●	●	●	○	○	◐	○
Learning Curve/Low Coding Requirement	●	◐	◐	○	○	◐	◐
Breadth of Scoring or Modeling Capabilities	○	◐	◐	●	●	●	●
Scalability	◐	○	○	◐	◐	●	●
Centralization of Scripts & Models	○	○	○	●	●	●	●
Repository with Permissions Control, Versioning and Scheduling	○	○	○	○	○	●	●
Cost of Deployment	●	●	●	◐	◐	◐	○

Benefits of Using Advanced Analytics

- Greater insights and visualization capability
- More powerful clustering and forecasting capabilities over the built-in functions
- Allows the analytics to find insights that may not be readily apparent
- Flexibility to use any available analytic applications, such as:

• Extracting Sentiment from Text	• Prediction Models for Attrition or Conversion
• Outlier & Anomaly Detection	• Association & Sequence Analysis
• Geocoding & Spatial Analytics	• Optimize & Prioritize
• Identify & Measure Risk	• Root-Cause Analysis

Tableau with Advanced Analytics Expert Assistance

1 Day Jumpstart

- Setup a single R Server instance
- Configuration of Tableau integration
- Walk through
- Hands-on walk through on three practical example scripts

\$1,495*

3 Day Advanced Analytics Planning

- Assessment of business objectives
- Evaluation of Tableau dashboard/reporting and supporting data sources
- Mapping of top three advanced analytics solution approaches to meet objectives
- Findings and solution recommendations document

\$4,599*

Flexible Mentoring

- Expert guidance with existing data and/or dashboards
- One-on-one training
- Provided at an hourly rate

* plus travel expenses



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WHO WE ARE

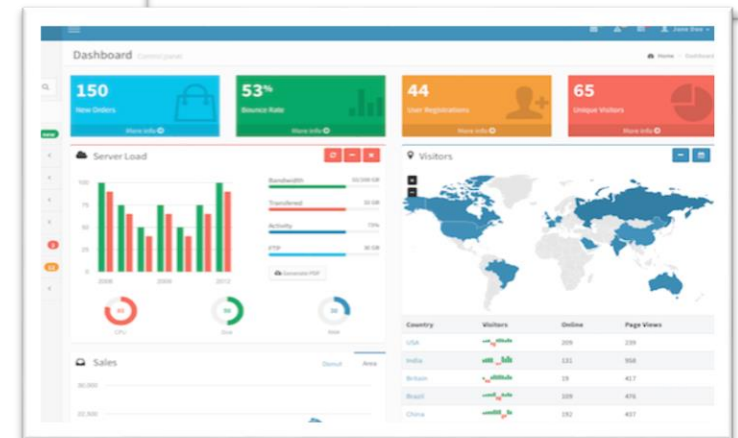
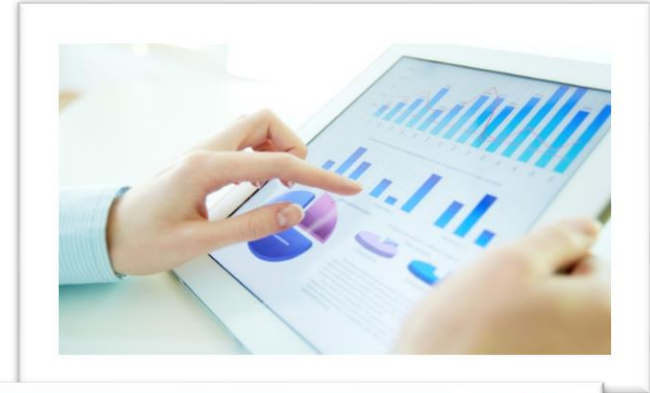
Business Analytics Consultants

Bridging the Gap Between Data & Decision Making



Business Analytics Architects

- Dashboards, Reporting & Visualizations
- Data Preparation & Modern Data Warehousing
- Self-Service Business Analytics
- Big Data & Advanced Analytics
- Planning & Forecasting Systems
- Proprietary Analytics Connector Software



1000+ Clients, 2000+ Projects, 17+ Years



SEPHORA



KELLY-MOORE
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HEALTH GROUP



NETGEAR®
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CALIFORNIA CHAMPAGNE



lisi AEROSPACE



MEYER®



TriNet
Ambitions realized™





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ADDITIONAL RESOURCES

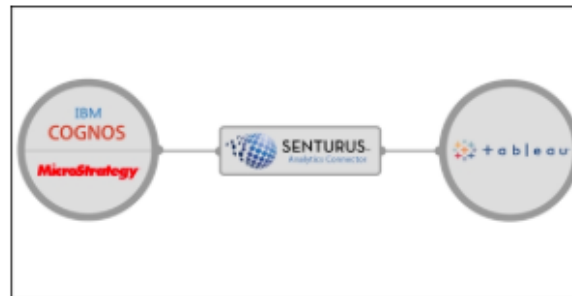
Upcoming Events www.senturus.com/events



INSTALLING COGNOS ANALYTICS V11

UPDATED TIPS FOR THE LATEST RELEASE

Thursday, February 15, 2018 - 11am PT (2pm ET) - 60 minutes



NORTHWESTERN CREATES TABLEAU VIZZES AGAINST LIVE COGNOS DATA

Thursday, February 22, 2018 - 11am PT (2pm ET) - 60 minutes



TABLEAU LIKE A PRO IN HALF A DAY

HANDS-ON WORKSHOP IN SAN FRANCISCO

Wednesday, February 28, 2018 - 8:30am – 12:30pm - 4 hours

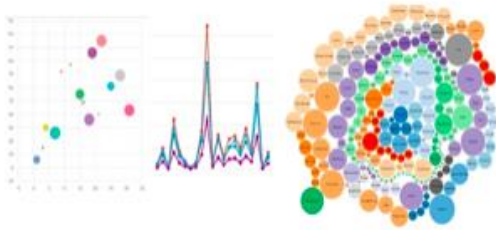


USING TABLEAU TO VISUALIZE SALESFORCE DATA

FREE, HANDS-ON WORKSHOP IN SAN FRANCISCO

Wednesday, February 28, 2018 - 12:30pm – 4:30pm - 4 hours

Upcoming Events www.senturus.com/events



INTRODUCTION TO COGNOS ANALYTICS V11

HANDS-ON WORKSHOP IN COSTA MESA, CA

Wednesday, March 7, 2018 - 10:00am – 2:30pm - 4 hours 30 minutes

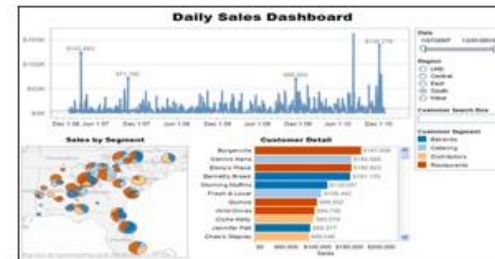


TABLEAU LIKE A PRO IN HALF A DAY

HANDS-ON WORKSHOP IN COSTA MESA, CA

Wednesday, March 7, 2018 - 8:30am – 12:30pm - 4 hours



USING TABLEAU TO VISUALIZE SALESFORCE DATA

FREE, HANDS-ON WORKSHOP IN COSTA MESA, CA

Wednesday, March 7, 2018 - 12:30pm – 4:30pm - 4 hours



THINK COCKTAILS WITH SENTURUS AT IBM THINK 2018

MEET US AT RI RA

Tuesday, March 20, 2018 - 6:30 pm – 9:30 pm - 3 Hours

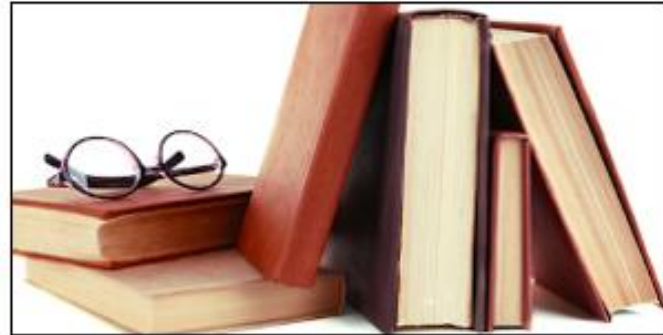
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BLOG

A great place to find out what's top of mind at Senturus.



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BLOG POST:

Installing and Configuring R for Use with Tableau

<http://www.senturus.com/blog/installing-configuring-r-use-tableau/>

Tableau and Cognos Training Options

New Expert Tableau Class includes Using R

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HOME FOCUS EXPERIENCE RESOURCES **TRAINING** ABOUT US CONTACT

WHY SENTURUS TRAINING

COURSE SCHEDULE

EXPI

PUBLIC VIRTUAL CLASSROOM

These live, online training courses are taught by real-life subject matter experts and include hands-on exercises and time for Q&A.

We offer Cognos Analytics courses to reflect valuable new features through Release 7 and Tableau updated for 10.

UPCOMING COURSES

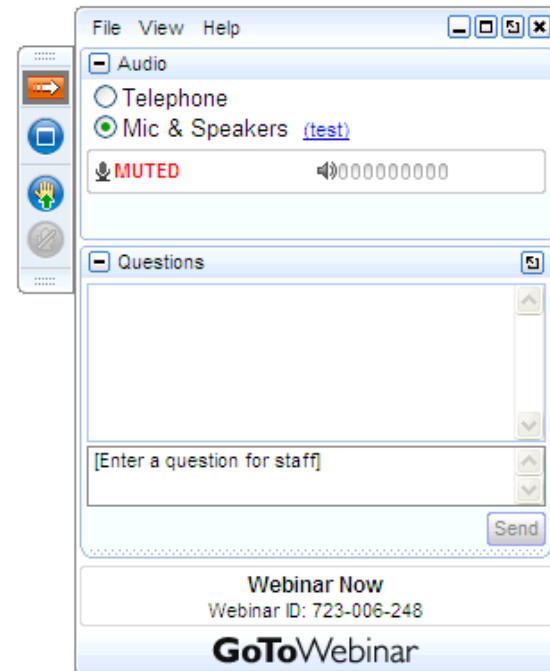
PLATFORM	VERSION	TOOL	TITLE	DATE	GO
TABLEAU	10	DESKTOP	EXPERT TABLEAU DEVELOPMENT	FEB 21	→

Q&A and Wrap-up

If your question or issue is broader than what can be answered today, contact us at

info@senturus.com

and we will set up a free consultation.



Thank You!

www.senturus.com
info@senturus.com
888 601 6010



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