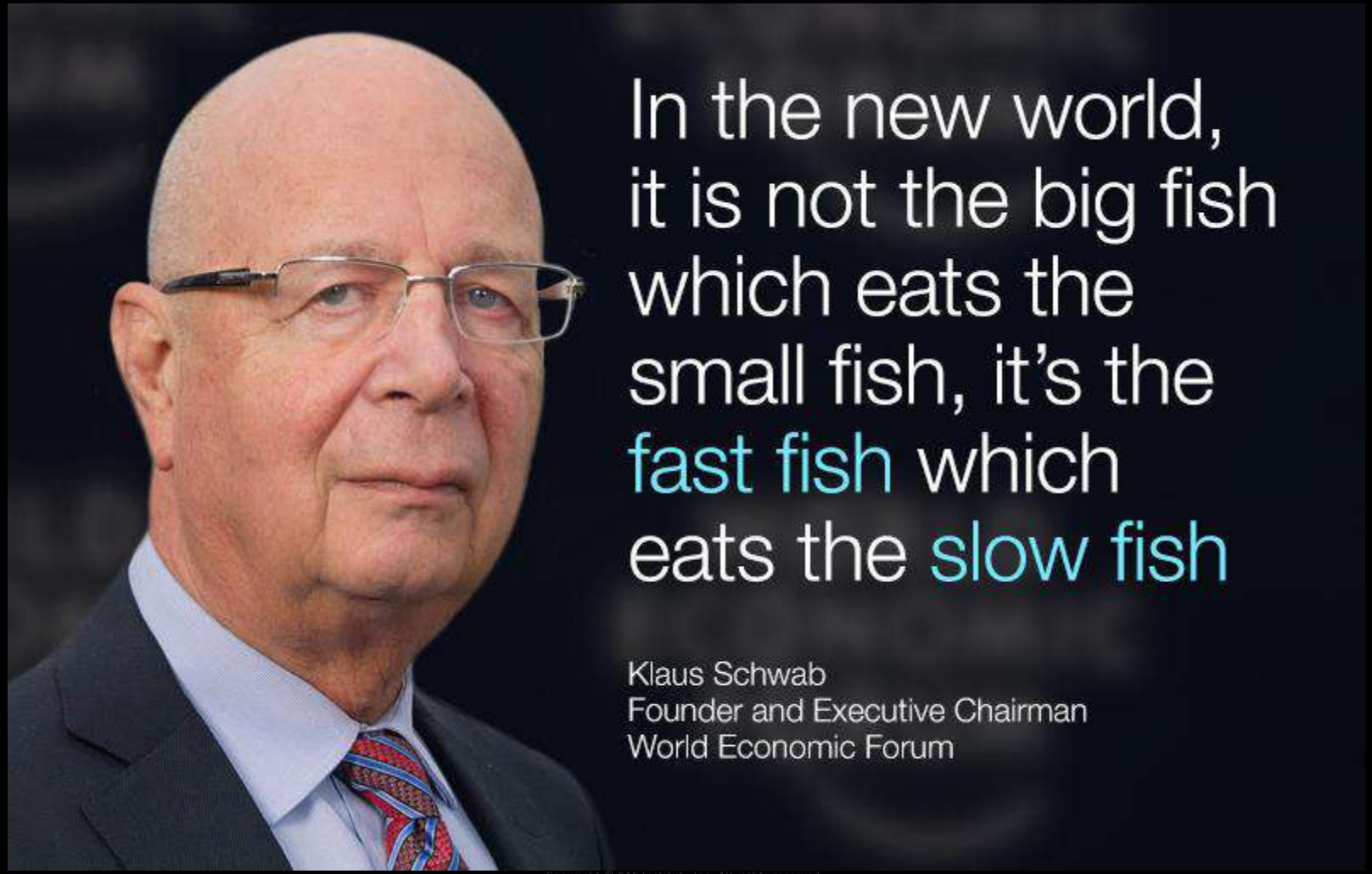
See What's Possible with SAS® VA Workshop

8th January 2019 – Morning Session

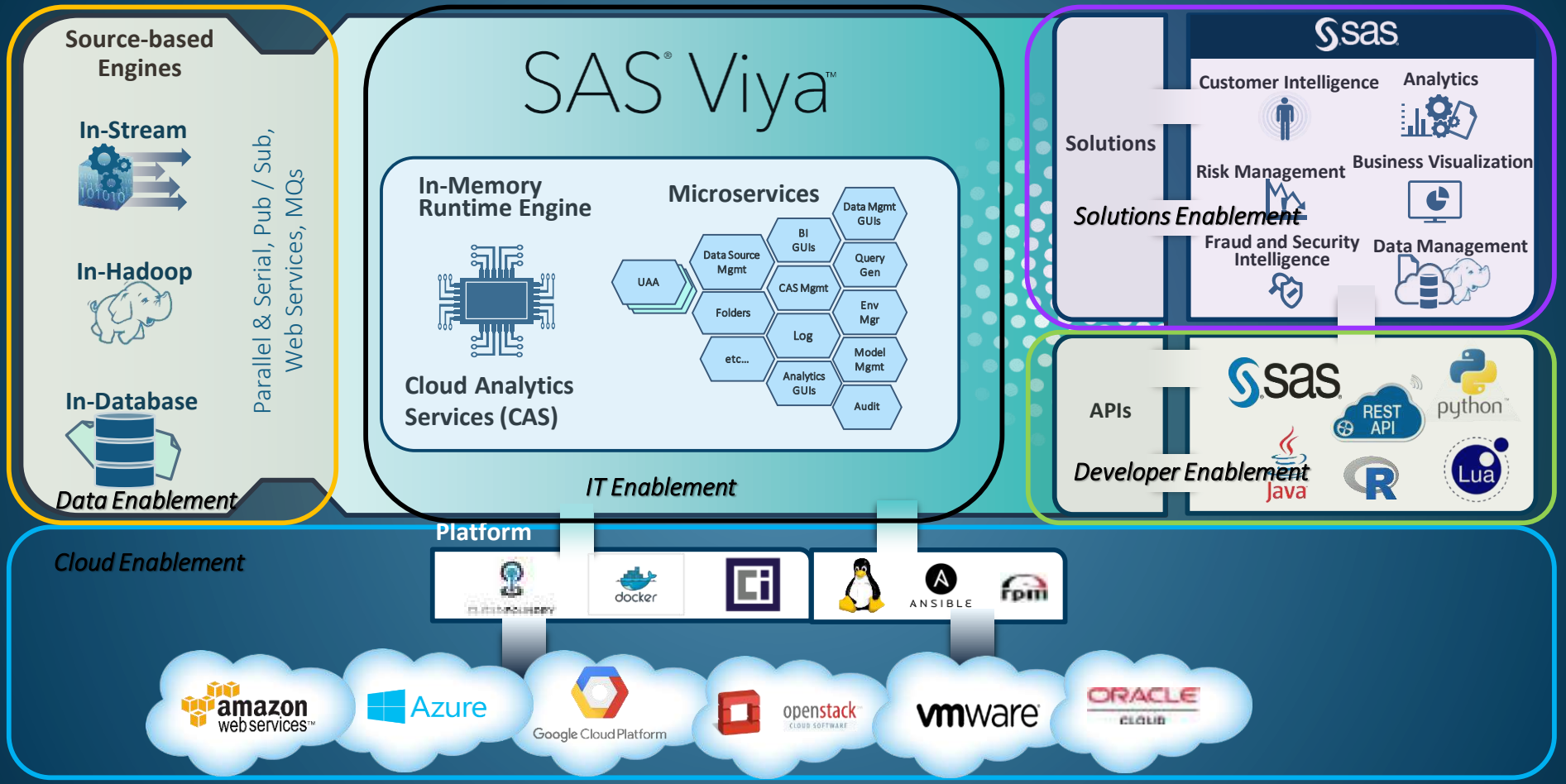
Agenda

09.00 AM	Introduction
09.15 AM	What's New in SAS® Visual Analytics (VA)?
10.45 AM	Tea Break
11.00 AM	Discover SAS® Viya® Advanced Analytics
12.30 PM	Lunch
01.30 PM	Managing SAS® Viya® VA environment
03.00 PM	Migrating from SAS® 9 VA to SAS® Viya® VA
03.45 PM	Q & A

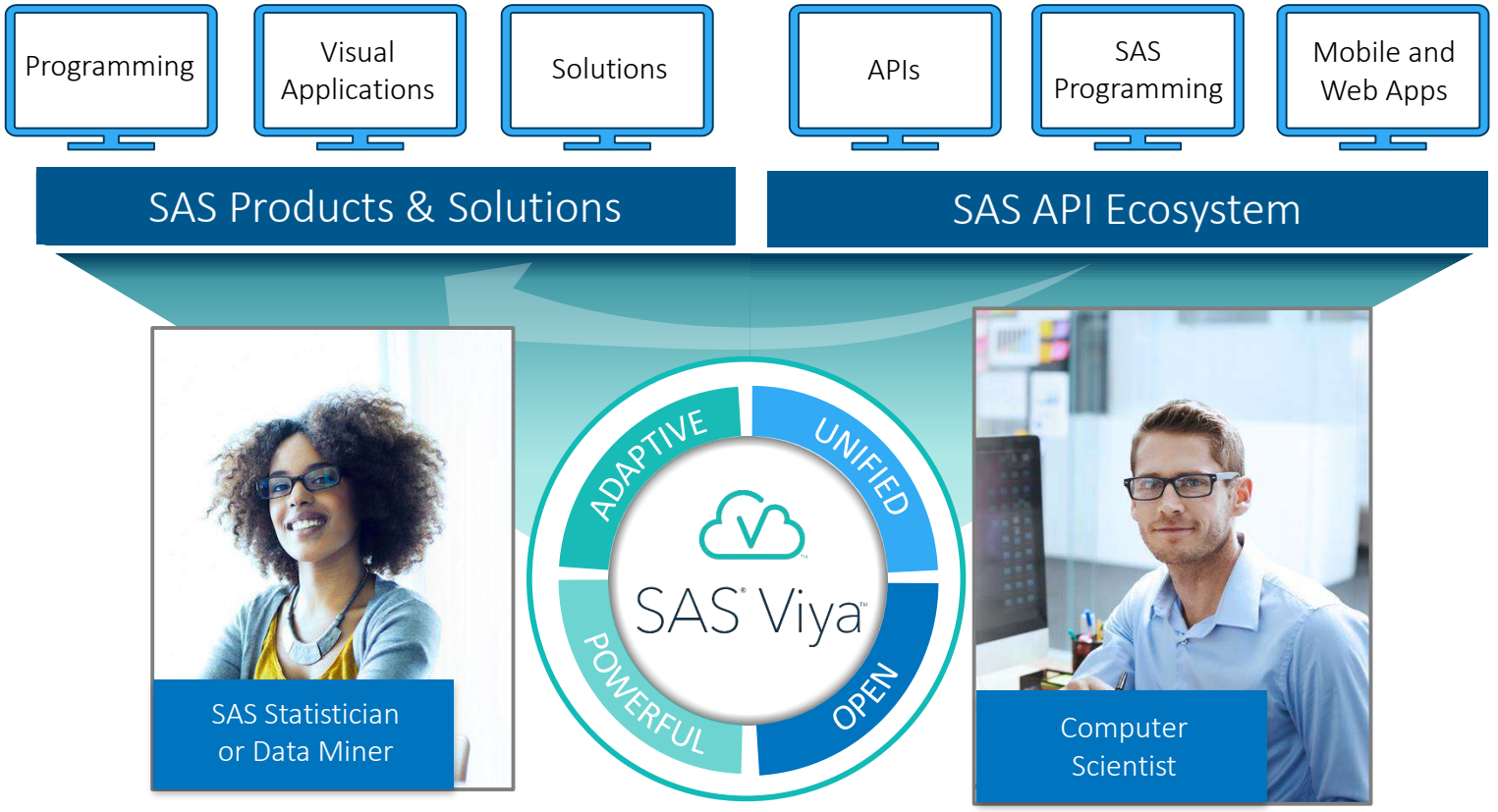



The Analytics Economy
Big Data Economy
Digital Economy
IoT Economy
API Economy


SAS® Viya™
Our digital transformation
to power the analytics economy



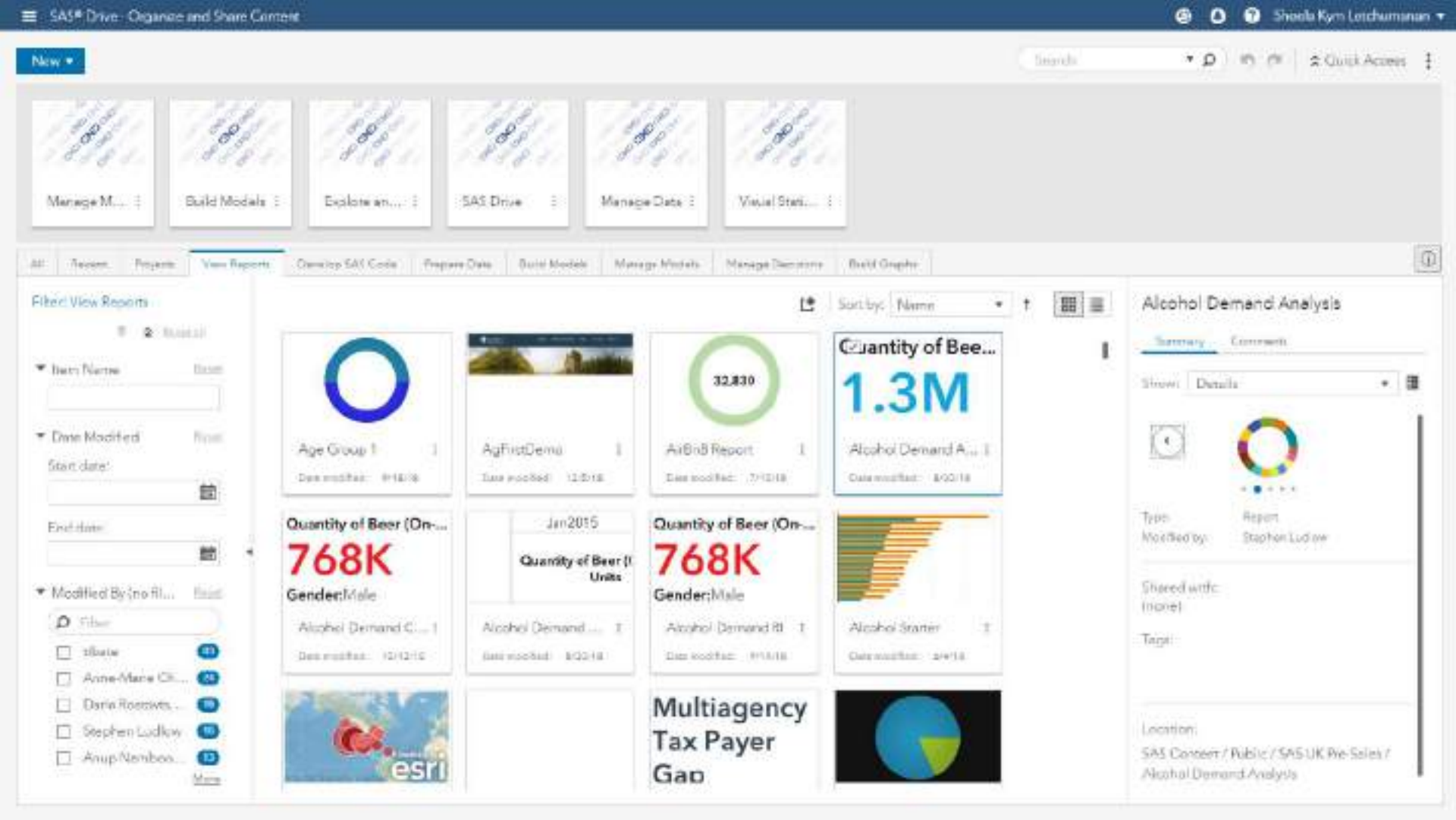
SAS® Deployment Strategy



What's New in SAS® Visual Analytics

On SAS® Viya

SAS® Visual Analytics


SAS® Drive - Organize and Share Content
Sheela Kym Letchumanan
New
Quick Access
Manage M...
Build Models
Explore an...
SAS Drive
Manage Data
Visual Stati...
Filter: View Reports
Item Name
Date Modified
Start date
End date
Modified By (no fi...
Sort by: Name
Age Group 1
AgFirstDemo
AsBnB Report
Quantity of Bee...
1.3M
Alcohol Demand A...
Quantity of Beer (On-...
768K
Gender:Male
Alcohol Demand C...
Jan2015
Quantity of Beer (
Units
Alcohol Demand ...
Quantity of Beer (On-...
768K
Gender:Male
Alcohol Demand fit
Alcohol Starter
Multiagency
Tax Payer
Gap
Alcohol Demand Analysis
Summary
Comments
Show: Details
Type: Report
Modified by: Stephen Ludlow
Shared with: (none)
Tags:
Location:
SAS Content / Public / SAS UK Pre-Sales / Alcohol Demand Analysis

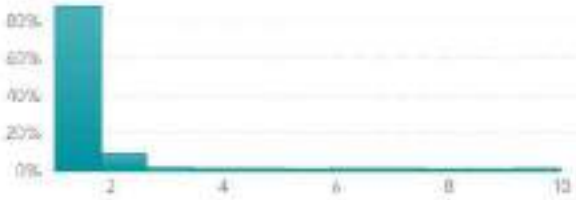
Conditions to View

5

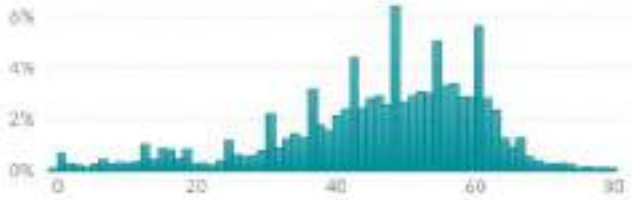
Emergency and Hospitalization Data

Patients with Health Conditions

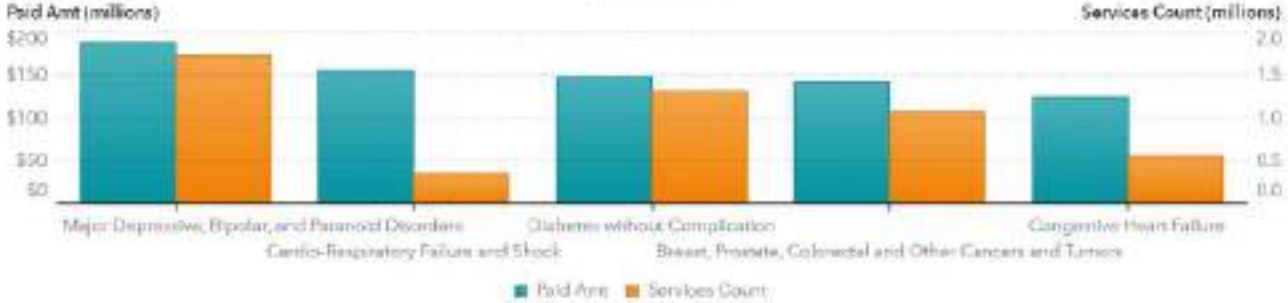
Number of Conditions per Patient

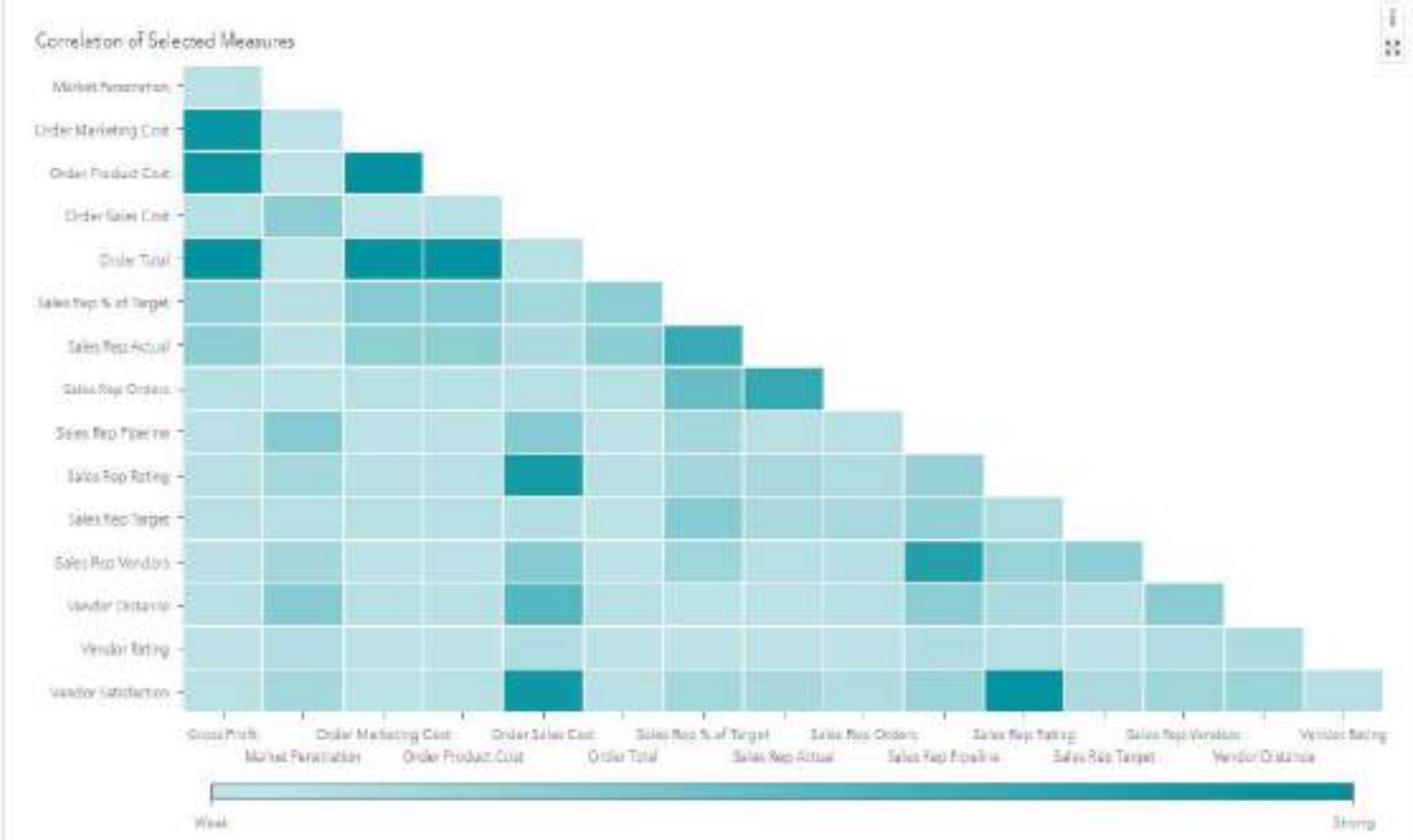


Age



Top Conditions





Options

Exploration

General

Name

Exploration

Theme

Report theme:

Marina

Report background:

Font:

Avant Next

Layout

AX Policy Exercise (WPC) Hospital Data

Objects

Filter

- Tables
  - Crosstab
  - List Table
- Graphs
  - Bar Chart
  - Box Plot
  - Bubble Change Plot
  - Bubble Plot
  - Butterfly Chart
  - Comparative Time Series Plot
  - Correlation Matrix
  - Dot Plot
  - Dual Axis Bar Chart
  - Dual Axis Bar-Line Chart
  - Dual Axis Line Chart
  - Dual Axis Time Series Plot
  - Gauge
  - Geo Map
  - Heat Map

Hospital Data

Conditions to View

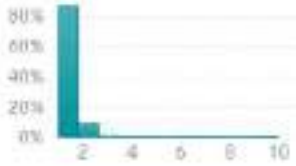
5

Emergency and Hospitalization Data

Patients with Health Conditions

superutilizer
- 1%
- 2-5%
- 6-10%
- 11-25%
- Remaining Population

Number of Conditions per Patient



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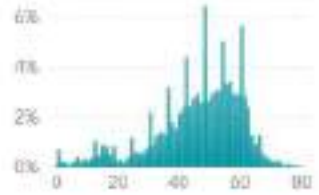
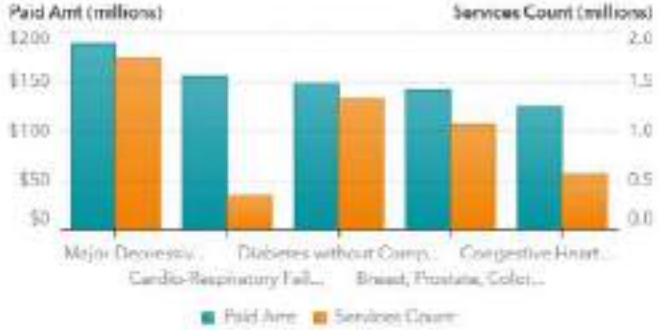


Top Conditions

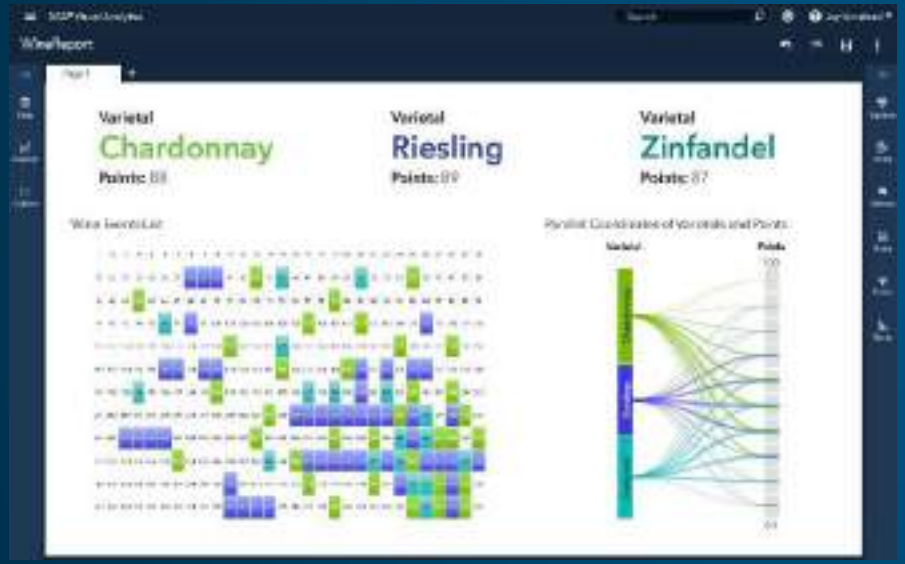


Data Roles

Pie Chart 1

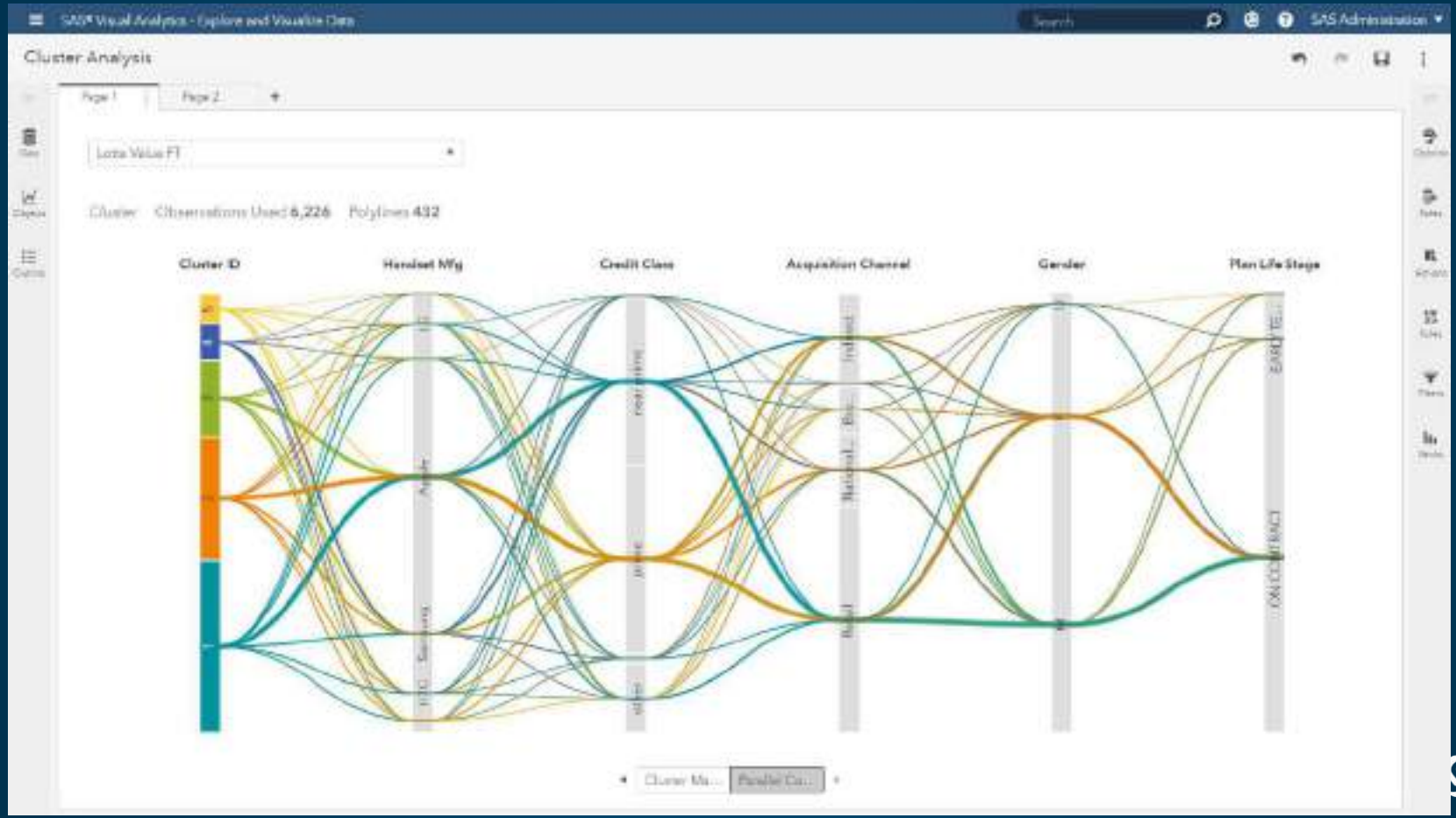
- Category
  - superutilizer
- Measure
  - Patient Count
  - + Add
- Group
  - + Add
- Lattice columns
  - + Add
- Lattice rows
  - + Add
- Data tip values
  - Patient Count
  - superutilizer
  - + Add
- Animation
  - + Add
- Hidden

Visual Exploration

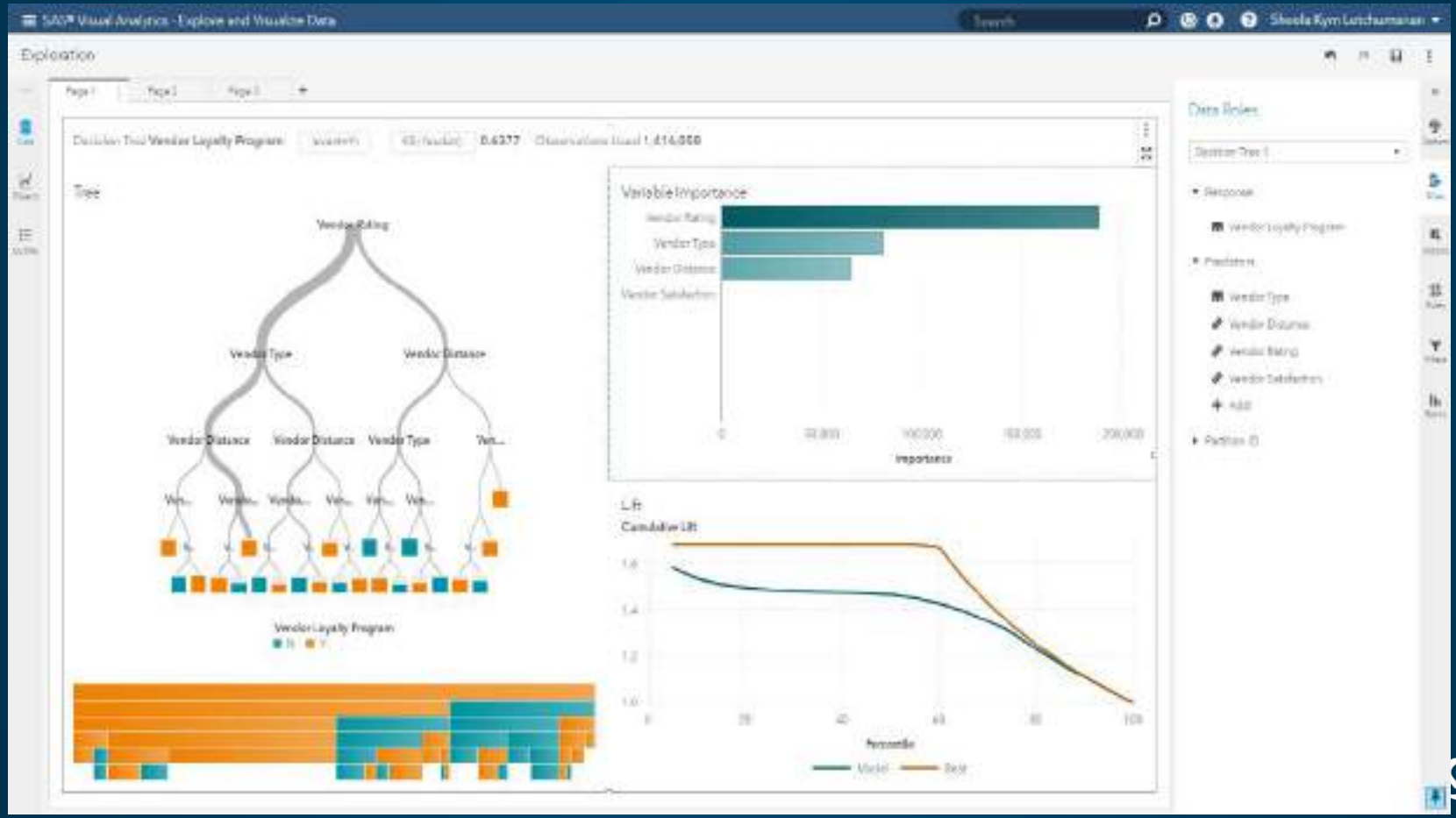


- Auto-charting
- Discover relationships, trends, outliers, clusters
- Forecasting and scenario analysis
- Decision trees
- Text analysis (e.g. word cloud)
- Interaction between objects
- Custom calculations
- 3rd-party visualizations (e.g. D3, Google Chart)

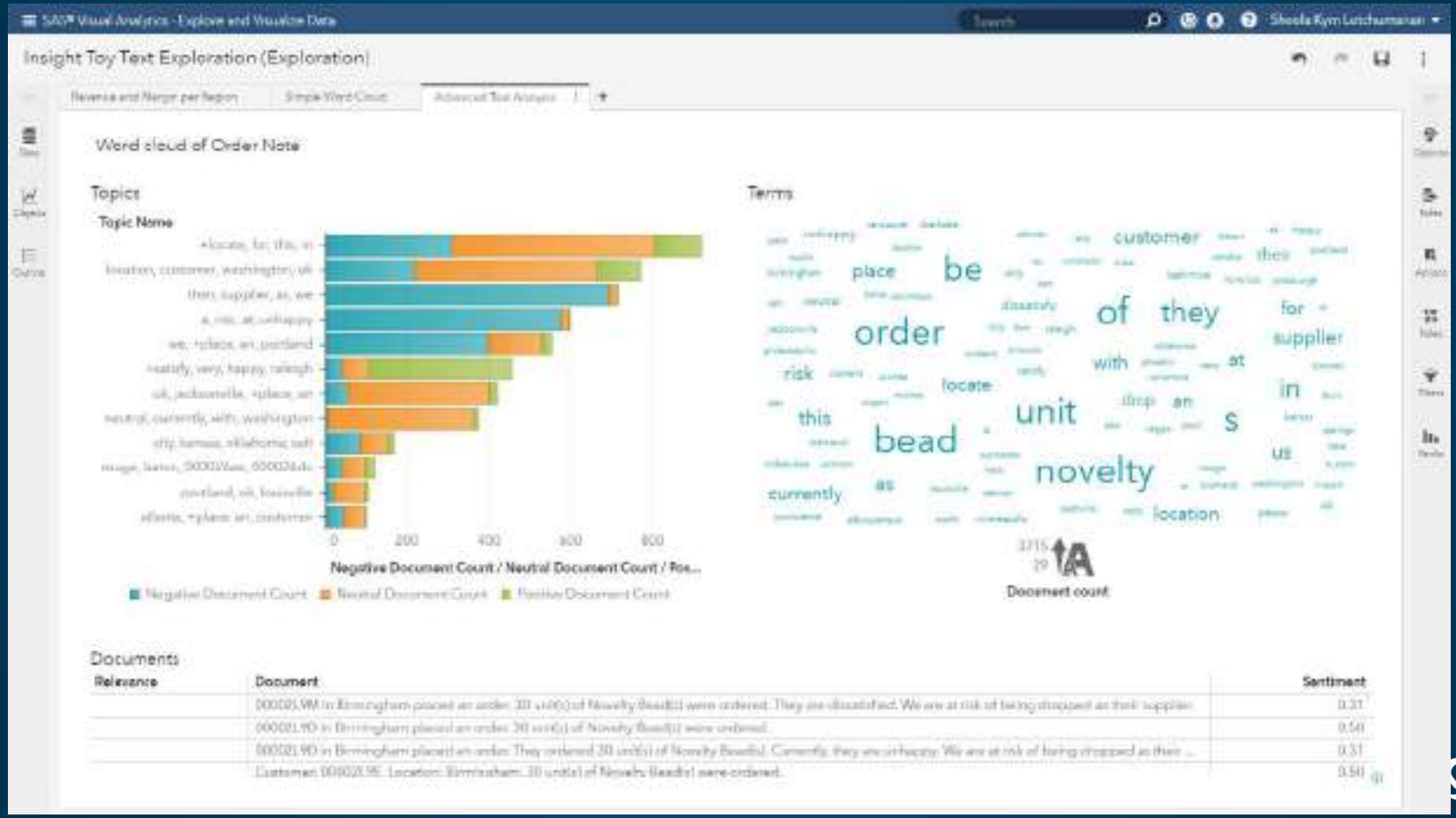
Visual Exploration – KYC

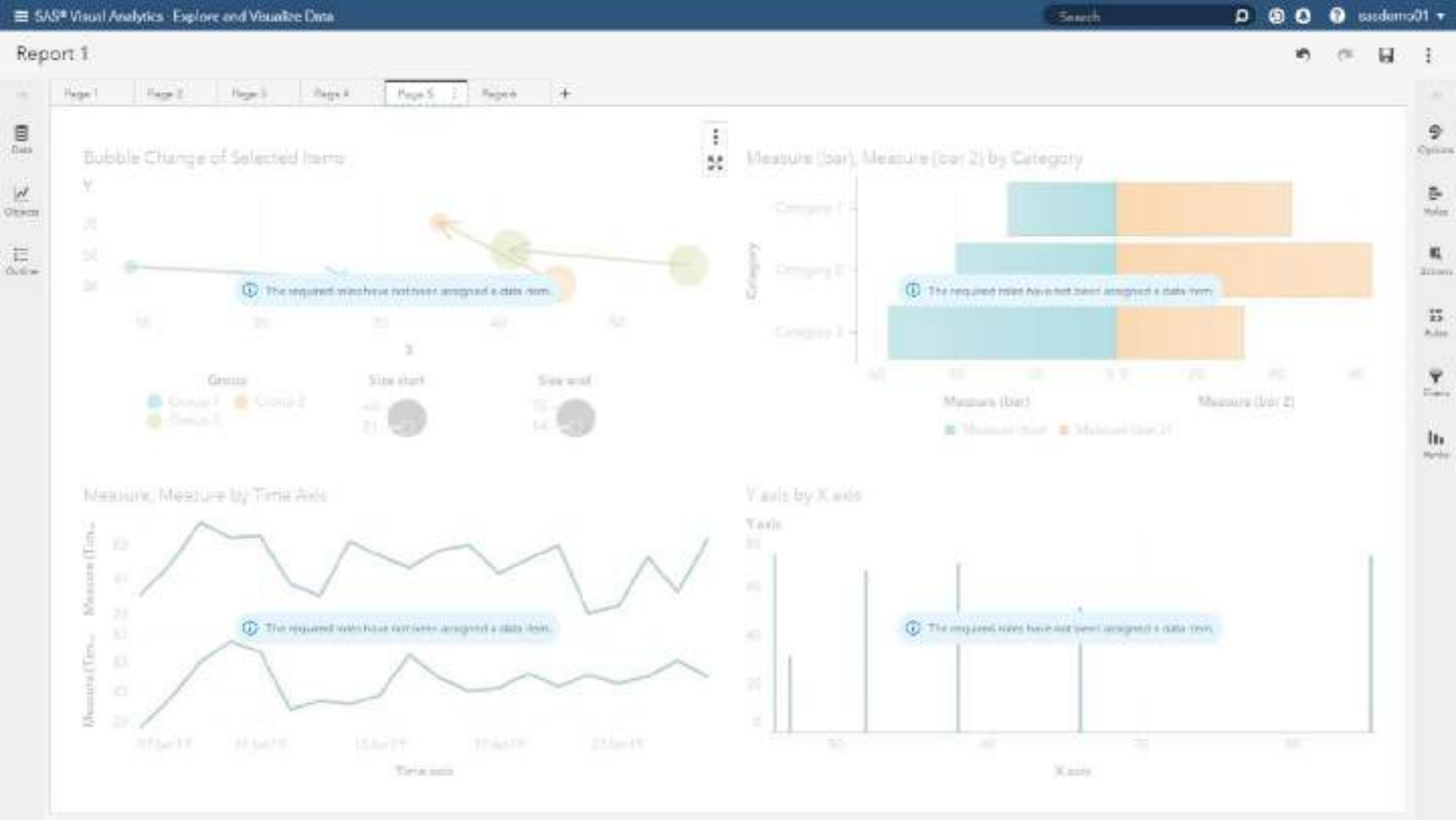


Visual Exploration – Decision Tree



Visual Exploration – Text Analysis




SAS® Visual Analytics · Explore and Visualize Data
Search
sasdemo01
Report 1
Page 1
Page 2
Page 3
Page 4
Page 5
Page 6
Data
Objects
Outline
Options
Notes
Actions
Rules
Filters
Marks
Bubble Change of Selected Items
Measure (bar), Measure (bar 2) by Category
Measure, Measure by Time Axis
Y axis by X axis
Time axis
X axis

Report 1

Page 1 | Page 2 | Page 3 | Page 4 | Page 5 | Page 6 +

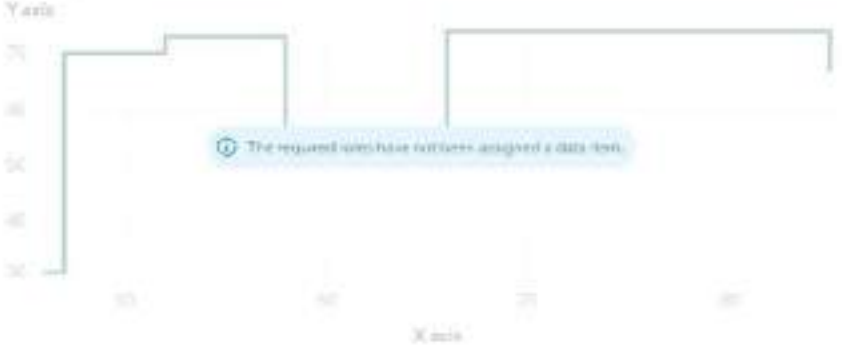
Data
Objects
Outline

Options
Notes
Actions
Filters
Marks

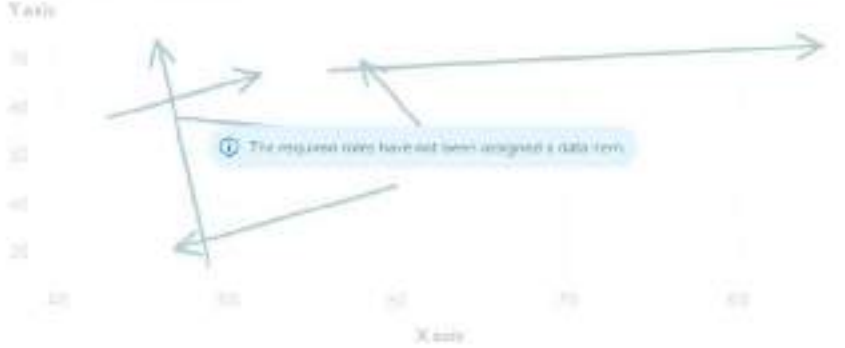
Task from Start to Finish

Measure by Category

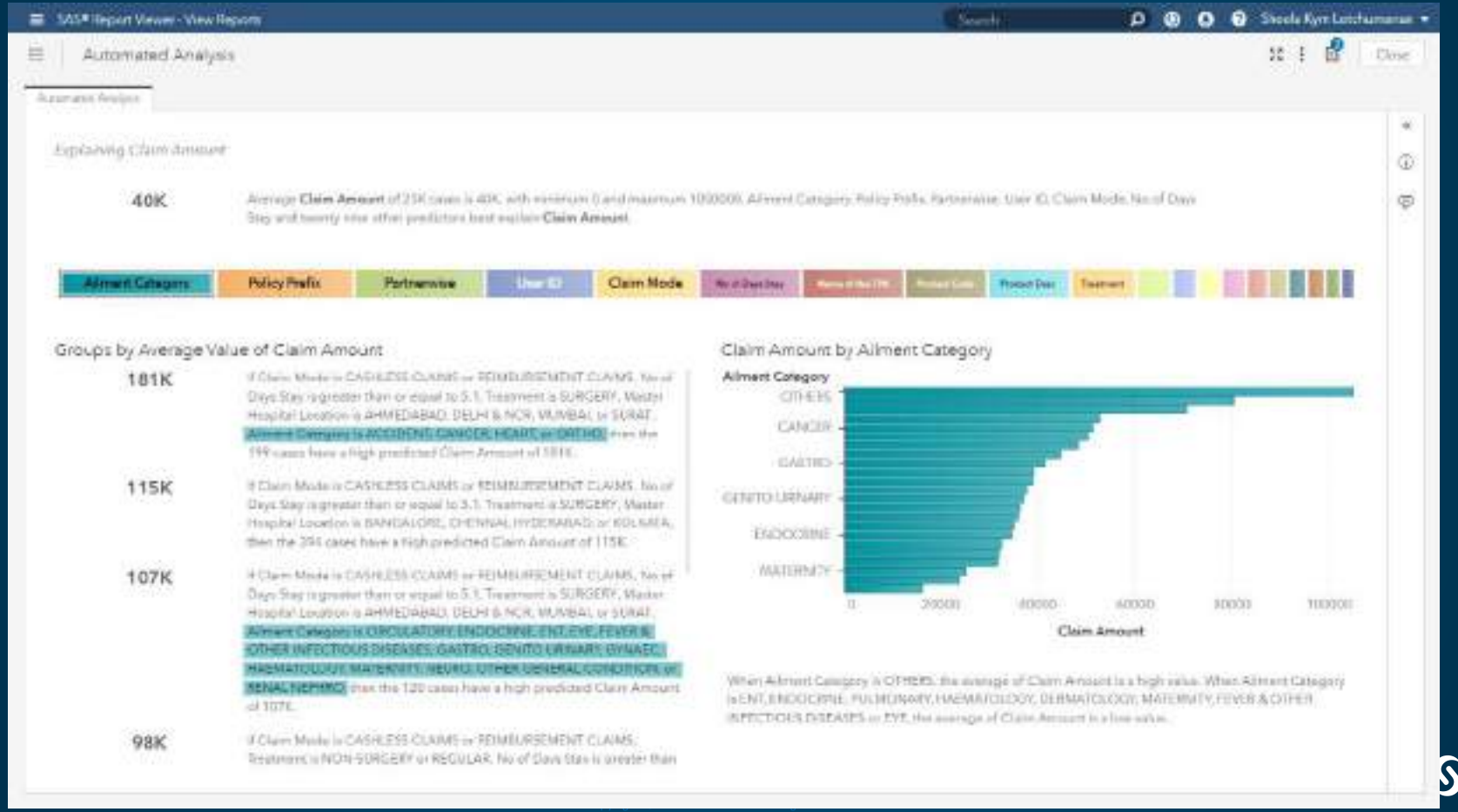
Y axis by X axis



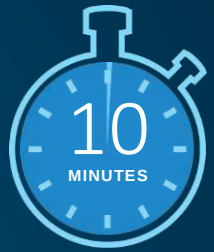
Vector Plot of Selected Items



Visual Exploration - Automated Analysis



Hands-On Exercise



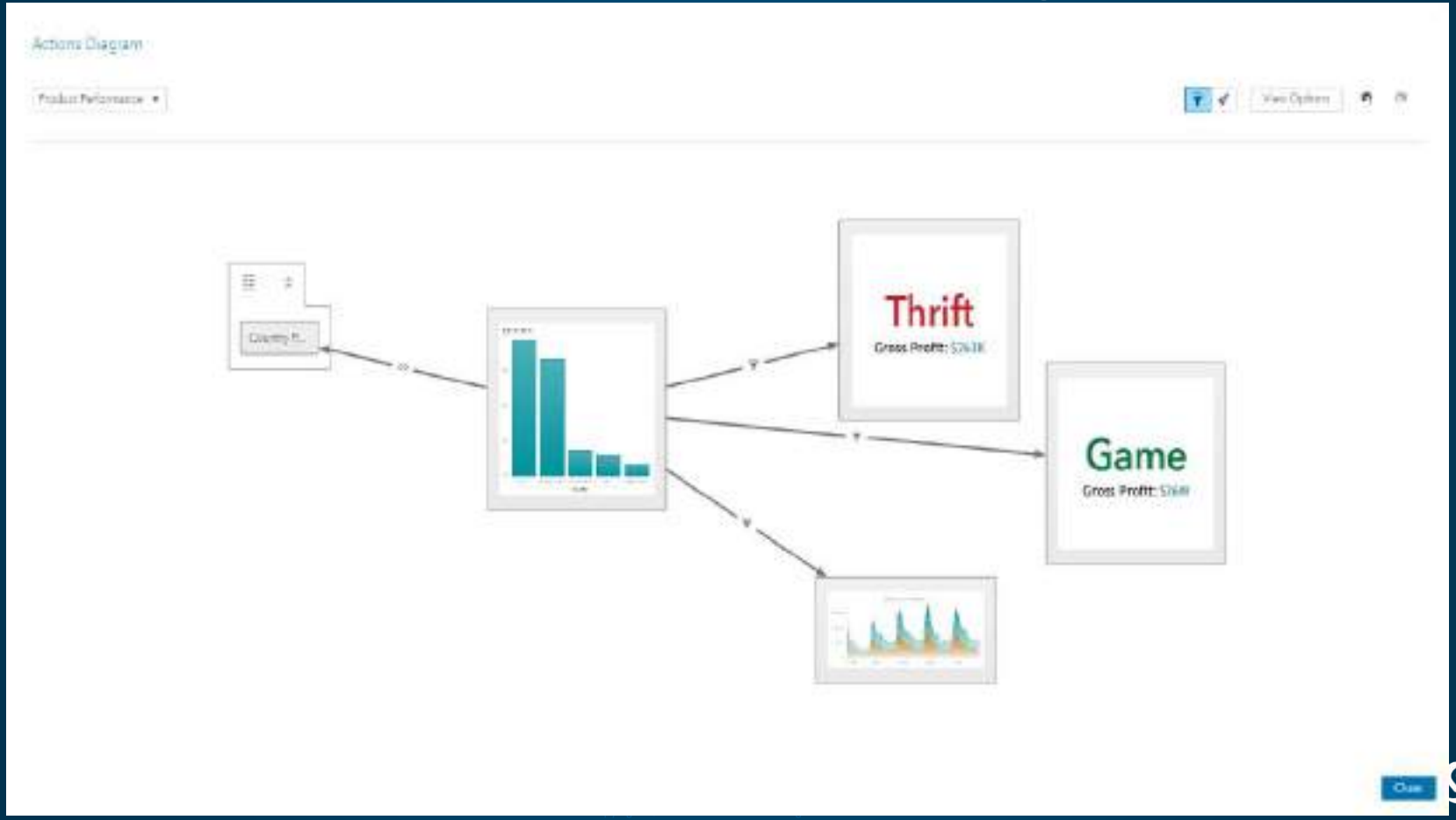
Tasks:

1 Create an Automated Analysis

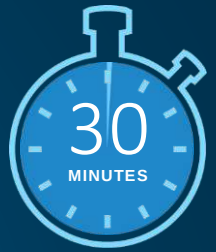
Interactive Reporting

- Responsive and precise layouts
- Dashboard creation
- Report formatting for user interactivity; filters, prompts, linking, etc.
- Share, interact and collaborate

Intuitive Interaction Design



Hands-On Exercise



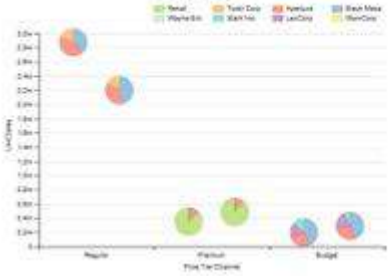
Tasks:

1 Create an Interactive Report

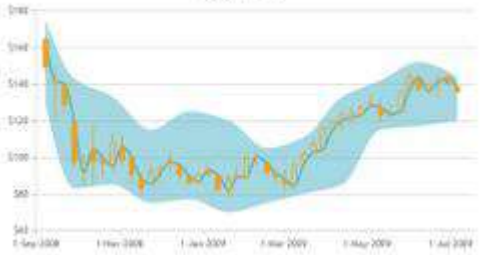
D3.js : Data-Driven Documents

Third Party Visualization Support

Dimple

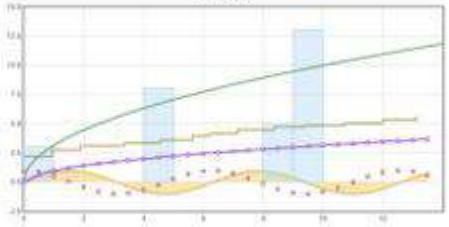


jqPlot



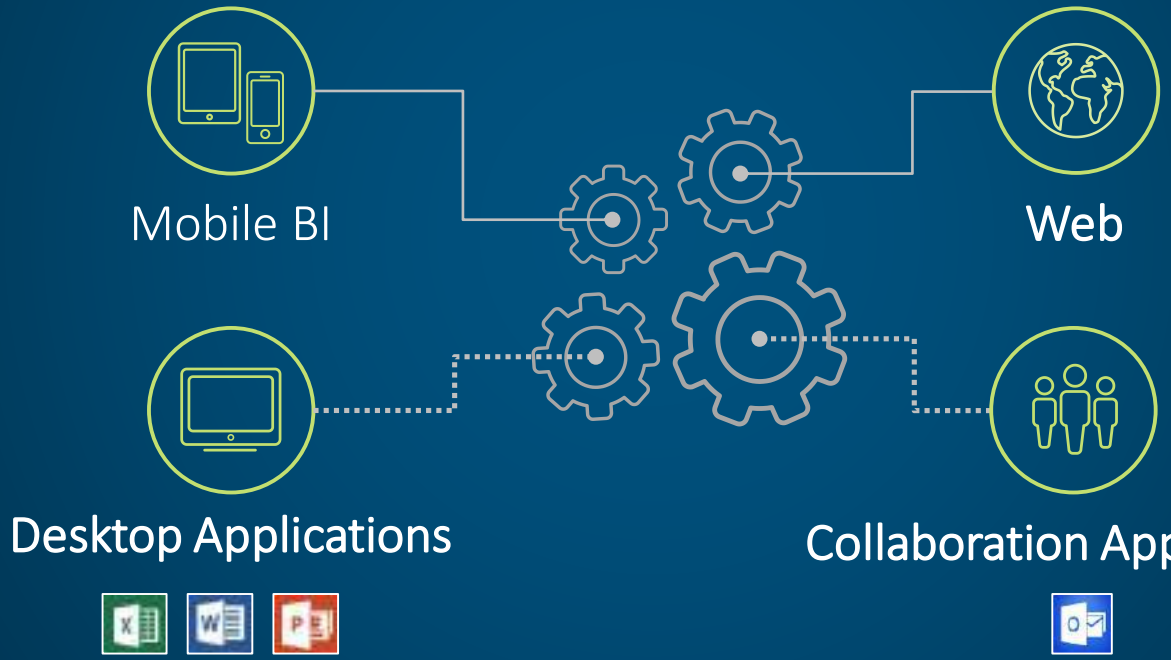
D3.js

Flot



Google Charts

Collaboration and Information Sharing



Visual Analytics

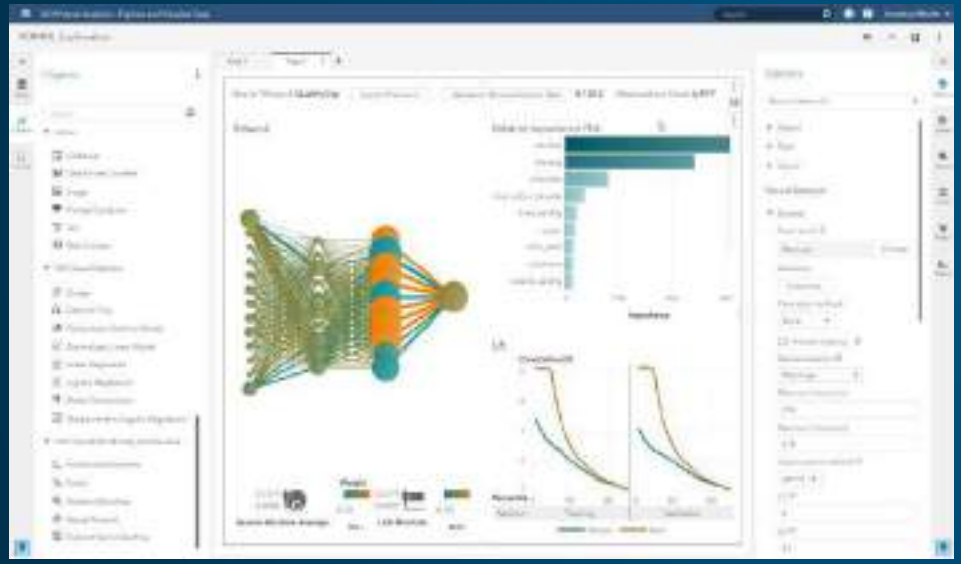
Access Reports Anywhere

Tea Break

20 minutes

SAS® Viya® Advanced Analytics

Modern Machine Learning

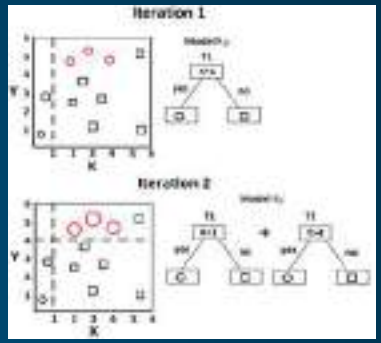


- Forrest
- Neural Network (including Deep Learning)
- Gradient Boosting
- Support Vector Machines
- Factorization Machines
- Bayesian Networks
- Autotuning

Machine Learning

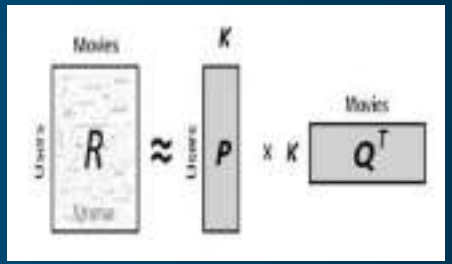
Gradient Boosting:

- An ensemble of short decision trees (stumps)
- Generally used in ranking systems



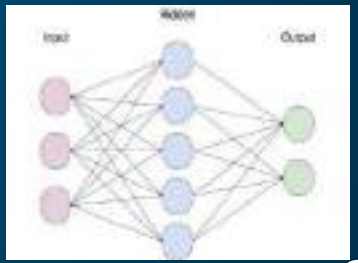
Factorization Machine:

- A model that factorizes a matrix into a product of matrices
- Useful for data sets with many missing values (sparse)
- Generally used in Recommendation Engines

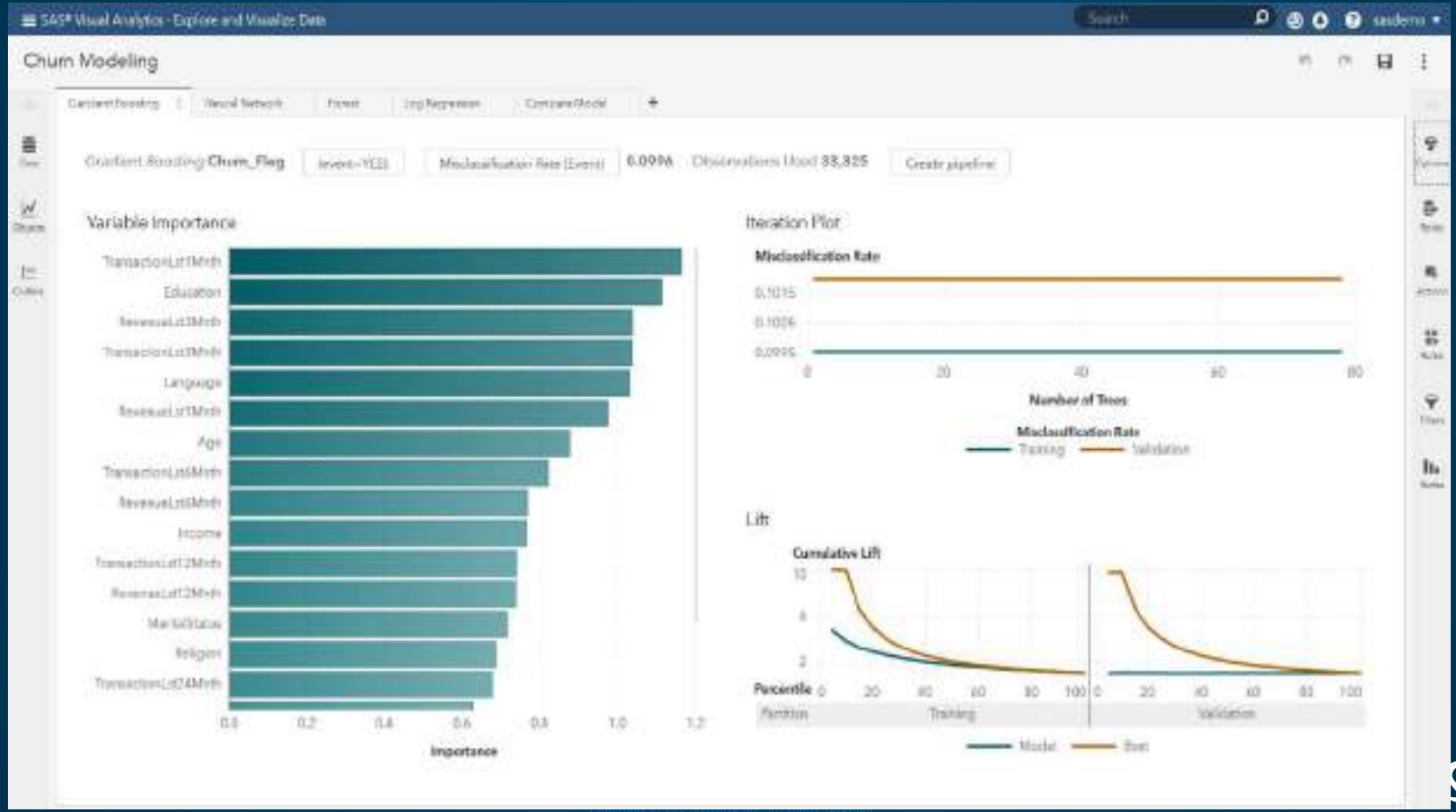


Neural Network:

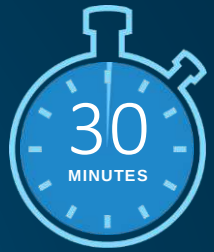
- A series of layers with at least one input layer, hidden layer and output layer
- Generally used in Natural Language Processing (NLP) and Pattern Recognition



Build Models - Interactively



Hands-On Exercise



Tasks:

1 Build machine learning models
2 Assess and compare models

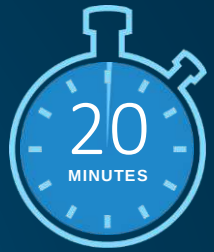
What to Offer Different Customer and Anonymous Visitors?

Recommendation systems enable marketers and brands to help consumers:

- *Finding things that are interesting and useful*
- *Narrow a set of choices*
- *Explore options*
- *Discover new things.*

Factorization Machine

	Content A	Content B	Content C	Content D	Content E
Customer A	4		3	1	2
Customer B		5	3	4	
Customer C		5			3
Customer D	2		4		2
???		?	3	4	



Hands-On Exercise

Tasks:

1 Build a Factorization Machine model

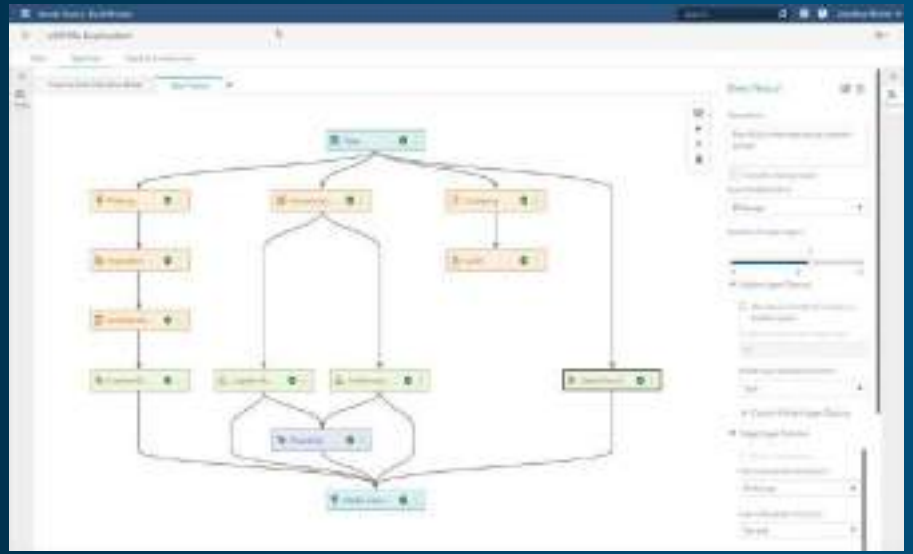
2 Consume results from Factorization Machine model

Quiz 1

Risk taker, Upper middle, Male and 30-50 years old

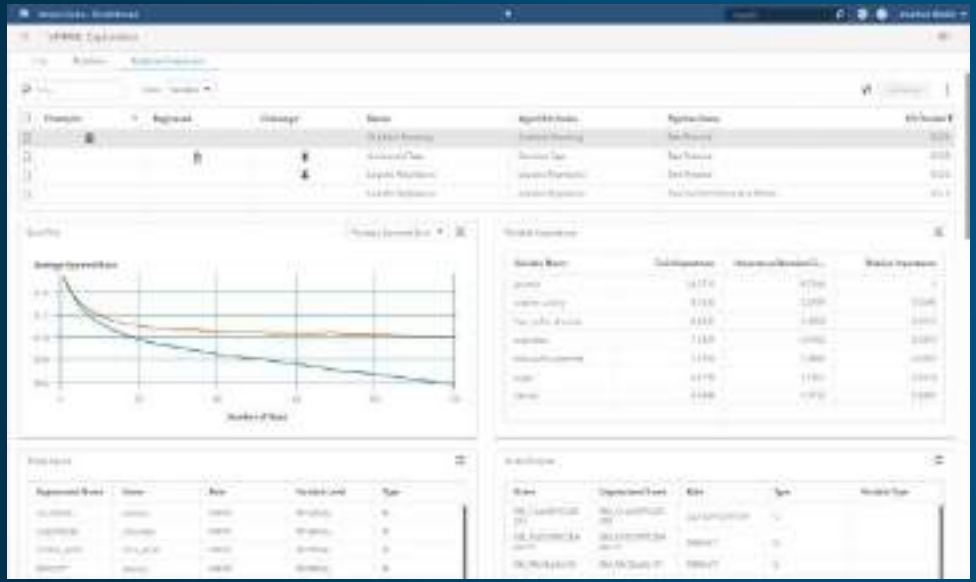
What is the most recommended F&B?

Model Studio



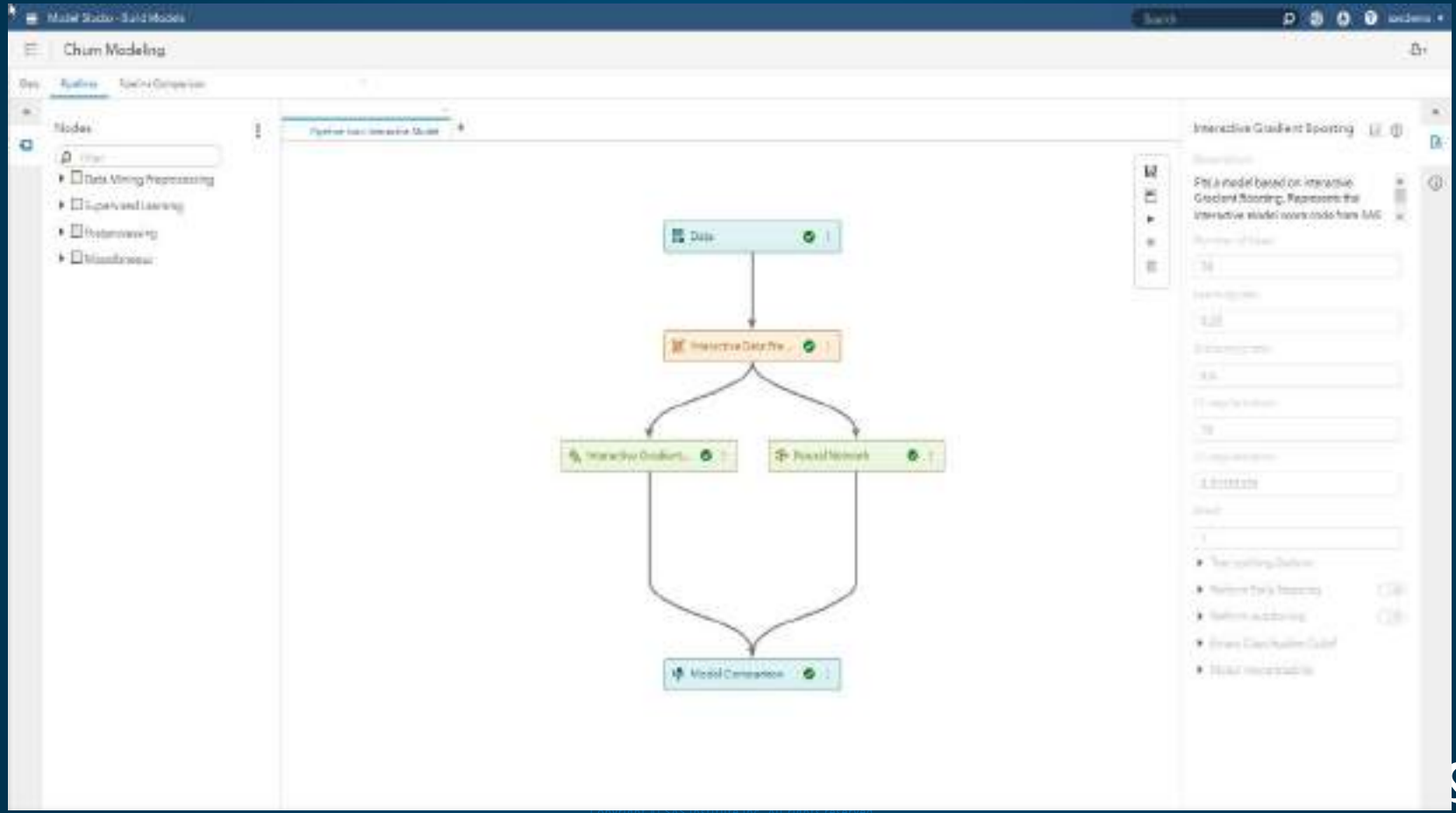
- Pipeline of activities
- Drag and drop and access to code
- Nodes are run asynchronously
- Reproducibility
- SAS best practice toolkit

Comparison and Deploy

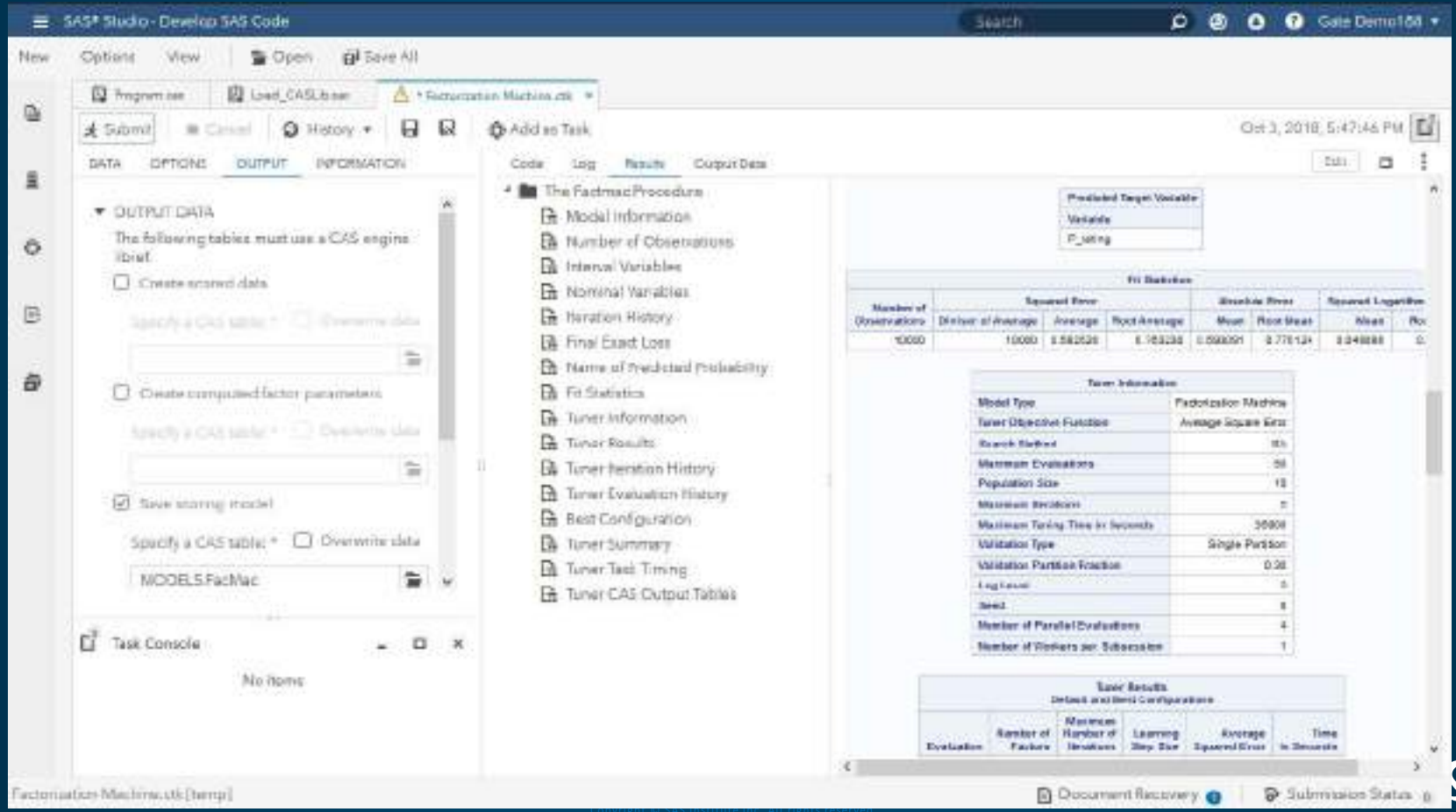


- Model comparison summaries
- Interactively assess models
- Assessment charts for partitioned data
- Publish score code; batch, API call, in-database

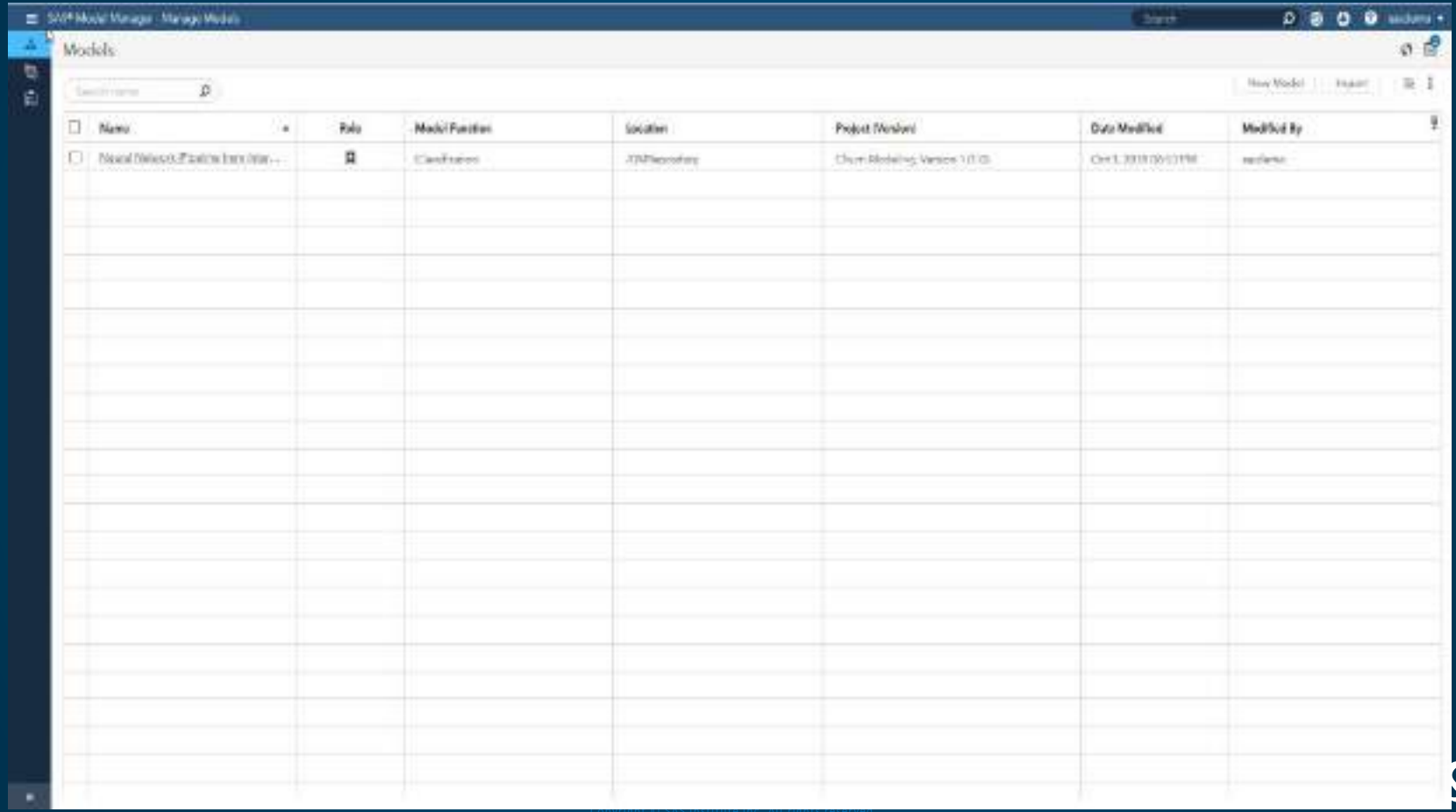
Build Models - Pipeline



Build Models - Programming



Publish Models



Additional Information

Links

- Free Trials
  - https://www.sas.com/en_my/trials/software/visual-analytics/ep-form.html
  - https://www.sas.com/en_my/trials/software/data-mining-machine-learning/ep-form.html
  - https://www.sas.com/en_my/trials.html

- eLearning
  - https://support.sas.com/edu/elearning.html?ctry=us&productType=library
  - https://video.sas.com/category/videos/sas-viya_

Links

- SAS Community
  - https://communities.sas.com/
- SAS on Github
  - https://github.com/sassoftware