



Looker Bootcamp:

Analyzing and Visualizing

Data with Looker

Dr. Ernesto Lee, CIO

September 9, 2024

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TriveraTech.com



Welcome!

Trivera Technologies: Quick View

- Trained 125,000+ students worldwide since 1999
- Offer hundreds of skills-focused, expert led courses and programs in AppDev, coding, web and mobile development, software engineering, data, AI & machine learning, data science & analytics, security, business skills and a wide range of tools and tech
- Offer an extensive Public Schedule
- Federally Certified Women Owned Small Business / WOSB
- Not a Reseller! We are the Delivery Team focused on your success. Many partner firms resell our services.

We Deliver Skills Programs to...

- **Individuals:** Public schedule and coaching.
- **Teams:** Small group private courses, programs, and camps.
- **Enterprise Solutions:** Scalable solutions for end-to-end business transformation, upskilling, reskilling, boot camps, coaching, new hires, etc.

We're Flexible!

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- Collaborative services tailored to your needs, goals and desired skills

About Me

- **Dr. Ernesto Lee**, Chief Innovation Officer, Trivera Technologies; Professor Data Analytics at Miami Dade College
- Dr.Lee@triveratech.com or LearnAI@triveratech.com

What We'll Touch On Today

- Discover the power of data analytics and visualization with our hands-on, two-day introductory course Looker Bootcamp:
- Analyzing and Visualizing Data with Looker.Q&A, or please send questions to LearnAI@triveratech.com
- Hand-Out / Tip Guide: **AI for All: Ensuring Safe Use in Your Workplace**



LEARNING SERVICES





Our Focus

At Trivera, **Experience is Everything.**

Our mission is to provide our students with hands-on, practical experiences that truly make a difference. We partner closely with our clients and students to ensure they gain the job-ready skills needed to thrive by the end of our classes. Our courses are guided by highly-experienced, enthusiastic experts who focus on teaching valuable skills and practical problem-solving techniques, coaching students to success every step of the way. We want every student to exit our classes feeling confident, skilled, and excited about the next steps in their project, role or career.

3

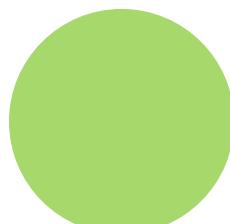
Kim Morello
CEO, Trivera Technologies

<https://github.com/fenago/looker-bootcamp>

Location of all Lab Guides and Lab Files

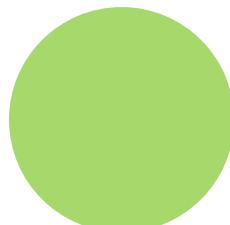


Everyday AI on the Job: How AI is Enhancing our Work Lives



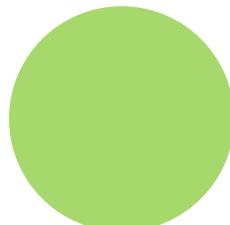
Automating Routine Tasks

AI tools like RPA (Robotic Process Automation) streamline repetitive tasks, freeing up time for more strategic work.



Enhancing Customer Service

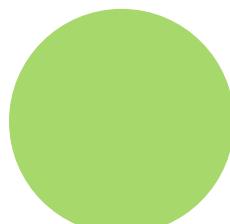
AI chatbots and virtual assistants handle customer inquiries efficiently, providing instant support and improving satisfaction.



Data Analysis and Insights

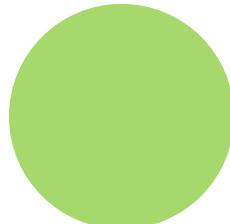
AI algorithms process large datasets quickly, uncovering trends and insights that inform business decisions.

5



Content Creation

AI-powered tools assist in writing, editing, and generating creative content, making marketing and communication more efficient.



Personalizing Marketing Efforts

AI analyzes customer data to tailor marketing campaigns, increasing engagement and conversion rates.

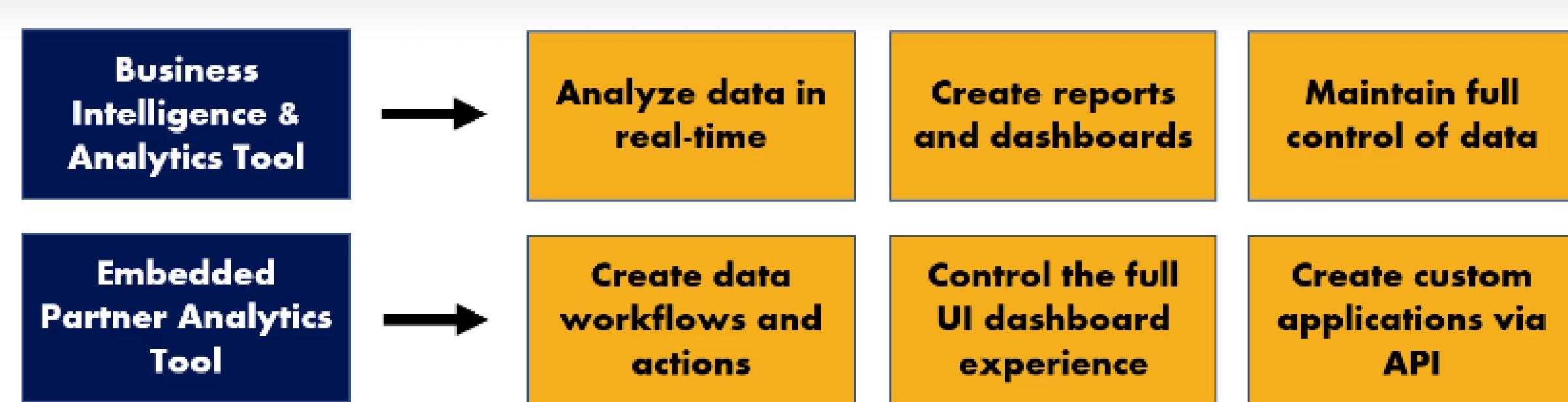




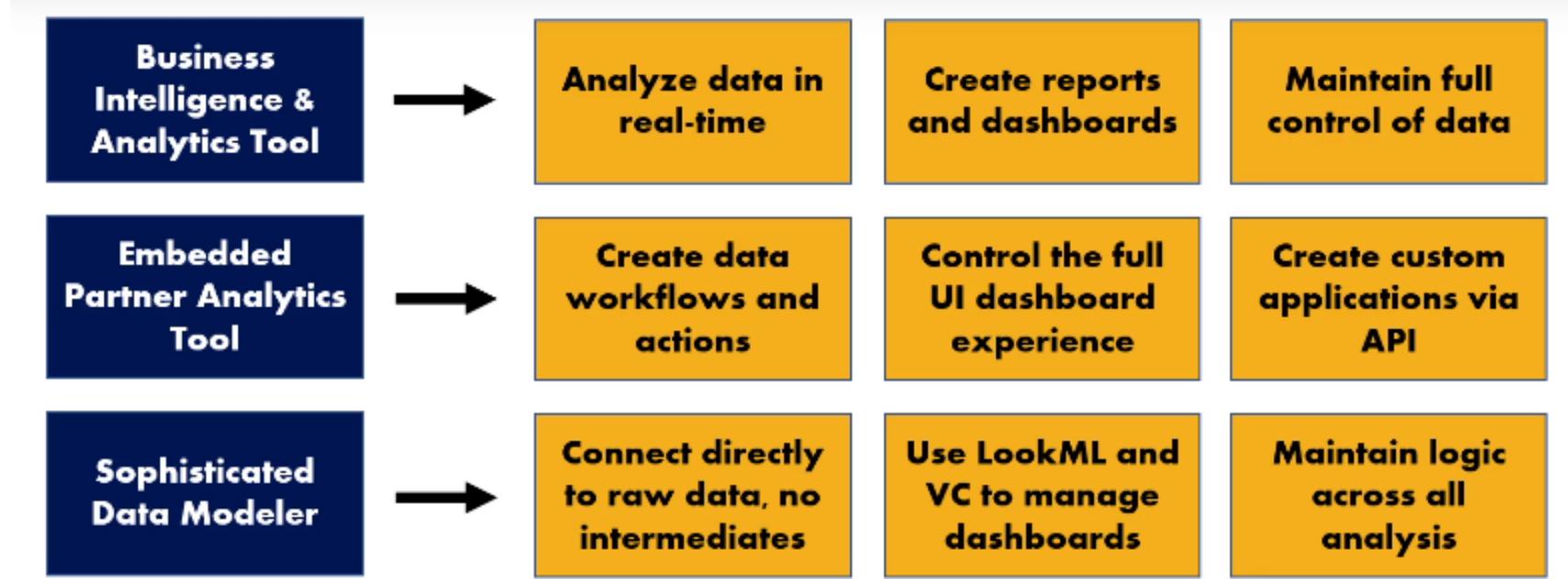
1. GETTING STARTED WITH LOOKER



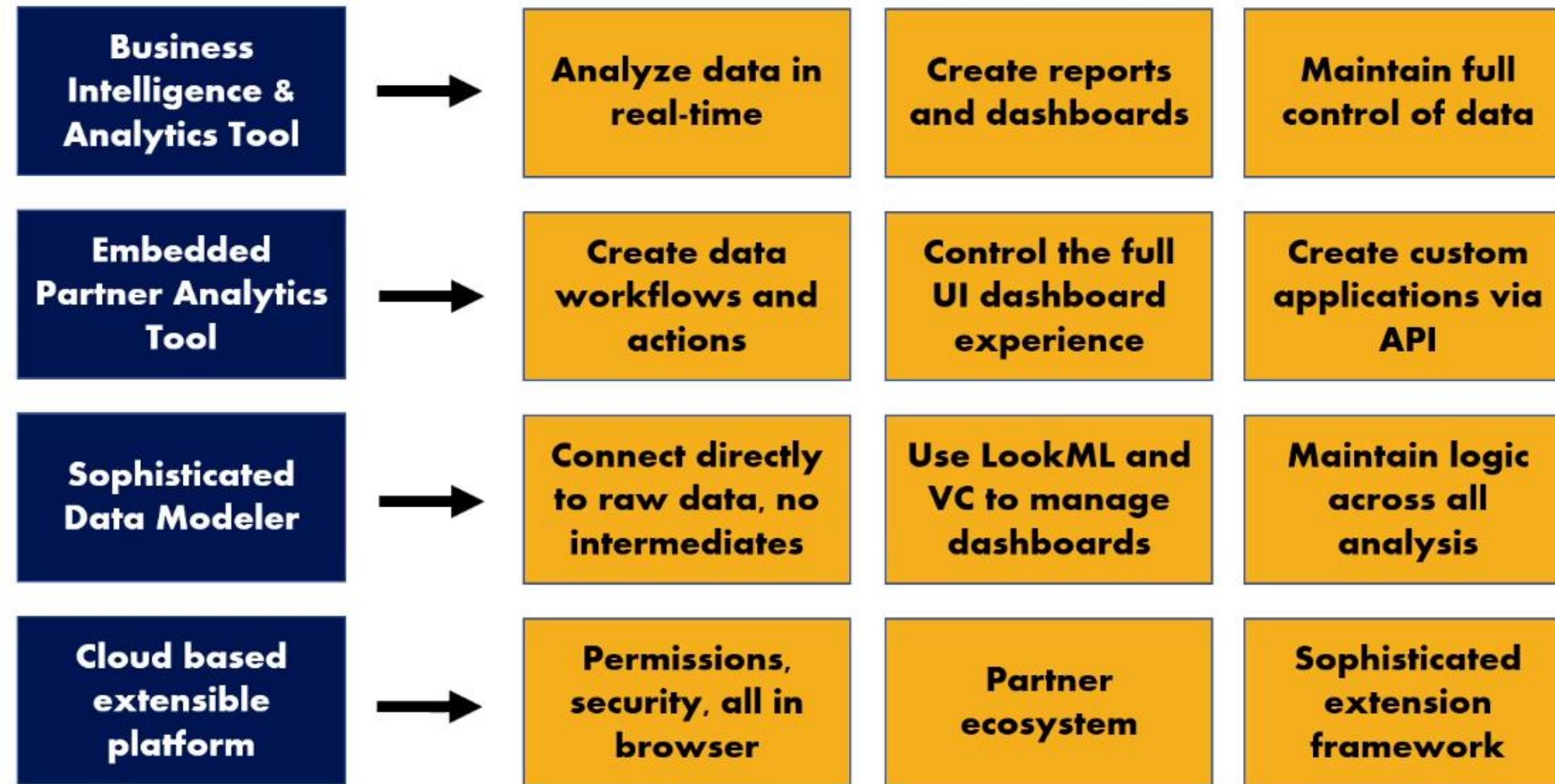
What is Looker?



What is Looker?



What is Looker?





What is Looker

Cloud based

Workflows and delivery

Partner network

Supports multi-DB

Data model / LookML

No-code, curative and user-friendly

Unified and governed metrics

24/7 DB connected

Google

Features

Tableau

- **No desktop software required**
- **Optimized for the cloud**
- **A trusted data model**
- **API enabled data experiences**
- **Modern in-product live support**

<https://looker.com/compare/looker-vs-tableau>

What Else is
out there?

13

Power BI

- **Modern multicloud data platform**
- **Power SQL-based modeling language**
- **Seamless 100% web-based experience**
- **Trusted data**
- **Live support with Looker experts**

<https://looker.com/compare/looker-vs-power-bi>

What Else is
Out There?

14

**Business intelligence,
analytics, insightful,
drive smarter outcomes
in your organization**

**Improve your analytics
toolkit and get [REDACTED]**

We can help 2000+ companies find true power and choice in their data

moderna

Using the right dose of data



Raising their customer retention game

twilio

Developing a single source of truth

AVANT

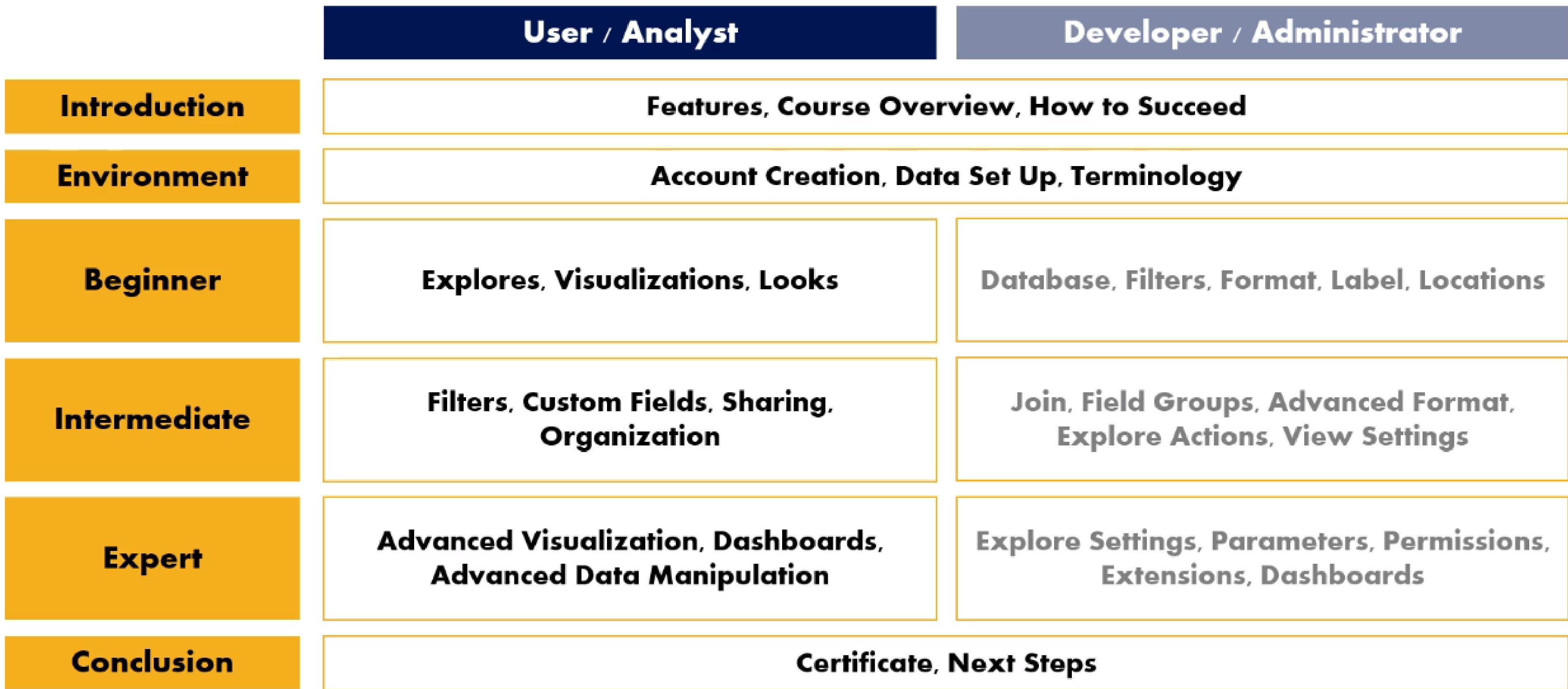
Spending more time on true on

Google closes \$2.6B Looker acquisition

Sean Miller | spon_miller / 11:35 AM EST • February 13, 2020

Is it Worth It?

Our Path



Keys To Success

Do, don't watch

Ask questions / get involved!

Explore



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	customer	customer_company_name	customer_type														
2	1	Trashly	Long Haul														
3	2	FreightPark	Short Haul														
4	3	BumperTruck	Medium Haul														
5	4	SuperRig	Medium Haul														
6	5	Sucket	Long Haul														
7	6	Tractore	Short Haul														
	7	Pdump	Long Haul														
	8	Motore	Short Haul														
	9	Fliner	Long Haul														
	10	Mudcab	Long Haul														
	11	Stacket	Medium Haul														
	12	BullHome	Long Haul														
	13	Shover	Long Haul														
	14	Bucker	Medium Haul														
	15	Suppler	Short Haul														
	16	DriveDock	Medium Haul														
	17	GoHaul	Long Haul														
	18	SandHaul	Long Haul														
	19	DumpSpot															
	20	Blaster															
21																	
22																	

Data Walkthrough

Lab 0: Stand up your Looker Environment

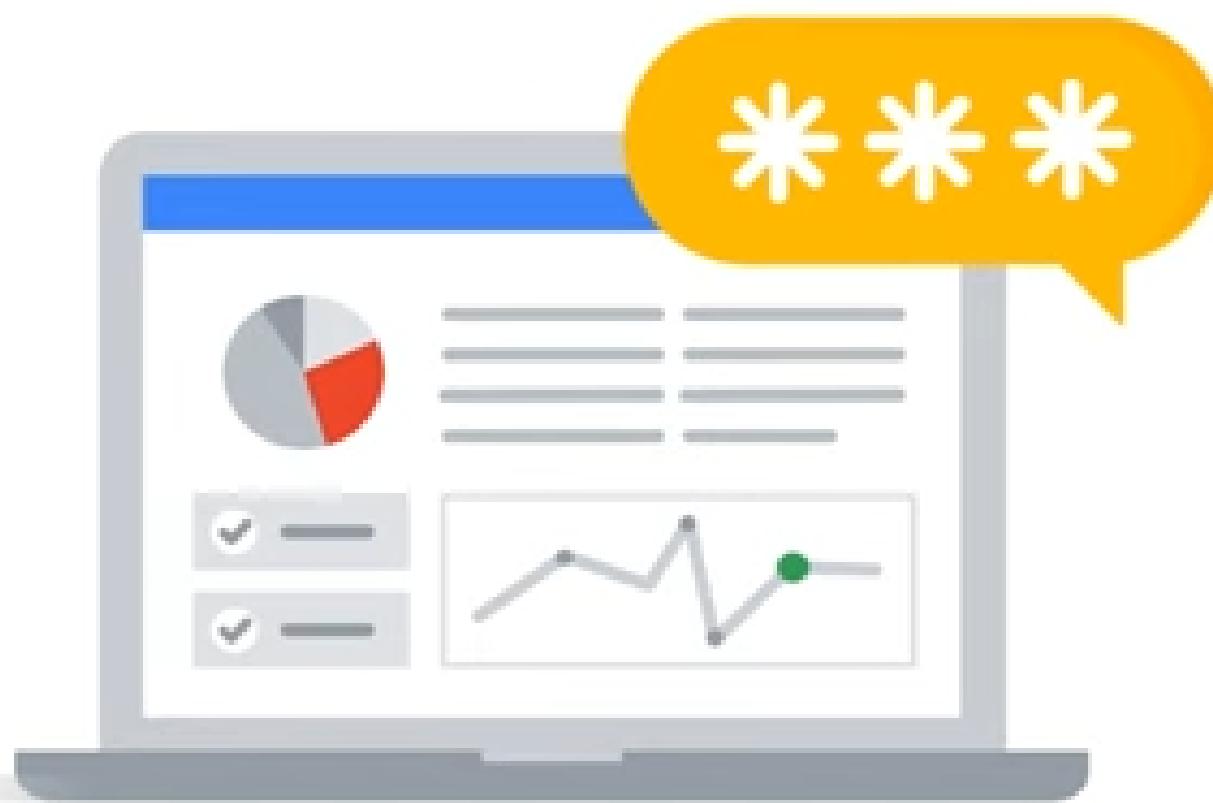
<https://github.com/fenago/looker-bootcamp/blob/main/md/lab0.md>

Lab 1_1, 1_2, 1_3

20

Lab 1: Loading Data into Looker

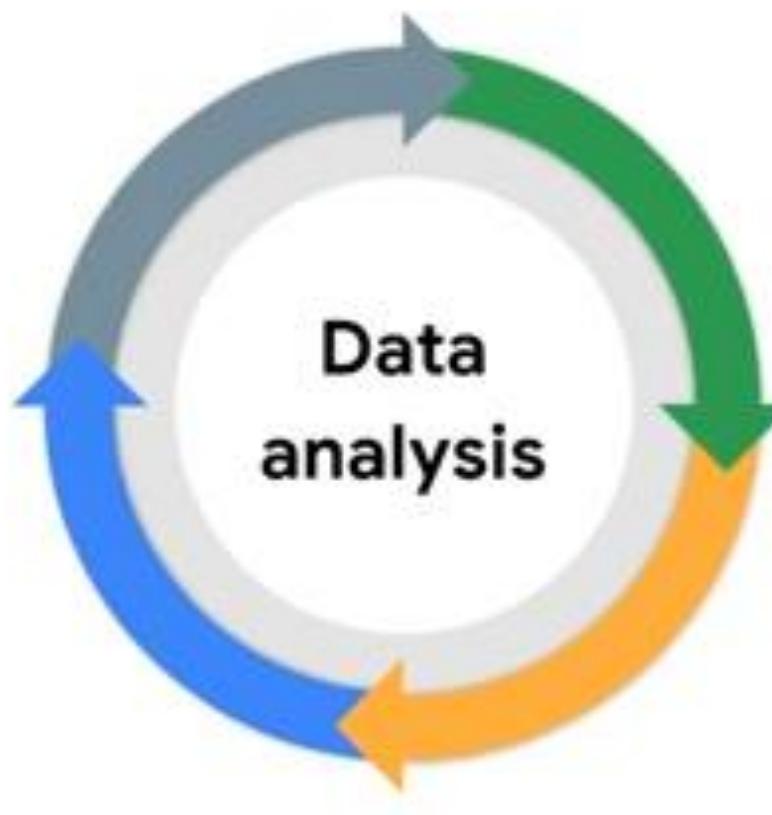
What is Looker?



Looker can help you...

- See the data that your company collects.
- Answer questions as you have them.
- Stay up to date with the status of your business.
- Use data for daily decisions instead of waiting for reports.

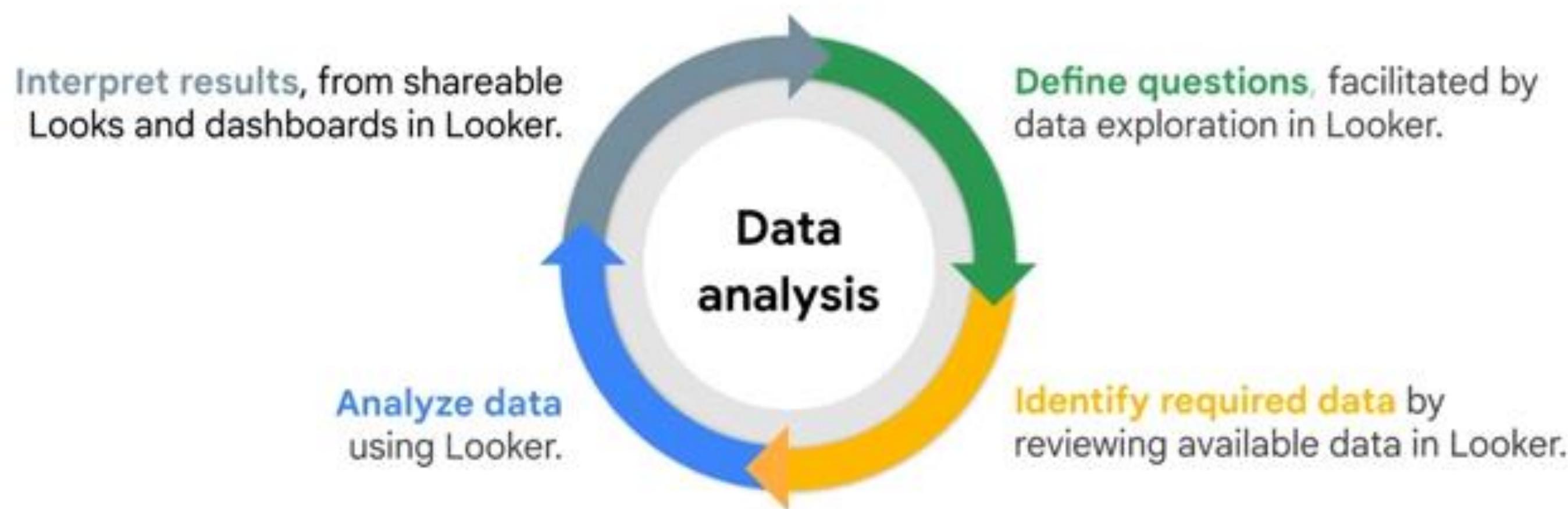
The role of Looker in the data analysis process



To consider how Looker can support your data workflows, let's examine the overall data analysis process and the role of Looker in this process.

When working with data, it's important to have clear objectives. We suggest a data analysis process that includes the following components:

The role of Looker in the data analysis process



Google Cloud

Looker login screen



Log In

Email

Password

LOG IN

Stay logged in. This is a trusted computer.

[Forgot your password?](#)

[Explore](#)[Develop](#)[Admin](#)[Shared folders](#)[Recently Viewed](#)[Favorites](#)[Boards](#)[Lab exercises](#)[Folders](#)[Blocks](#)[Applications](#)[Development Mode](#)

Your organization's folders

[New](#)

Folders

[Sort by Name](#)[Customer Metrics](#)[Example Folder](#)[Human Resources](#)

Dashboards

[Sort by Name](#)[Name](#)[Favorite](#)[Business Pulse](#)

64 Views, Created by

[Business Pulse '21](#)

34 Views, Created by

[Citi bike stations with more than thirty bikes](#)

13 Views, 1 Favorite, Created by

Shared

Business Pulse '21

4m ago

Date

State

City

Brand

is in the year 2018

is any value

is any value

is any value

0

New Users Acquired

0% of 10,000 Goal

∅

Average Order Sale Price

\$45.69

Average Spend Per User

100,976

Orders This Year

∅ from this time last year

Orders by Day and Category



Shared

Business Pulse '21

2m ago

Date State City Brand

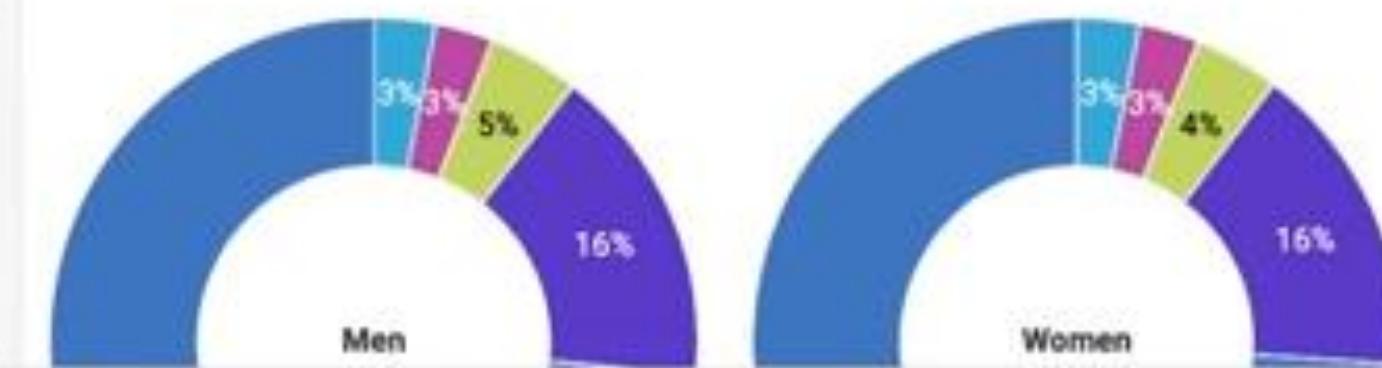
is in the year 2018 is any value is any value is any value



Brand Sales

Brand	Order Count	Average Spend per User	Users
1 Example Brand 1	1,413	\$32.13	1,369
2 Example Brand 2	1,317	\$32.33	1,288
3 Example Brand 92	971	\$62.96	939
4 Example Brand 3	741	\$44.05	730
5 Example Brand 4	682	\$44.02	674

Marketing Channel by User Demographic



Shared

Business Pulse '21

4m ago

Date State City Brand

is in the year 2018 is any value is any value is any value

0

New Users Acquired

0% of 10,000 Goal

∅

Average Order Sale Price

\$45.69

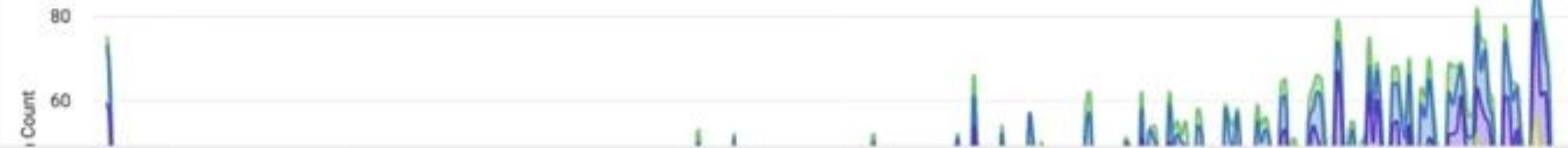
Average Spend Per User

100,976

Orders This Year

∅ from this time last year

Orders by Day and Category



Looker

Average Spend Per User

ORDER ITEMS (4 Filters) ▾

ID

1	10
2	70
3	77
4	170
5	221
6	393
7	426
8	489
9	595
10	614
11	621
12	728
13	738
14	746
15	911
16	921
...	...

Development mode ⓘ

Count 60

Explore Download X



Explore

500 rows · from cache · 1m ago

Run



Order Items



Find a Field

Start typing to search

All Fields

In Use

+ Custom Fields

+ Add

+ Distribution Centers

+ Inventory Items

+ Order Items 2

+ Products 1

+ Users 2

No filters

Filter by I.D.

+ Filters (4)

Order Items Created Date in the year 2018

Products Brand is any value

Users City is any value

Users State is any value

+ Visualization

▼ Data

Results

SQL

Add calculation

Row Limit 500

Totals

Order Items ID

1	10
2	70
3	77
4	170
5	221
6	393
7	426
8	489
9	595
10	614
11	621
12	728
13	738
14	746
15	911

lore

500 rows · from cache · 2m ago

Run



Order Items



Field

Start typing to search

All Fields

In Use

rs

2

DIMENSIONS

Age

Age Tier

City



Country

Created Date

Email

First Name

Gender

ID

Go to LookML

Filters (4) Order Items Created Date in the year 2018 Products Brand is any value Users City is any value Users State is any value

Visualization

Data

Results

SQL

Add calculation

Row Limit 500

 Totals

Order Items ID

1	10
2	70
3	77
4	170
5	221
6	393
7	426
8	489
9	595
10	614
11	621
12	728
13	738
14	746
15	911

lore

500 rows · from cache · 3m ago

Run



Order Items

Field

Start typing to search

All Fields

In Use

Common Fields

+ Add

Distribution Centers

Inventory Items

Order Items

2

DIMENSIONS

Created Date

Delivered Date

3

Inventory Item ID

Is Returned (Yes / No)

Go to LookML

Filters (4)

 Custom Filter

Order Items Created Date

is in the year

▼

2018

X +

Products Brand

is equal to

▼

X +

Visualization

Data

Results

SQL

Add calculation

Row Limit 500

 Totals

Order Items ID

1	10
2	70
3	77
4	170
5	221
6	393
7	426
8	489
9	595



plore

500 rows · from cache · 3m ago

Run



Order Items

1 a Field

Start typing to search

All Fields

In Use

Custom Fields

+ Add

Distribution Centers

Inventory Items

Order Items

2

DIMENSIONS

Created Date

Delivered Date

ID

Inventory Item ID

Is Returned (Yes / No)

ds

Go to LookML

Filters (4)

Order Items Created Date

is in the year

2018

Products Brand

is equal to

Visualization

Data

Results

SQL

Add calculation

Order Items ID

1

2

3

4

5

6

7

8

9

Save...

Download

0.3EL

Open in Data Studio

Send

~95

Save and schedule

~165

Share

36U

Get LookML

~36A

Merge results

Remove fields and filters

36K

Clear cache and refresh

0.36 →

595



▶ Favorites

▼ Boards +

▶ Lab exercises

▼ Folders

My folder

▶ Shared folders

▶ People

LookML dashboards

Unused content

Trash

▶ Blocks

▶ Applications

Development Mode

Your organization's folders

New



Folders contain Dashboards and Looks for specific groups of people. You can copy, move, or save Dashboards and Looks to a folder.

13 Views, Created by

Looks

Sort by Name

<input type="checkbox"/> Name	Last Updated	Favorite
Example Sankey 12 Views,	27 months ago	
Improved Tile for NYC Taxi 2 Views, Created by	12 months ago	
Yearly Revenue 44 Views,	21 months ago	

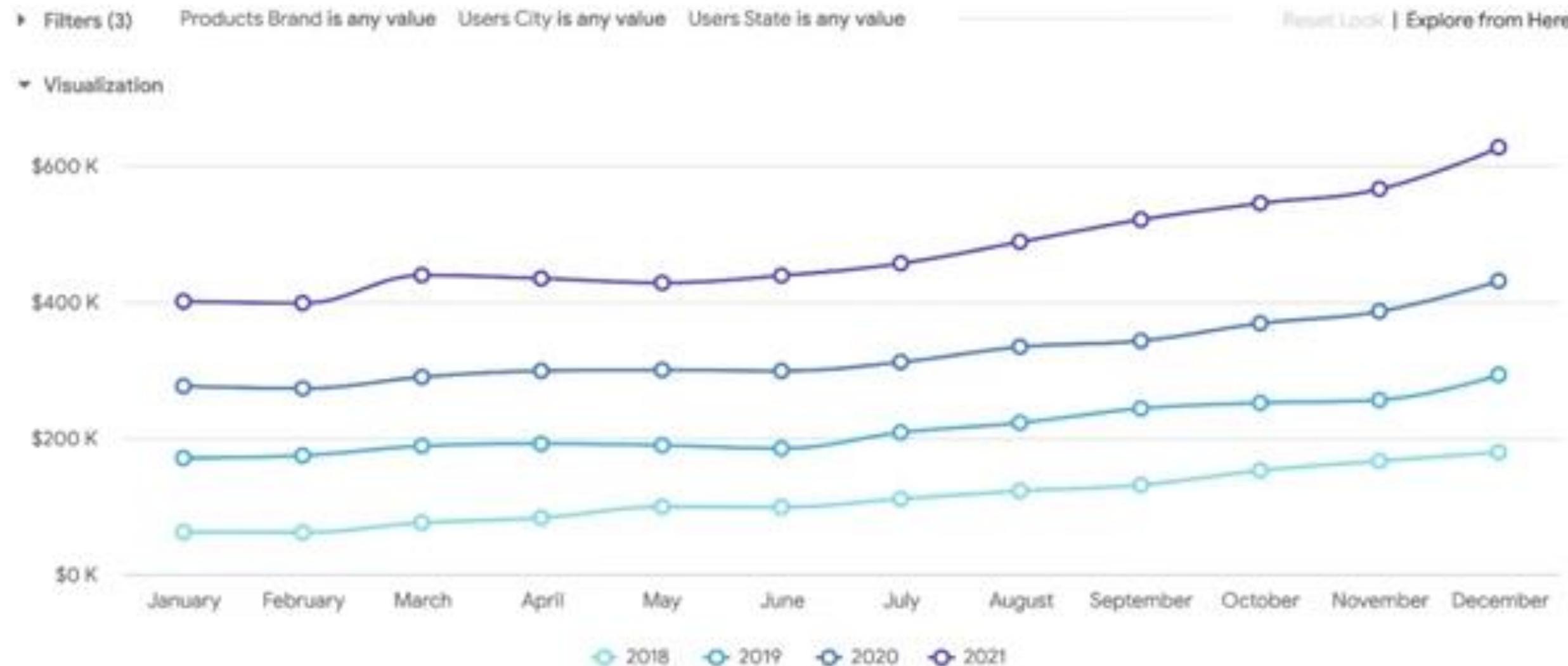
Shared

Yearly Revenue

12 rows · 1s · just now

Run

Edit



Details

Description
NoneScheduled
NoOn Dashboards
No

Create Sched

Add To Dashb

[Explore](#)[Develop](#)[Admin](#)

Shared folders

[Recently Viewed](#)[Favorites](#)[Boards](#) +[Lab exercises](#)[Folders](#)[Blocks](#)[Applications](#)[Development Mode](#)

Your organization's folders

[New](#)

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Folders

[Sort by Name](#) [Customer Metrics](#)[Example Folder](#)[Human Resources](#)

Dashboards

[Sort by Name](#)

<input type="checkbox"/> Name	Favorite	
Business Pulse 64 Views, Created by		
Business Pulse '21 34 Views, Created by		
Citi bike stations with more than thirty bikes 13 Views, 1 Favorite, Created by		

Organizing Content with Folders



- ▶ Favorites

- ▶ Boards +

- ▶ Lab exercises

- ▶ Folders

- My folder

- ▶ Shared folders

- ▶ People

- LookML dashboards

- Unused content

- Trash

- ▶ Blocks

- ▶ Applications

Development Mode

All folders

Access your content from where it is saved within the folder system.

- My folder

- Shared folders

- LookML dashboards

- People



Explore

Develop

Admin

Shared folders

Recently Viewed

Favorites

Boards

Lab exercises

Folders

My folder

Shared folders

Development Mode

Your organization's folders

Folders contain Dashboards and Looks for specific groups of people. You can copy, move, or save Dashboards and Looks to a folder. [?](#)

New

Folder

Dashboard

Sort by Name

Folders

Customer Metrics

Example Folder

Human Resources

Dashboards

Sort by Name

Favorite

Name



Business Pulse

65 Views, Created by



Business Pulse '21

35 Views, Created by



Citi bike stations with more than thirty bikes

13 Views, 1 Favorite, Created by



[Explore](#)[Develop](#)[Admin](#)[Shared folders](#)[Recently Viewed](#)[Favorites](#)[Boards](#)[Lab exercises](#)[Folders](#)[My folder](#)[Shared folders](#)[Development Mode](#)

Your organization's folders

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[New](#)[Folder](#)[Dashboard](#)[Sort by Name](#)

Folders

[Customer Metrics](#)[Example Folder](#)[Human Resources](#)

Dashboards

[Name](#)[Favorite](#)[Business Pulse](#)

65 Views, Created by

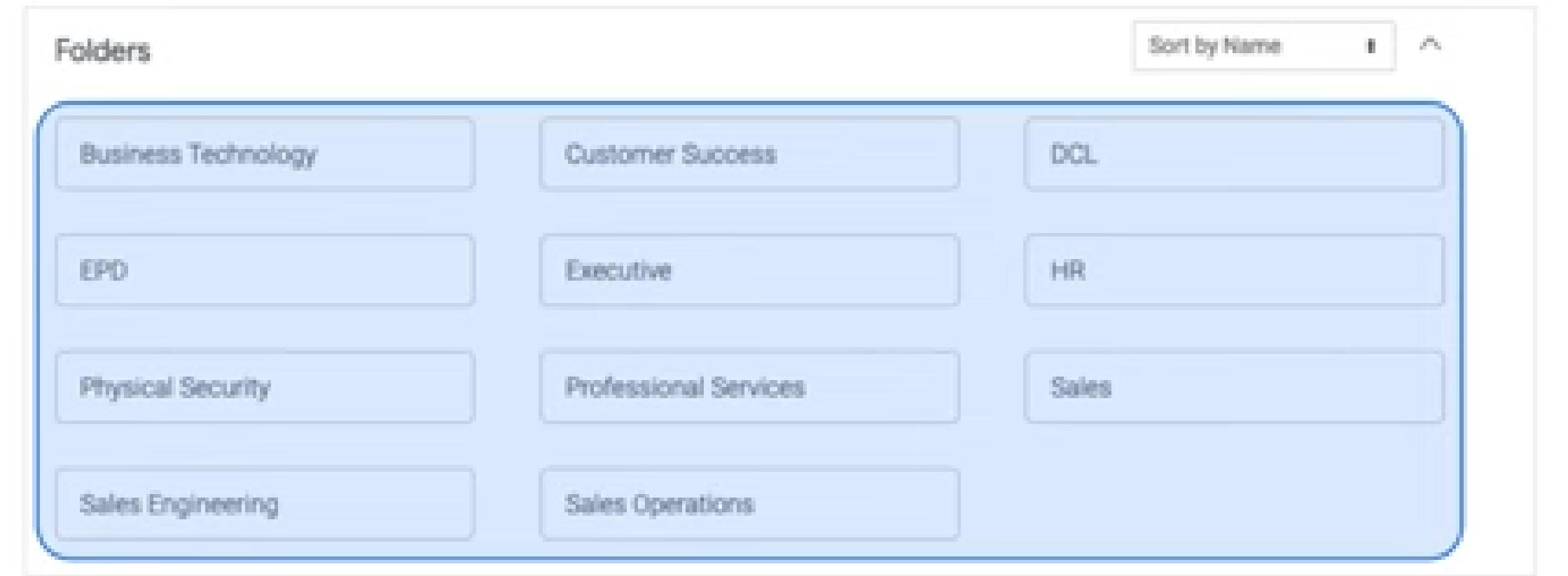
[Business Pulse '21](#)

35 Views, Created by

[Citi bike stations with more than thirty bikes](#)

13 Views, 1 Favorite, Created by





Store dashboards and L
intuitive folder structure
navigate and browse.

Explore

Develop

Admin

Shared folders

Recently Viewed

Favorites

Boards

Lab exercises

Folders

My folder

Shared folders

Development Mode

People >

's folder

New



Dashboards

Sort by Name

	Name	Favorite
	Business Pulse 4 Views, Created by	
	New York Taxi (Brian) 1 View, Created by	
	Order data by product category 1 View, 1 Favorite, Created by	

Looks

Sort by Name

	Name	Last Updated	Favorite



▶ Favorites

▶ Boards +

▶ Lab exercises

▶ Folders

My folder

▶ Shared folders

▶ People

LookML dashboards

Unused content

Trash

▶ Blocks

▶ Applications

Development Mode

Your organization's folders

New



Folders

Sort by Name

Customer Metrics

Example Folder

Human Resources

Dashboards

Sort by Name

Name

Favorite



Business Pulse

65 Views, Created by



Business Pulse '21

35 Views, Created by



Citi bike stations with more than thirty bikes

13 Views, 1 Favorite, Created by



Building Blocks

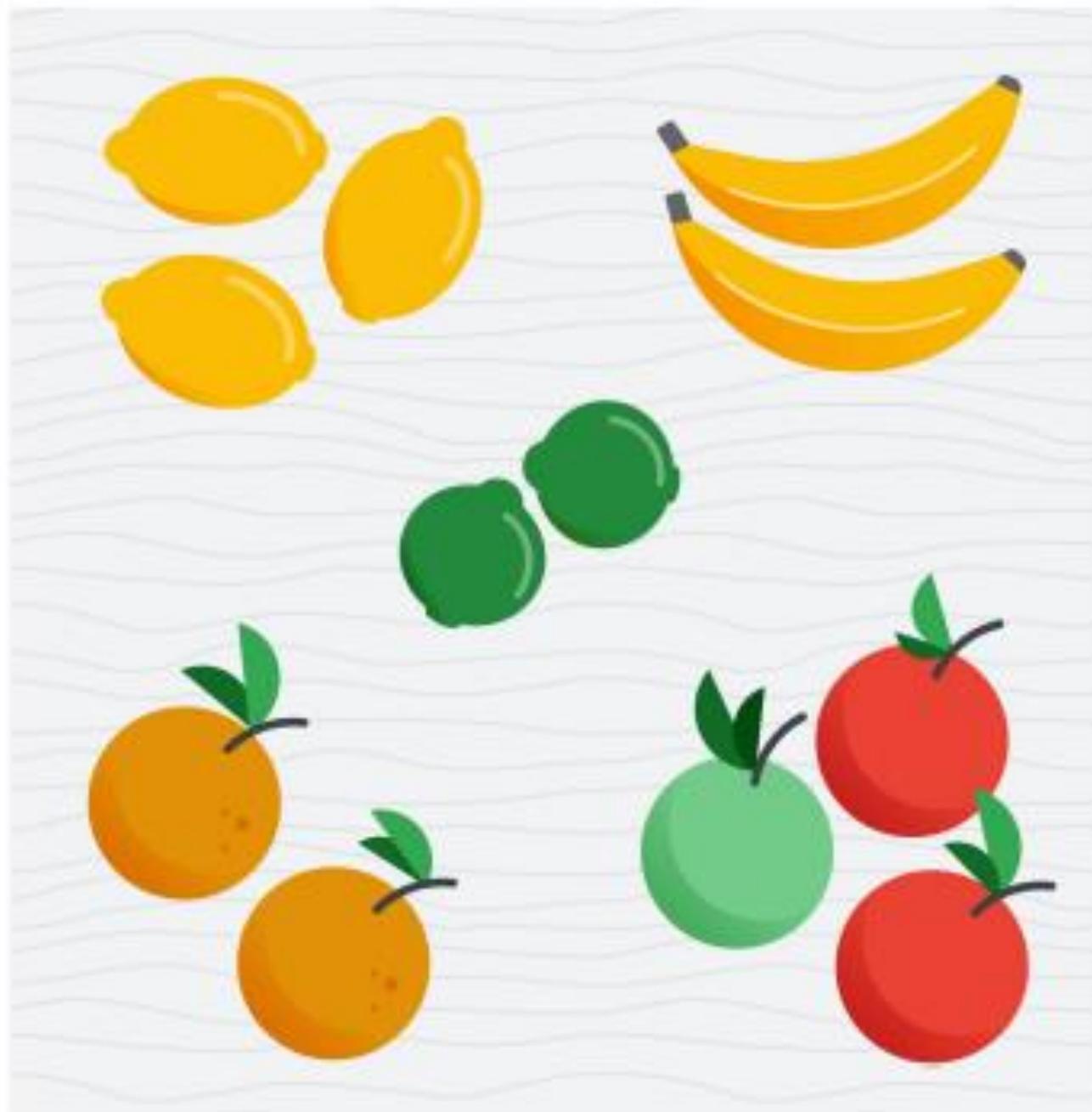
Dimensions

Practice dataset

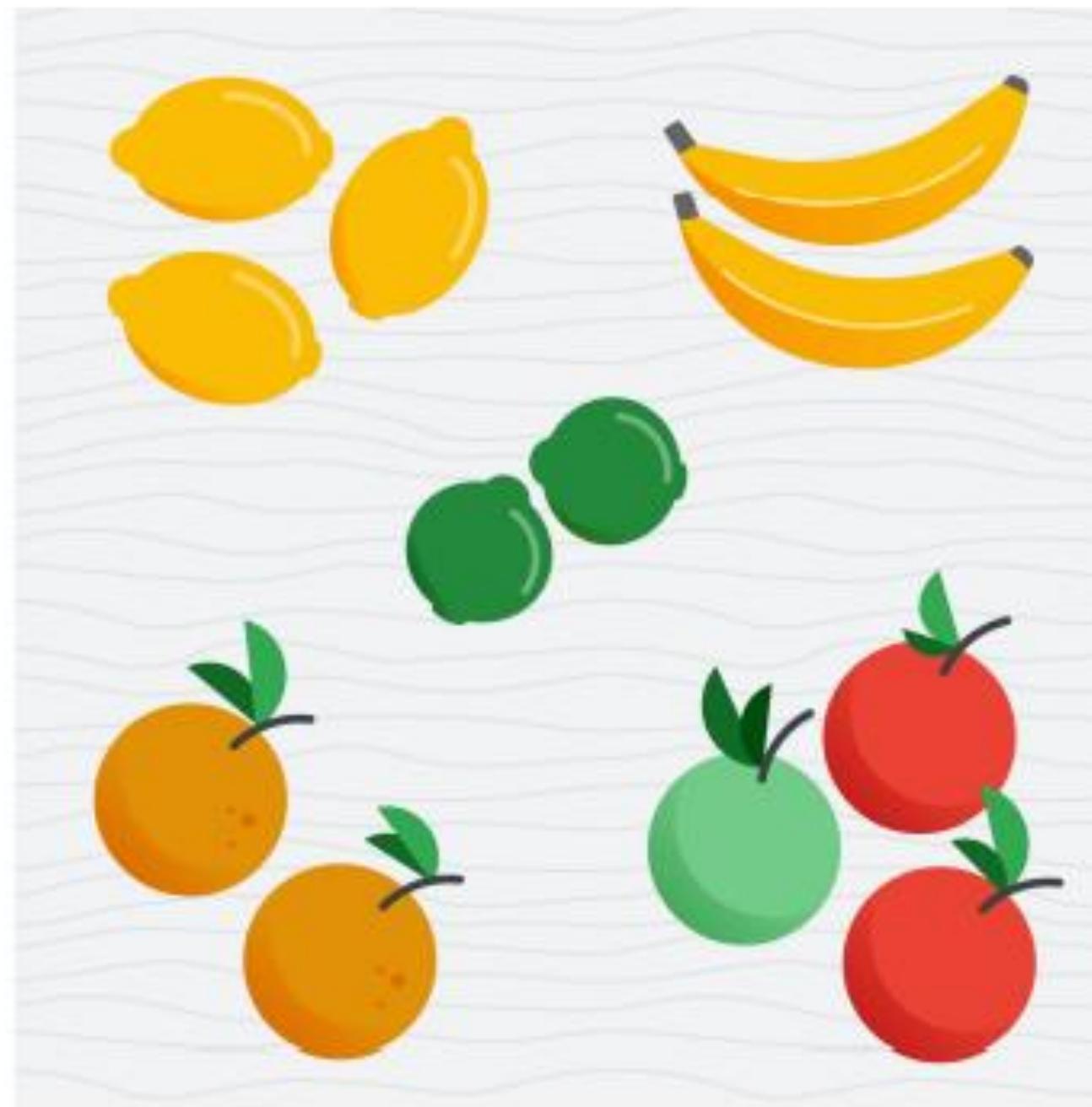


Fruit Type	Color	Is Round	Price per Pound	Weight	Price
apple	red	yes	\$1.25	0.6	\$0.75
apple	red	yes	\$1.25	0.55	\$0.69
apple	green	yes	\$1.15	0.4	\$0.46
banana	yellow	no	\$0.75	0.7	\$0.53
banana	yellow	no	\$0.75	0.75	\$0.56
orange	orange	yes	\$1.45	0.5	\$0.73
orange	orange	yes	\$1.45	0.45	\$0.65
lemon	yellow	no	\$2.25	0.2	\$0.45
lemon	yellow	no	\$2.25	0.22	\$0.50
lemon	yellow	no	\$2.25	0.19	\$0.43
lime	green	no	\$2.40	0.18	\$0.43
lime	green	no	\$2.40	0.17	\$0.41

What types of fruit are in
the basket?



Fruit type dimension returns unique names



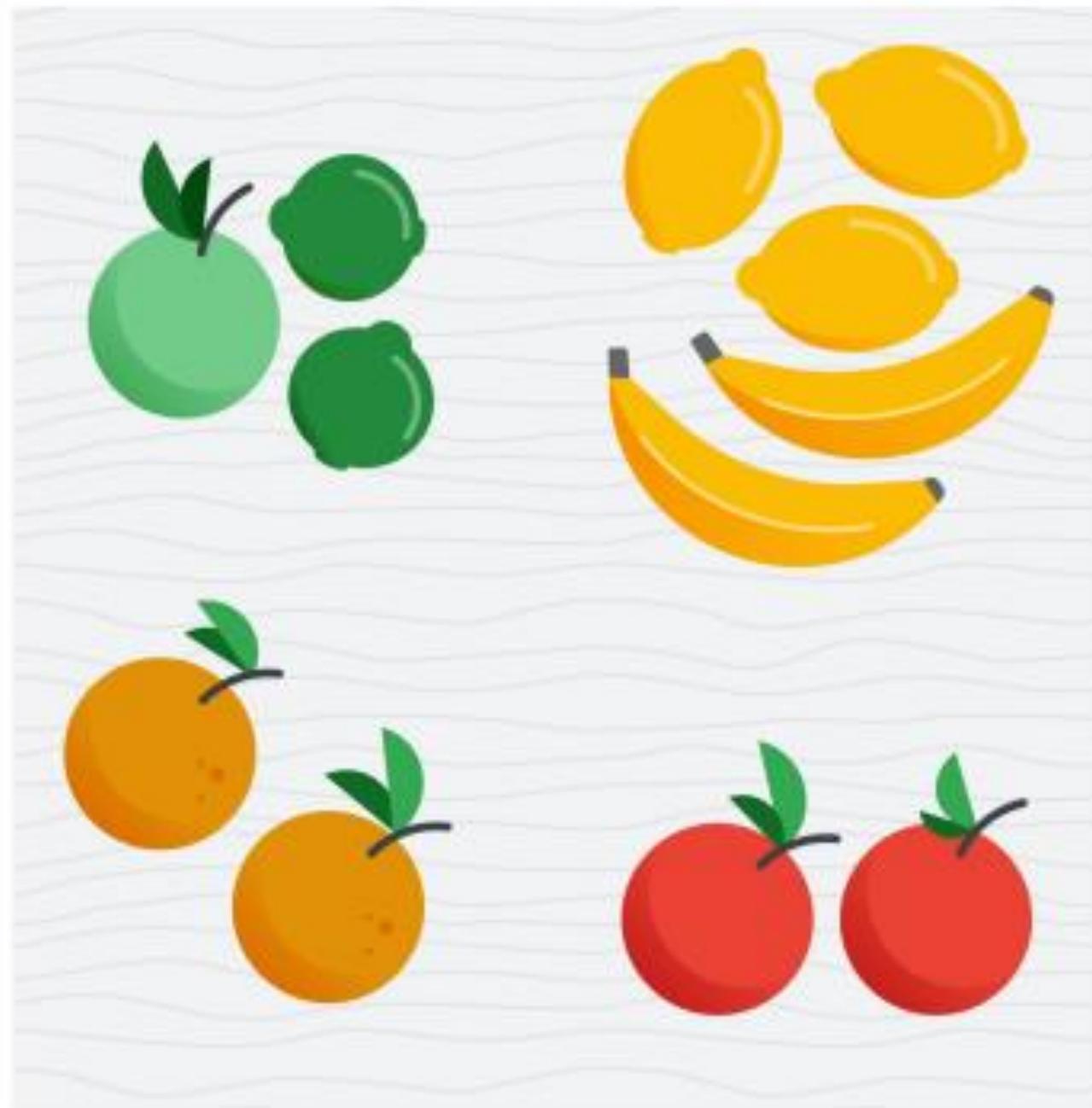
Looker

Fruit Basket [Fruit Type](#)

- | | |
|---|--------|
| 1 | orange |
| 2 | apple |
| 3 | banana |
| 4 | lemon |
| 5 | lime |

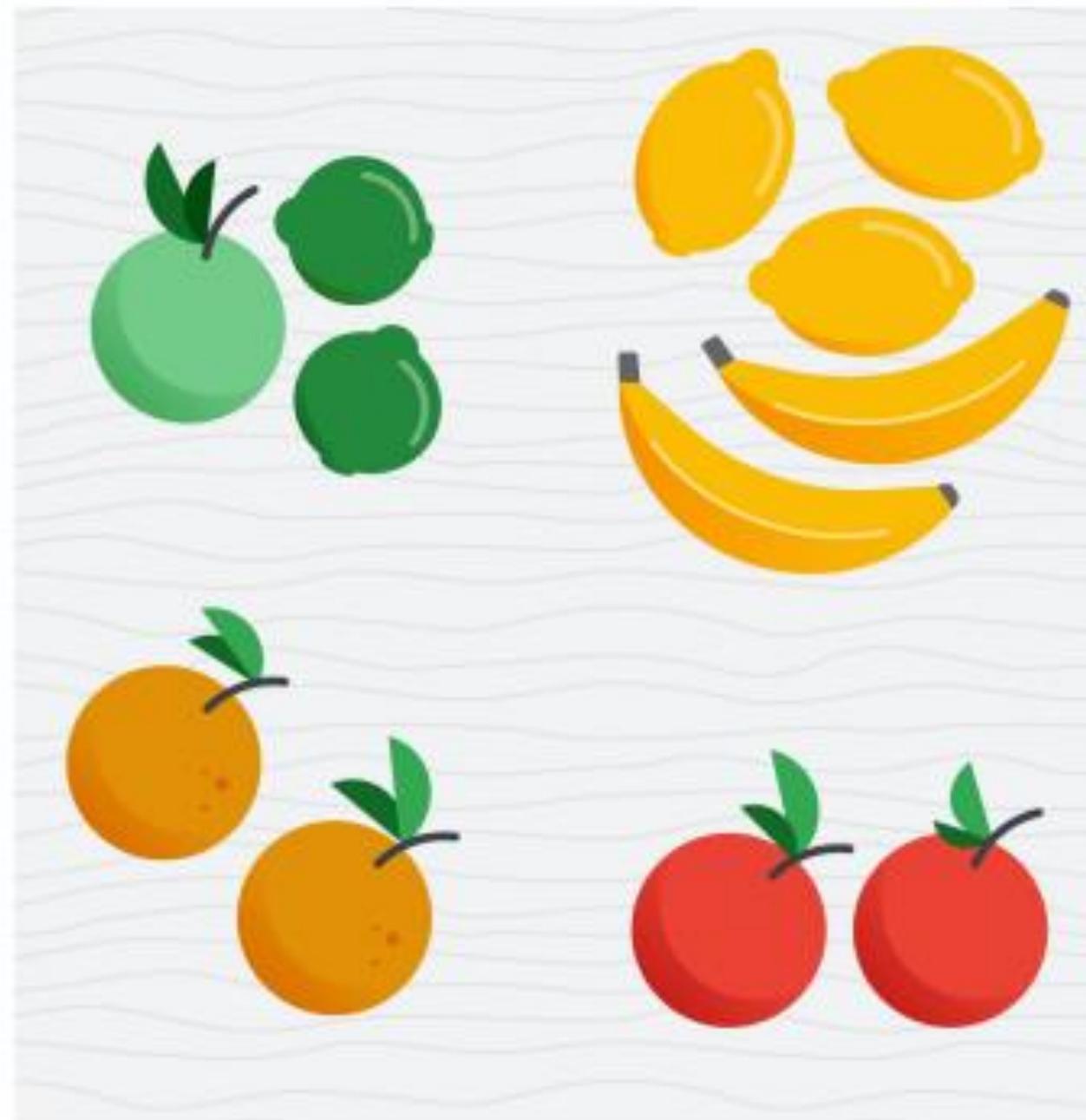
5

**What fruit colors are in
the fruit basket?**



?

What fruit colors are in
the fruit basket?



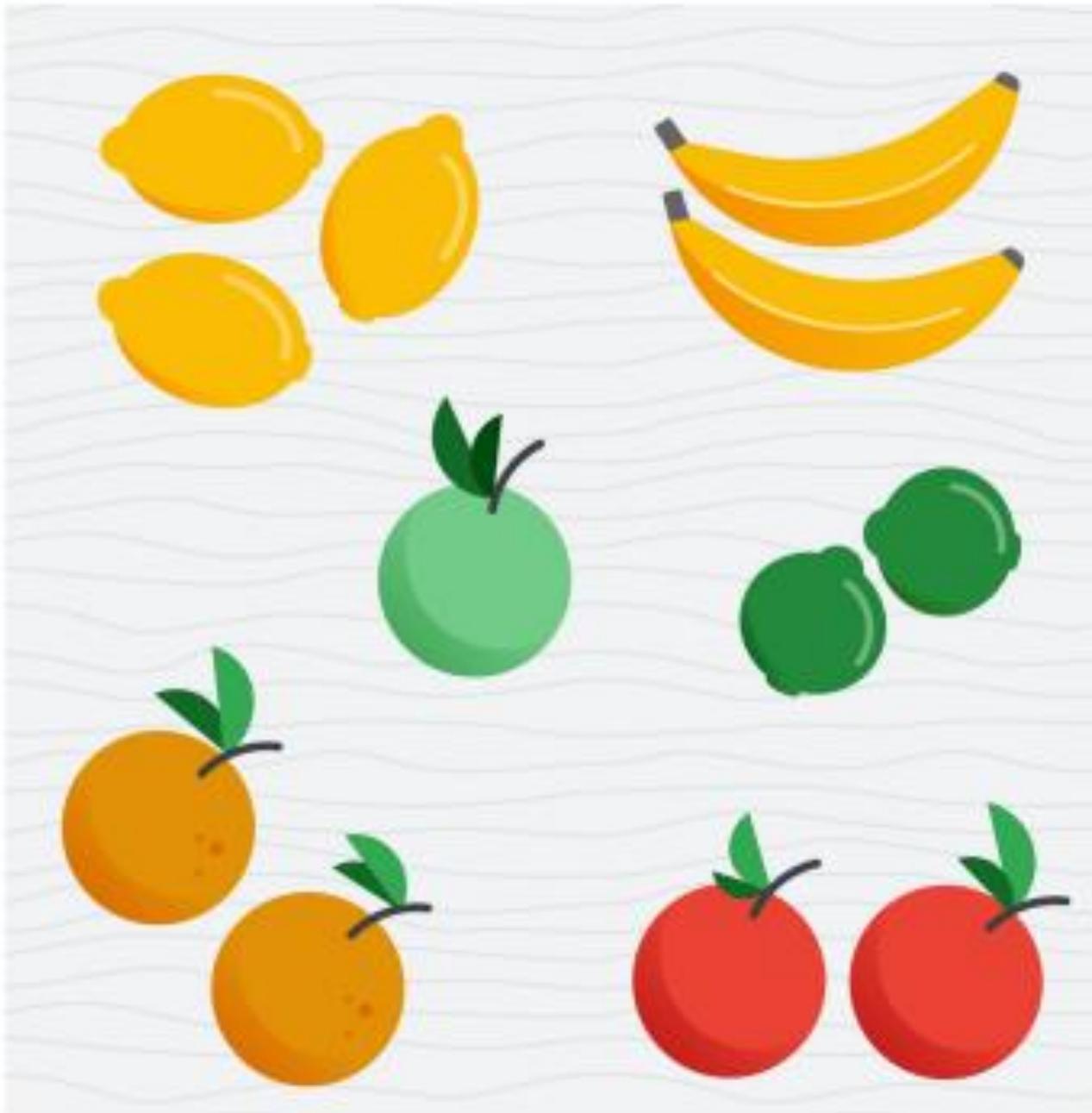
Looker

Fruit Basket Color

- 1 yellow
- 2 red
- 3 orange
- 4 green

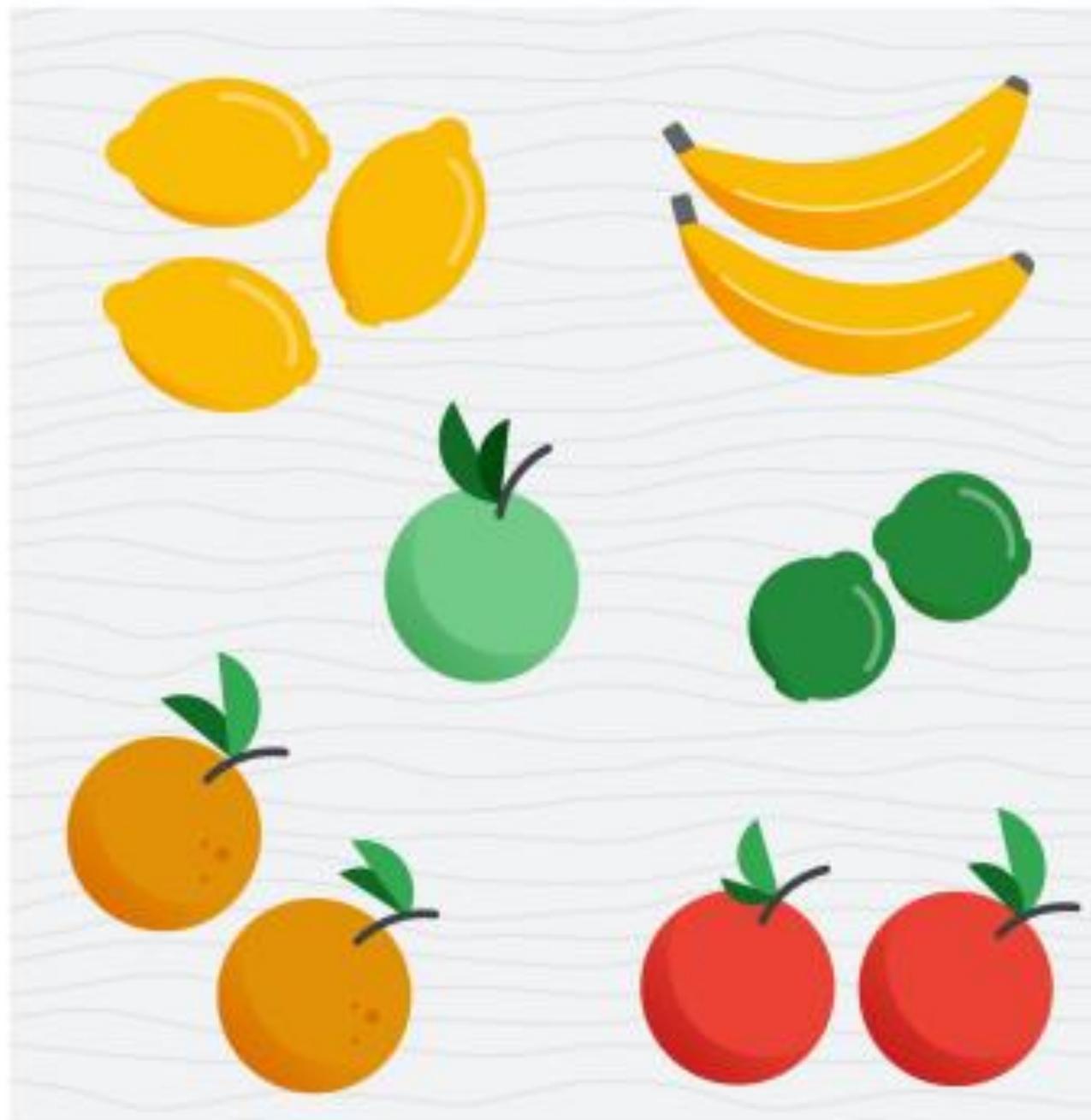
4

What combinations
of fruit types & colors exist?



?

Fruit type + Color dimensions



Looker

Fruit Basket [Fruit Type](#) | [Fruit Basket Color](#)

1	apple	red
2	lemon	yellow
3	orange	orange
4	banana	yellow
5	lime	green
6	apple	green

6

Practice dataset



Fruit Type	Color	Is Round	Price per Pound	Weight	Price
apple	red	yes	\$1.25	0.6	\$0.75
apple	red	yes	\$1.25	0.55	\$0.69
apple	green	yes	\$1.15	0.4	\$0.46
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lemon	yellow	no	\$2.25	0.19	\$0.43
lime	green	no	\$2.40	0.18	\$0.43
lime	green	no	\$2.40	0.17	\$0.41

Building Blocks

Measures

Practice dataset



Fruit Type	Color	Is Round	Price per Pound	Weight	Price
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apple	red	yes	\$1.25	0.55	\$0.69
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banana	yellow	no	\$0.75	0.75	\$0.56
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orange	orange	yes	\$1.45	0.45	\$0.65
lemon	yellow	no	\$2.25	0.2	\$0.45
lemon	yellow	no	\$2.25	0.22	\$0.50
lemon	yellow	no	\$2.25	0.19	\$0.43
lime	green	no	\$2.40	0.18	\$0.43
lime	green	no	\$2.40	0.17	\$0.41

**How many pieces of fruit
are in the basket?**



The Count measure



**How much does the
basket of fruit weigh?**



The Total Weight measure



Looker

Fruit Basket **Total Weight**

1 4.91

4.91

Practice database



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lime	green	no	\$2.40	0.18	\$0.43
lime	green	no	\$2.40	0.17	\$0.41

Example Walkthrough

Measures

Determine total number of users, and show that number as a single-value visualization.

← Explore

Your organization's folders

[New](#) Find an Explore

- E-Commerce

Inventory Items

Order Items

Products

Users

+ E-Commerce Training

+ E-commerce Training Advanced

+ Ecommerce Analytics

+ FAA

+ Google Cloud Billing

 Development Mode

Folders

Sort by Name

Customer Metrics

Example Folder

Human Resources

Dashboards

Sort by Name

 Name

Favorite



Business Pulse

65 Views, Created by



...



Business Pulse '21

35 Views, Created by



...



Citi bike stations with more than thirty bikes

13 Views, 1 Favorite, Created by



...



Explore

Run



Selected Items

a Field

Start typing to search

All Fields

In Use

ID

Last Name

Latitude

Longitude

Map Location

State

Traffic Source

Zip

MEASURES

Count

Is

Go to LookML

▶ Filters

▶ Visualization

▼ Data

Results

SQL

Add calculation

Row Limit 500

Totals



Select some dimensions or measures.

Explore

1 row · 1s · just now



Order Items



Find a Field

 Start typing to search

All Fields

In Use

- ID
- Last Name
- Latitude
- Longitude
- Map Location
- State
- Traffic Source
- Zip

MEASURES

Count

00 Rows

Custom available

▶ Filters

▶ Visualization

 Data Results SQL Add calculationRow Limit Totals

Users Count

1

145,255

Explore

1 row · 1s · 3m ago

[Run](#)

Order Items



Find a Field

 Start typing to search[All Fields](#)[In Use](#)

ID

Last Name

Latitude

Longitude

Map Location

State

Traffic Source

Zip

MEASURES

Count

98 fields

[Go to LookML](#)

▶ Filters

▼ Visualization

[Forecast](#)[Edit](#)

145,255

▼ Data

Results

SQL

Add calculation

Row Limit Totals

Users Count



1

145,255

Data
table

Bar
chart

Line
chart

Pie
chart

Single
value



Column
chart

Scatter
plot

Area
graph

Google
Maps

Explore

1 row · 1s · 13m ago

Run



Order Items

Find a Field

Start typing to search

[All Fields](#)[In Use](#)

ID

Last Name

Latitude

Longitude

Map Location

State

Traffic Source

Zip

MEASURES

Count

98 fields

[Go to LookML](#)

Filters

Visualization



Edit

Forecast

Edit

Style

Comparison

Formatting

Collection

Boardwalk

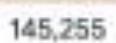
Value Color



Palettes

Custom

Select Color From Palette

Row Limit 500 Totals

145,255

145,255

Data

Results

SQL

Add calculation

Users Count

1

Explore

1 row · 1s · 15m ago

Run



Other Items

Field

Start typing to search

All Fields

In Use

ID

Last Name

Latitude

Longitude

Map Location

State

Traffic Source

Zip

MEASURES

Count

Go to LookML

Filters

Visualization



Edit

Forecast

Edit

Style

Comparison

Formatting

Show Title

Title Override

Total number of users

Value Format

Spreadsheet-style format code

Data

Results

SQL

Add calculation

Row Limit 500

Totals

Users Count

1

145,255



lore

1 row · 1s · 18m ago

Run



Filter Items



Field

Start typing to search

All Fields

In Use

version

)

last Name

atitude

ongitude

lap Location

tate

raffic Source

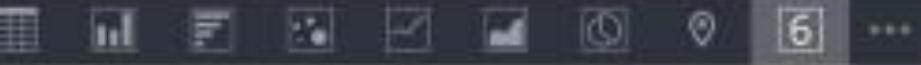
ip

MEASURES

ount

Filters

▼ Visualization



Forecast

Edit

145,255

Total number of users

▼ Data

Results

SQL

Add calculation

Row Limit 500

Totals

Users Count

1

145,255

Go to LookML

Using Dimensions and Measures

Practice dataset



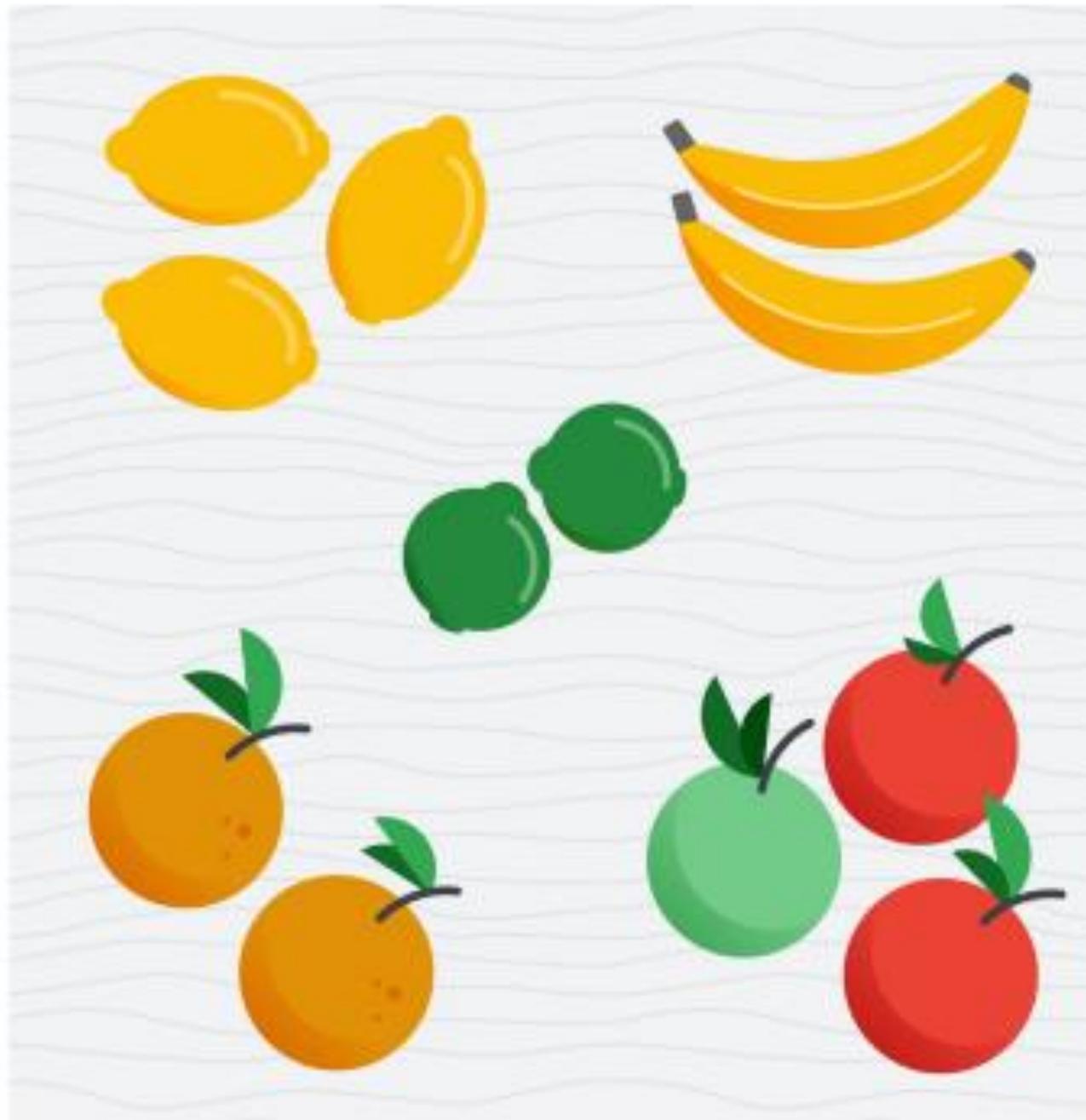
Fruit Type	Color	Is Round	Price per Pound	Weight	Price
apple	red	yes	\$1.25	0.6	\$0.75
apple	red	yes	\$1.25	0.55	\$0.69
apple	green	yes	\$1.15	0.4	\$0.46
banana	yellow	no	\$0.75	0.7	\$0.53
banana	yellow	no	\$0.75	0.75	\$0.56
orange	orange	yes	\$1.45	0.5	\$0.73
orange	orange	yes	\$1.45	0.45	\$0.65
lemon	yellow	no	\$2.25	0.2	\$0.45
lemon	yellow	no	\$2.25	0.22	\$0.50
lemon	yellow	no	\$2.25	0.19	\$0.43
lime	green	no	\$2.40	0.18	\$0.43
lime	green	no	\$2.40	0.17	\$0.41

How many pieces of
each fruit type?



?

Fruit Type dimension + Count measure



Looker

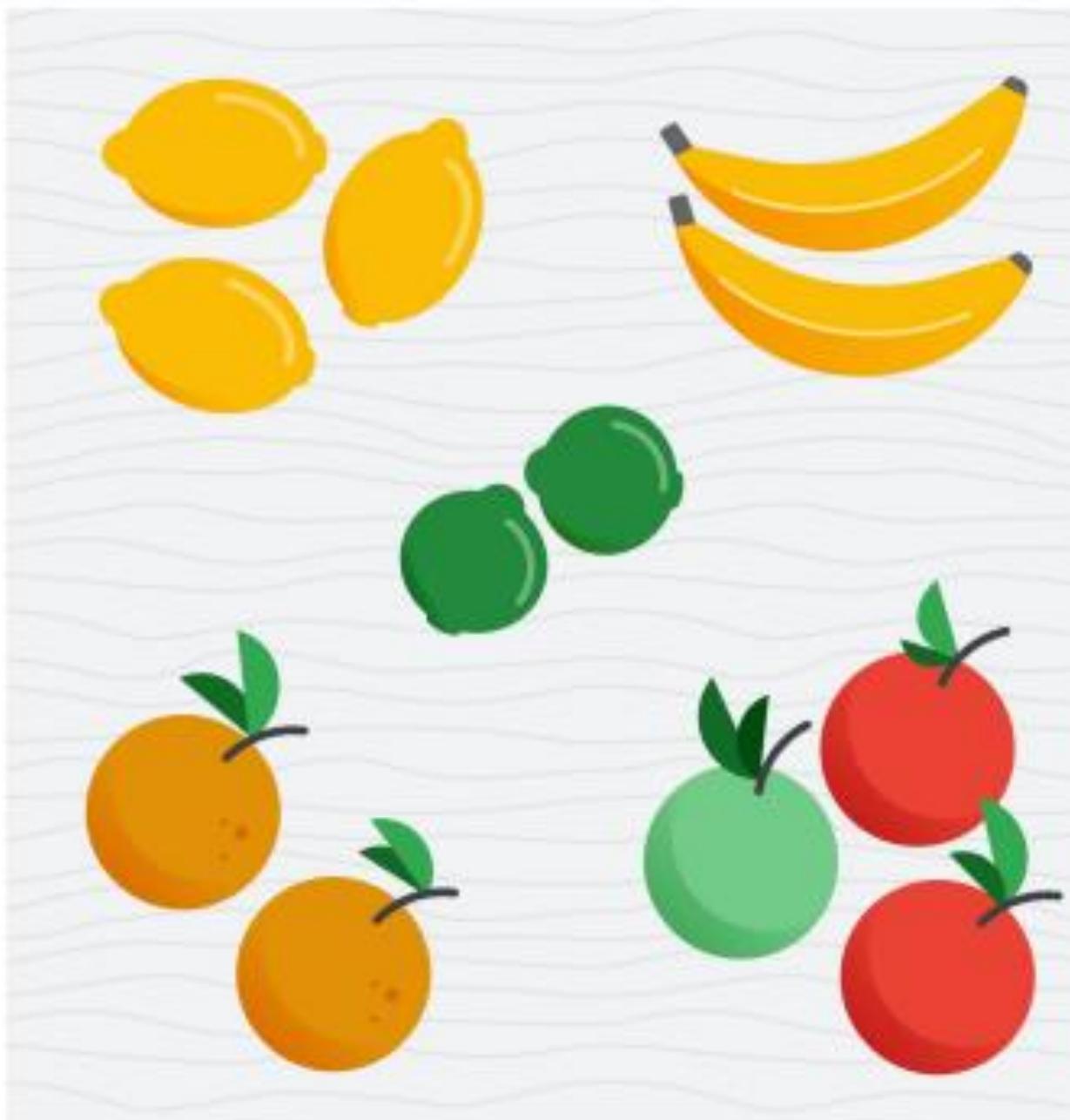
Fruit Basket **Fruit Type** | Fruit Basket **Count**

1	apple	3
2	lemon	3
3	lime	2
4	banana	2
5	orange	2

What is the total cost of each fruit type?



What is the total cost of each fruit type?



Looker

Fruit Basket [Fruit Type](#) | Fruit Basket [Total Price](#)

1	apple	\$1.90
2	lemon	\$1.38
3	lime	\$0.84
4	banana	\$1.09
5	orange	\$1.38

Practice dataset



Fruit Type	Color	Is Round	Price per Pound	Weight	Price
apple	red	yes	\$1.25	0.6	\$0.75
apple	red	yes	\$1.25	0.55	\$0.69
apple	green	yes	\$1.15	0.4	\$0.46
banana	yellow	no	\$0.75	0.7	\$0.53
banana	yellow	no	\$0.75	0.75	\$0.56
orange	orange	yes	\$1.45	0.5	\$0.73
orange	orange	yes	\$1.45	0.45	\$0.65
lemon	yellow	no	\$2.25	0.2	\$0.45
lemon	yellow	no	\$2.25	0.22	\$0.50
lemon	yellow	no	\$2.25	0.19	\$0.43
lime	green	no	\$2.40	0.18	\$0.43
lime	green	no	\$2.40	0.17	\$0.41



2. CONNECTING TO DATA SOURCES

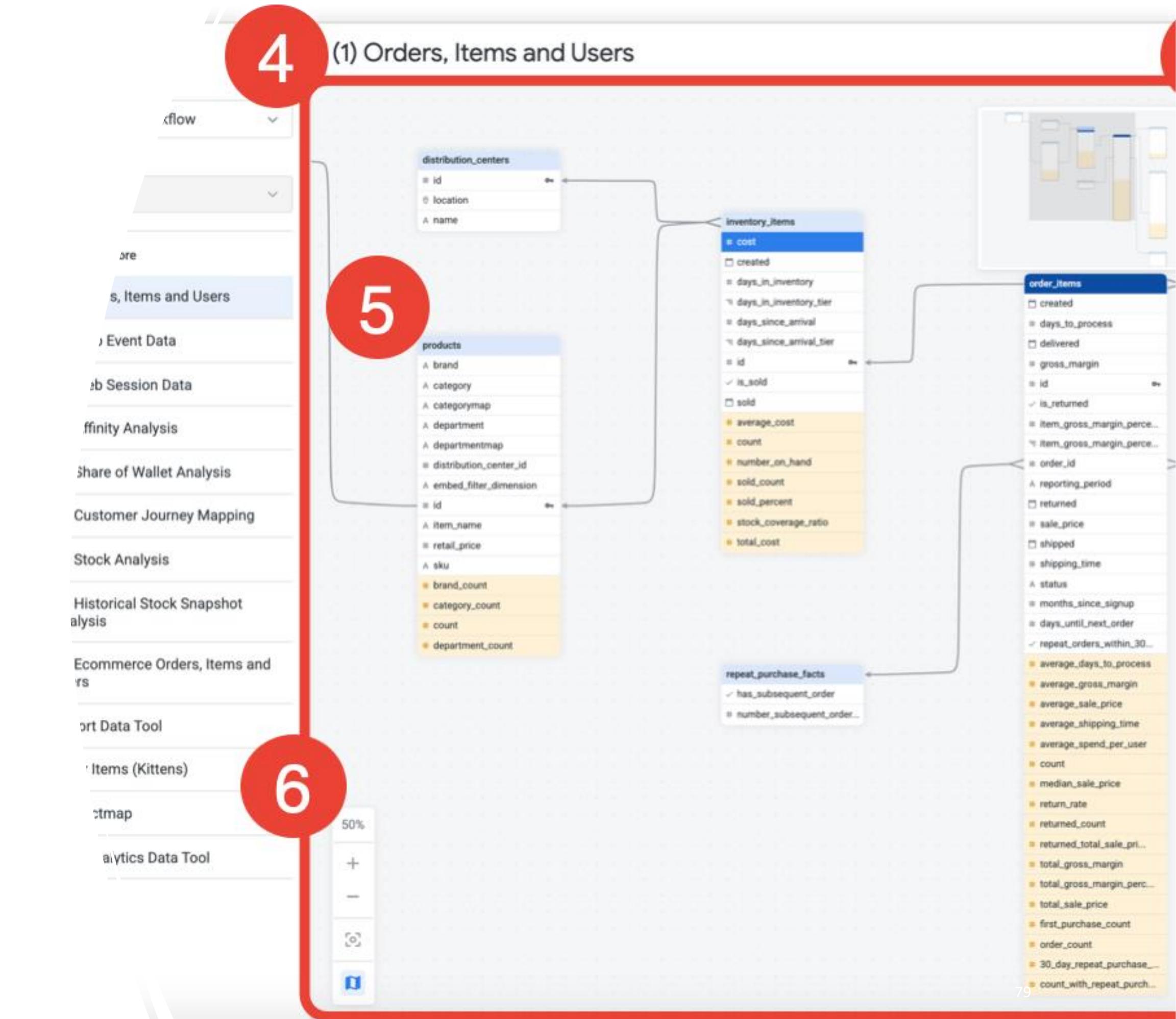
Setting up and Managing Data Connections in Google Looker

The screenshot shows the 'Connect to Data' section of the Looker Studio interface. At the top, there's a navigation bar with icons for back, forward, home, and search, followed by the URL 'lookerstudio.google.com/data'. Below the navigation is a header with the Looker Studio logo and the text 'Connect to Data'. The main content area has tabs for 'OVERVIEW', 'GALLERY', 'CONNECT TO DATA' (which is underlined), 'VISUALIZATIONS', and 'HOME'. A sub-header says 'Access your data from 1000+ data sets from over 1040 connectors.' Below this is a search bar with the placeholder 'Search connectors...'. A section titled 'Looker Studio Connectors (21)' follows, with a note that they are 'Connectors built and supported by Looker Studio. [Learn more](#)'. Six connector cards are displayed in a grid:

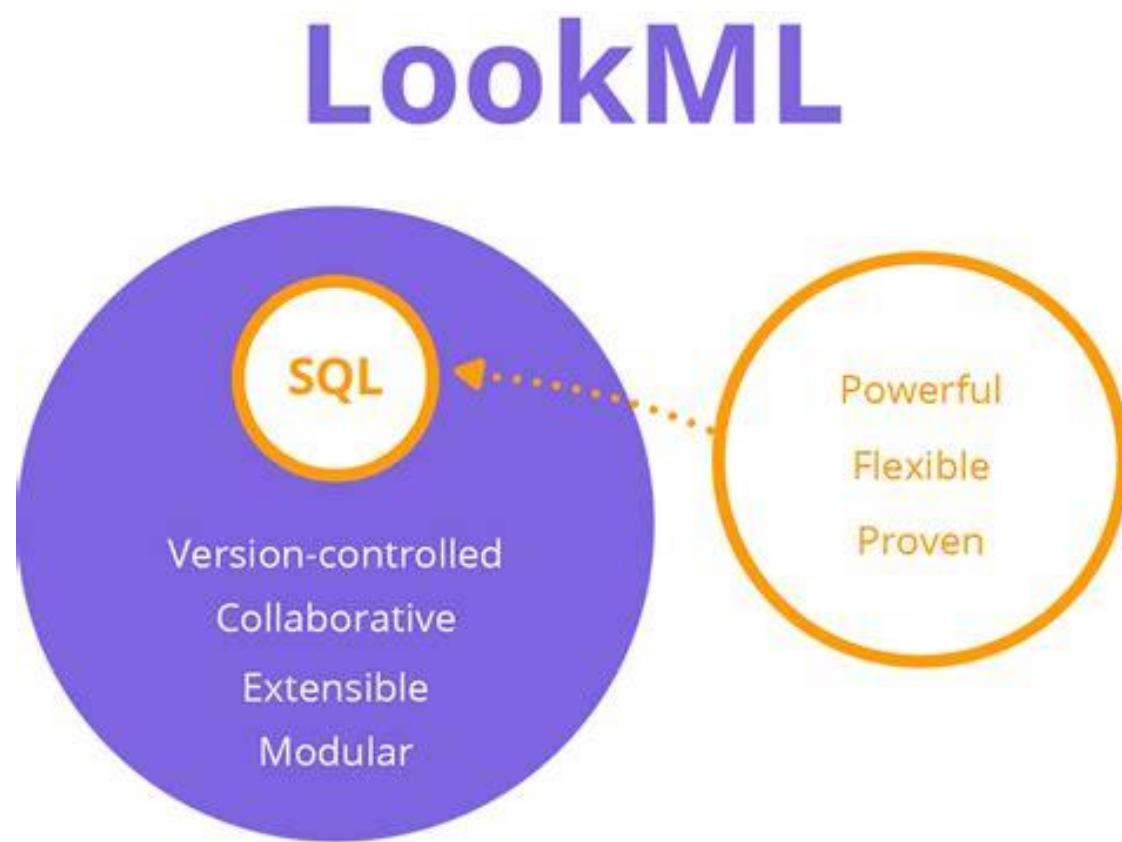
- Looker** By Google: Connect to your Looker semantic models. [Learn More](#)
- Google Analytics** By Google: Connect to Google Analytics reporting views. [Learn More](#)
- Google Ads** By Google: Connect to Google Ads performance report data. [Learn More](#)
- Google Sheets** By Google: Connect to Google Sheets. [Learn More](#)
- BigQuery** By Google: Connect to BigQuery tables and custom queries. [Learn More](#)
- AppSheet** By Google: Connect to AppSheet app data. [Learn More](#)

Exploring Database Schemas in Google Looker

- Understanding the structure of database schemas in Looker
- Using Looker's explore mode to visually analyze data
- Creating custom views of data for specific use cases



Understanding LookML: Looker's Data Modeling Language



- Creating new models using LookML
- Customizing views and dashboards with LookML
- Writing efficient and performant LookML code

80

3. CREATING AND CUSTOMIZING EXPLORES

Speak Looker

Fields vs. Dimensions vs. Measures

	Office	Office Name	Customer	Customer Company Name	Sales	Total Hours ↓	Sales	Total Sales	Sales	Count
1	Detroit		SandHaul			443		\$784,244		7
2	Seattle		Pdump			357		\$536,643		6
3	Orlando		Trashly			323		\$539,560		5
4	Orlando		Blastine			321		\$439,138		5
5	Seattle		BumperTruck			307		\$515,276		6
6	Detroit		Trashly			301		\$529,913		4
7	San Francisco		Suppler			296		\$486,367		5
8	Houston		Bucker			265		\$360,133		6
9	Houston		DumpSpot			261		\$416,139		3
10	Los Angeles		Trashly			251		\$349,327		4
11	Dallas		Sucket			250		\$414,972		3
12	Detroit		Motore			247		\$455,394		4
13	Miami		Tractore			246		\$399,903		3
14	New York City		Shovel			244		\$460,107		5

Speak MORE Looker

Explores vs. Looks vs. Dashboards

Explore

10 rows · 1.8s · just now Run

Sales Custom Filter

Search

All Fields In Use

Custom Fields + Add

Customer 1

DIMENSIONS Customer Company Name Filter

Customer ID

Customer Type

Office 1

DIMENSIONS Office ID Filter

Office Name

Office Zip Code

Product

Sales 1

DIMENSIONS Customer ID Filter

Hours

Office ID

Sales

Salesperson ID

State

Transaction Date

Transaction ID

Filters (1)

Customer Customer Company Name is equal to Filter X +

Visualization Edit More

Total Sales

\$4,000,000

\$3,000,000

\$2,000,000

\$1,000,000

\$0

Detroit Seattle New York City Houston Orlando San Francisco Austin Miami Los Angeles Dallas

Office Name

Data Results SQL Row Limit 500 Totals

Office Name	Total Sales
Detroit	\$4,089,204
Seattle	\$3,590,934
New York City	\$3,332,495
Houston	\$3,309,834
Orlando	\$3,278,829
San Francisco	\$3,169,788
Austin	\$3,144,345
Miami	\$3,059,605
Los Angeles	\$2,917,372
Dallas	\$2,511,358

Boards vs. Folders

The screenshot illustrates the Looker interface for managing content. On the left, a sidebar shows navigation links: Explore, Develop, Shared folders, Recently Viewed, Favorites, Boards (selected), Sales Data, Salesperson Performance, Folders (highlighted with a blue box and cursor), and Blocks.

The main area is titled "All folders" and contains a sub-section "People > Developer Student's folder". This section displays a list of five Looks, each with a preview icon, name, creation date, "Explore From Here" link, model, and edit/favorite icons.

Name	Last Updated	Model	Actions
Hours and Sales by Customer	13 minutes ago	Explore From Here	Looker Basics
Monthly Sales	13 minutes ago	Explore From Here	Looker Basics
Sales by Office	14 minutes ago	Explore From Here	Looker Basics
Salesperson Performance Overview	10 minutes ago	Explore From Here	Looker Basics
Salesperson Report	12 minutes ago	Explore From Here	Looker Basics

At the top right of the main content area, there are buttons for "New" and "Manage Access..", and a "Sort by Name" dropdown.

Boards vs. Folders

Sales Data

Monthly Reports

Add description...

Sales by Office
By Developer Student

Monthly Sales
1 View, By Developer Stud...

Adhoc Reports

Add description...

Hourly Sales by C...
By Developer Student

New section



LookML versus SQL

LookML vs. SQL

SQL

SQL is a language that lets you access, retrieve, and manipulate data in a SQL-supported database (95% of databases use some flavour of SQL in my opinion)

LookML

LookML is a language for describing dimensions, aggregates, calculations, and data relationships in a SQL database.

Looker uses a model written in LookML to construct SQL queries against a particular database

```
Select office, sum(sales) as total_sales  
from sales_data  
group by office
```

```
View: sales /  
derived_table: sales_data
```

```
Dimension: office /  
type: string  
sql: office;;  
/
```

```
measure: total_sales /  
type: sum  
sql: sales  
/
```

You are in Development Mode.

Exit Development Mode

Looker

Explore

Develop

Shared folders

Recently Viewed

Favorites

Boards

No boards added yet

Folders

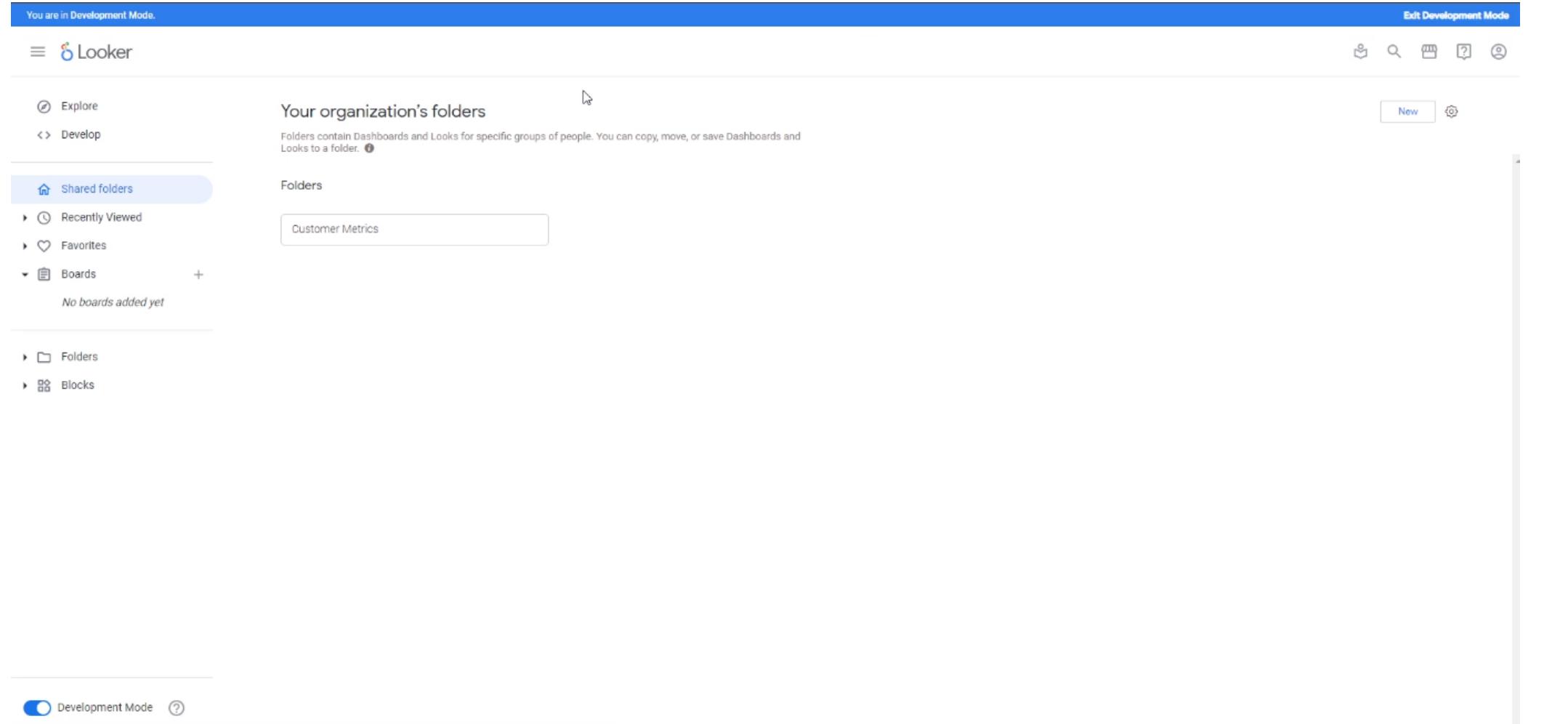
Customer Metrics

New

Your organization's folders

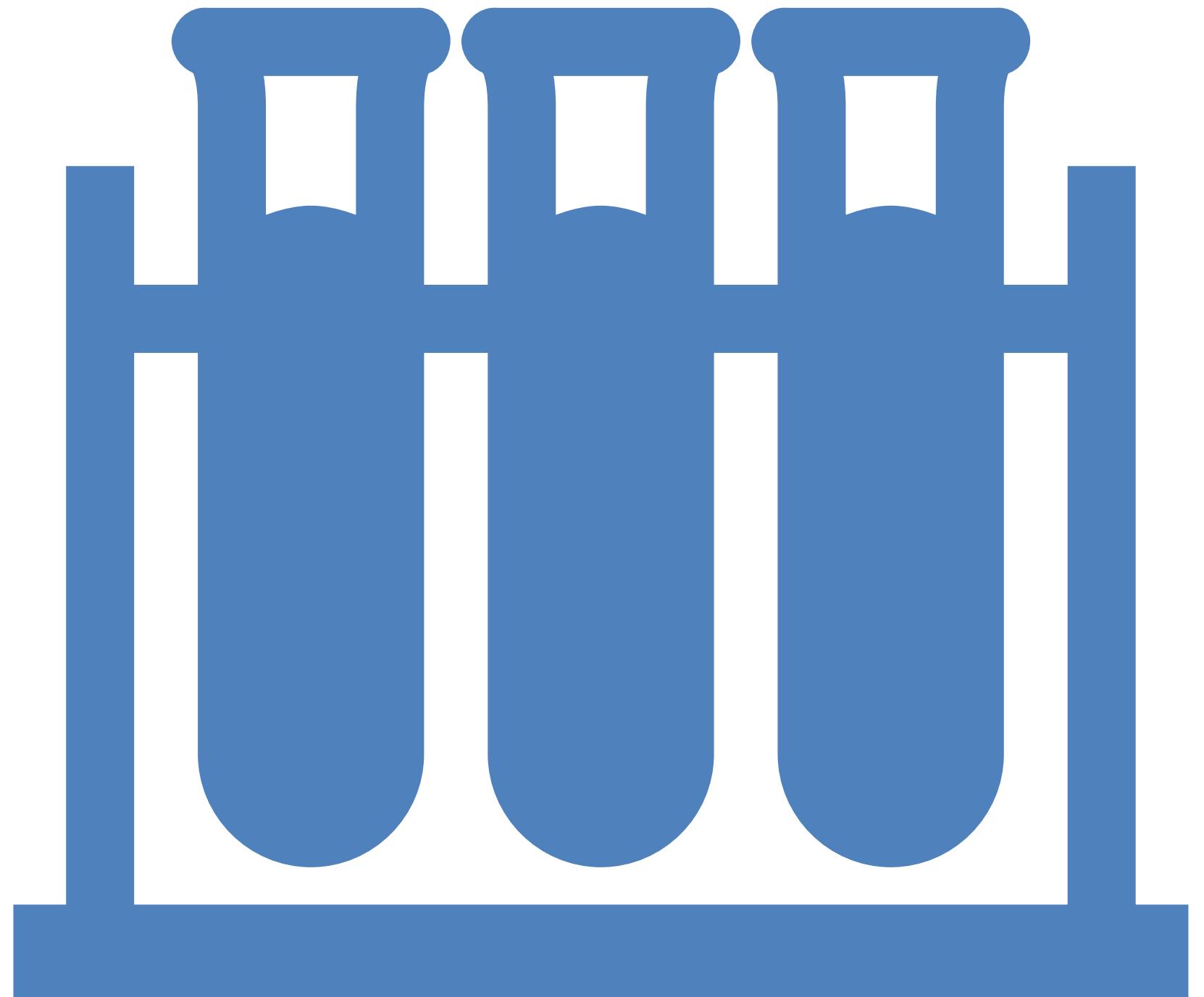
Folders contain Dashboards and Looks for specific groups of people. You can copy, move, or save Dashboards and Looks to a folder. ⓘ

Development Mode ⓘ



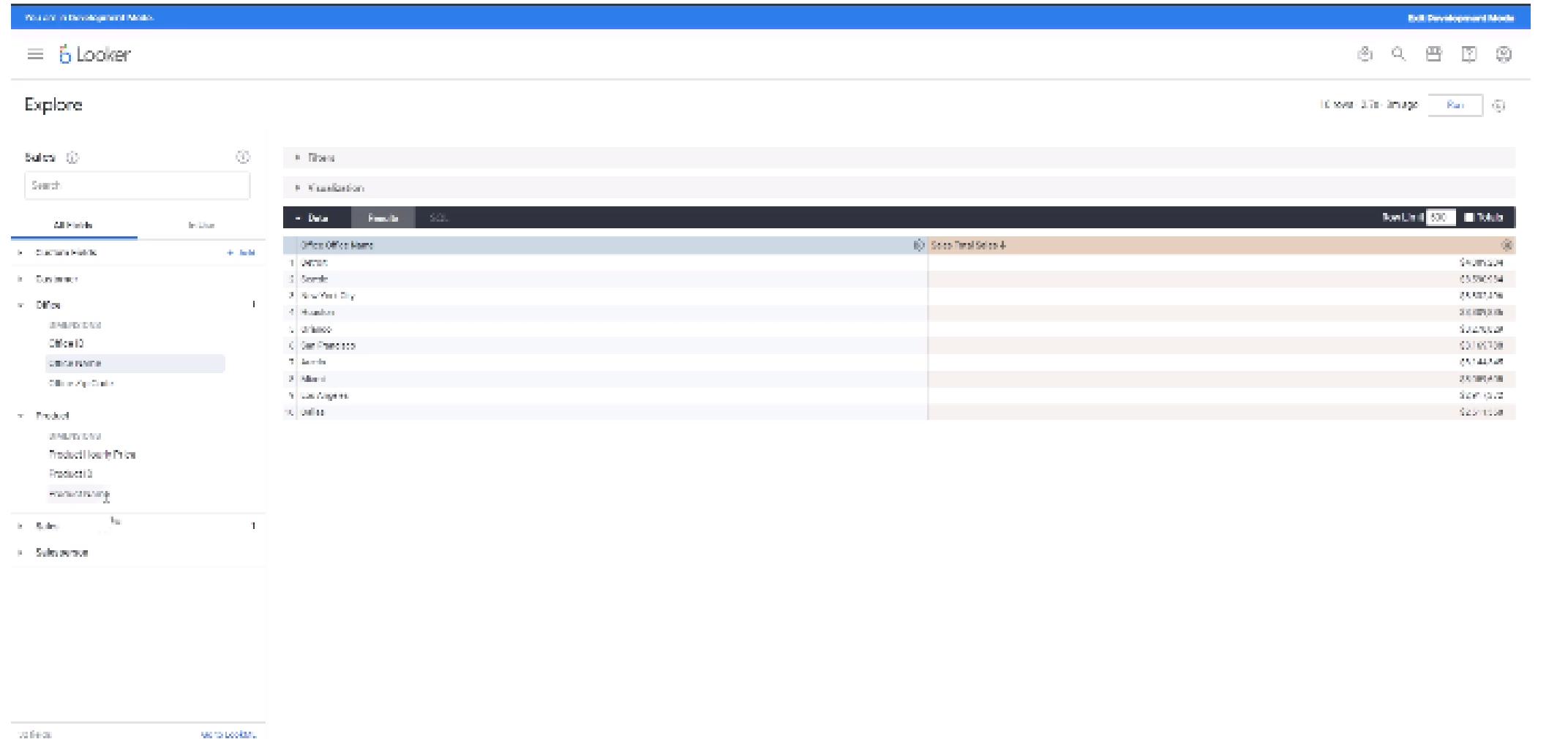
Menu Navigation

87



Lab 2: Menu Navigation

88



Dimensions and Fields

89

You are in Development Mode. [Exit Development Mode](#)

 Looker

Explore

109 rows · 2.9s · just now [Run](#) [⚙️](#)

Sales		Office Zip Code	Product Product Name	Sales Total Sales ↓	Sales Count
All Fields	In Use	Office Zip Code	Excavator	\$777,747	6
		1: Houston	Scraper	\$732,978	7
		2: San Francisco	Crawler	\$659,300	7
Product		3: Detroit	Excavator	\$619,427	4
DIMENSIONS		4: Seattle	Skid-Steer	\$591,858	6
Product Hourly Price		5: Orlando	Excavator	\$562,036	5
Product ID		6: Los Angeles	Scraper	\$553,048	6
Product Name		7: Houston	Excavator	\$548,183	7
Sales		8: San Francisco	Excavator	\$548,183	4
DIMENSIONS		9: Detroit	Back Truck	\$529,864	10
Customer ID		10: New York City	Trencher	\$514,791	7
Office ID		11: Los Angeles	Crawler	\$513,560	4
Salesperson ID		12: New York City	Compactor	\$508,368	4
State		13: Detroit	Bulldozer	\$501,811	4
Transaction Date		14: Houston	Dragline	\$501,331	6
Transaction ID		15: Orlando	Skid-Steer	\$496,980	7
MEASURES		16: Miami	Scraper	\$469,712	5
Average Hours		17: Miami	Excavator	\$463,086	3
Average Sales		18: Austin	Bulldozer	\$460,653	6
Count		19: Austin	Crawler	\$458,040	4
Hourly Price		20: Seattle	Dump Truck	\$453,884	5
Total Hours		21: Seattle	Dragline	\$452,341	6
Total Sales		22: Detroit	Bulldozer	\$446,406	5
Salesperson		23: Detroit	Dump Truck	\$440,248	4
Salesperson		24: Detroit	Crawler	\$430,280	4
Salesperson		25: Miami	Skid-Steer	\$424,692	5
Salesperson		26: New York City	Trencher	\$418,648	6
Salesperson		27: New York City	Crawler	\$418,135	5
Salesperson		28: San Francisco	Crawler	\$416,400	5
Salesperson		29: Dallas			

32 fields [Go to LookML](#)

90

The screenshot shows the Looker Explore interface. On the left, the sidebar displays the schema structure under the 'Sales' model. Under 'Dimensions', 'Office' is selected, showing fields like Office ID, Office Name, and Office Zip Code. Under 'Measures', 'Sales' is selected, showing fields like Customer ID, Office ID, Salesperson ID, State, Transaction Date, Transaction ID, and Average Hours. The main area shows a table titled 'Sales Total Sales ↓' with columns 'Office Office Name', 'Sales Total Sales ↓', and 'Sales Count'. The table lists 10 offices with their total sales and count of sales. The table has a 'Row Limit 500' setting and a 'Totals' checkbox.

Office Office Name	Sales Total Sales ↓	Sales Count
1. Detroit	\$4,089,204	48
2. Seattle	\$3,590,934	42
3. New York City	\$3,332,496	44
4. Houston	\$3,309,836	38
5. Orlando	\$3,276,829	41
6. San Francisco	\$3,169,788	37
7. Austin	\$3,144,345	41
8. Miami	\$3,059,605	37
9. Los Angeles	\$2,917,372	34
10. Dallas	\$2,511,358	36

Remove Fields

91

Sorting and Adding

Looker

Explore Will fetch 44 rows from cache Run

Sales

Search

All Fields In Use

Product

Sales

DIMENSIONS

Customer ID

Office ID

Salesperson ID

State

Transaction Date

Transaction ID

MEASURES

Average Hours

Average Sales

Count

Hourly Price

Total Hours

Total Sales

Salesperson

DIMENSIONS

Office ID

Salesperson Age

Salesperson First Name

Salesperson Function

Salesperson ID

Filters

Visualization

Date Results SQL

Row Limit 500 Totals

	Sales Total Sales ↓	Sales Average Sales
16 District of Columbia	\$647,886	\$58,899
17 Nebraska	\$573,466	\$81,924
18 Georgia	\$540,867	\$67,608
19 Michigan	\$537,127	\$76,732
20 South Carolina	\$509,146	\$101,829
21 North Carolina	\$492,925	\$84,769
22 Massachusetts	\$482,218	\$80,370
23 Indiana	\$475,165	\$95,033
24 Tennessee	\$419,917	\$69,986
25 Maryland	\$394,137	\$78,827
26 Louisiana	\$385,283	\$77,057
27 Iowa	\$305,164	\$76,291
28 Kentucky	\$279,704	\$69,926
29 Kansas	\$274,439	\$137,220
30 Wisconsin	\$246,171	\$49,234
31 Mississippi	\$234,977	\$78,326
32 Nevada	\$211,394	\$52,849
33 Minnesota	\$196,315	\$39,263
34 New Hampshire	\$179,058	\$89,529
35 Idaho	\$172,977	\$86,489
36 West Virginia	\$153,551	\$153,551
37 South Dakota	\$139,304	\$139,304
38 Arkansas	\$116,880	\$116,880
39 Rhode Island	\$111,300	\$111,300
40 North Dakota	\$109,046	\$54,523
41 New Jersey	\$106,145	\$106,145
42 Connecticut	\$104,096	\$34,699
43 New Mexico	\$94,992	\$94,992

You are in Development Mode.

Looker

Main menu

Explore

Inventory

Search

All Fields

In Use

+ Add

- Custom Fields
- Inventory
- Office
- Product

Quick Start

Explore from a prebuilt analysis in Inventory or select fields from the field list.

Count by Status

Count of Products by Status

A screenshot of the Looker interface. At the top, a blue bar says "You are in Development Mode.". Below it is the Looker logo and navigation links for "Main menu" and "Explore". On the left, there's a sidebar titled "Inventory" with a search bar and a list of fields: "All Fields" (selected), "In Use", "+ Add", "Custom Fields", "Inventory", "Office", and "Product". The main area is titled "Quick Start" with the sub-instruction "Explore from a prebuilt analysis in Inventory or select fields from the field list.". It shows a card for "Count by Status" with the sub-instruction "Count of Products by Status".

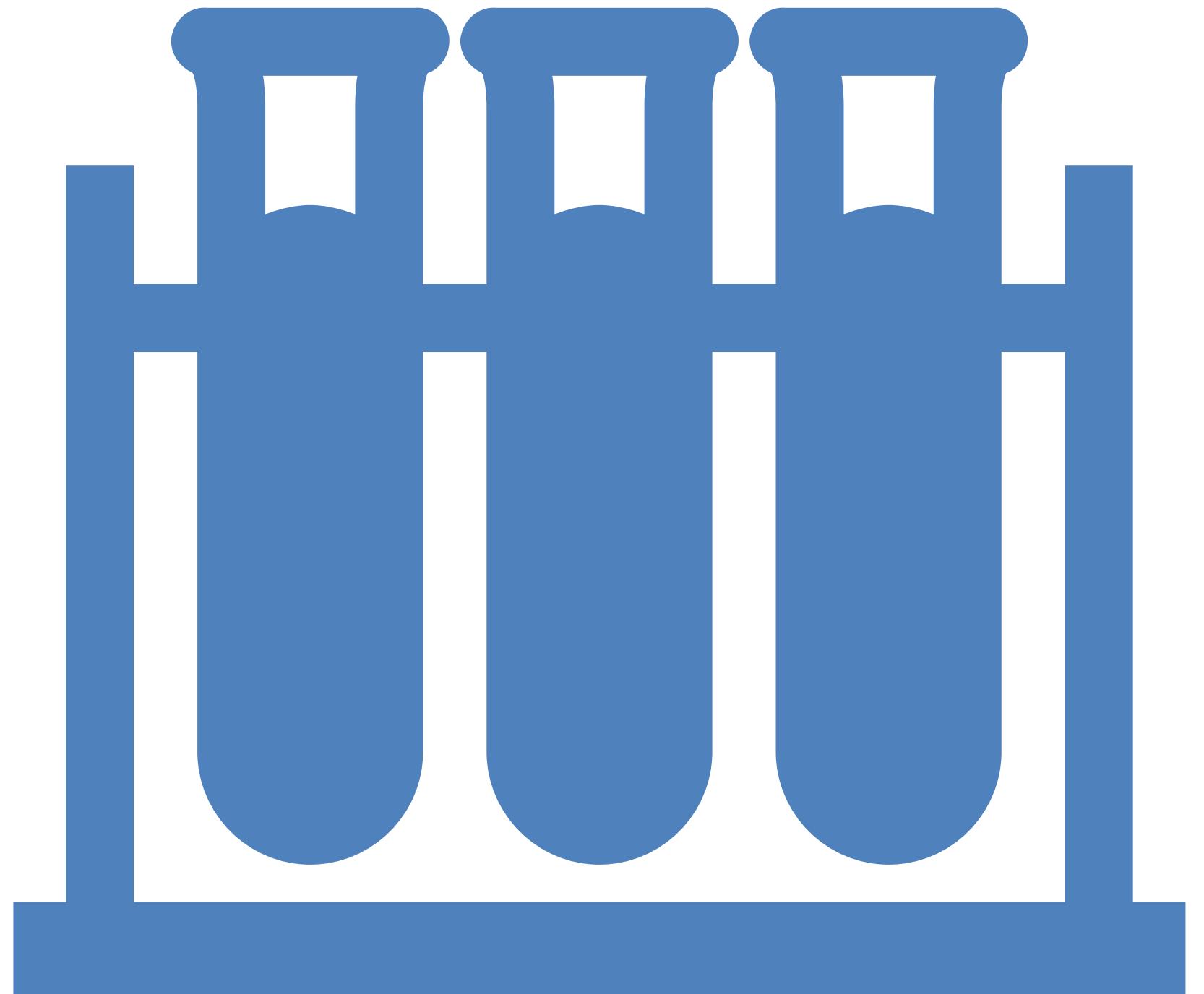
Quick Start Analysis

93

The screenshot shows the Looker Explore interface. At the top, there's a navigation bar with a menu icon, the Looker logo, and several icons for search, filters, and visualization. Below the navigation is a toolbar with 'Run' and 'Settings' buttons. The main area is titled 'Explore' and contains a sidebar on the left with a tree view of data fields. The 'Sales' node is expanded, showing 'All Fields' and 'In Use' sections. Under 'All Fields', there are nodes for 'Custom Fields', 'Customer', 'Office', 'Product' (expanded to show 'Dimensions' like 'Product Hourly Price', 'Product ID', 'Product Name'), and 'Sales' (expanded to show 'Dimensions' like 'Customer ID', 'Office ID', 'Salesperson ID', 'State', and 'Measures' like 'Average Hours', 'Average Sales', 'Count', 'Hourly Price', 'Total Hours'). The central workspace is currently empty, with a placeholder message: 'Select some dimensions or measures.'

Pivot Field

94



Lab 3: Dimensions and Fields

95

Explores Revisited (Demo)

Explorer as a Starting Point: The Explorer is where users begin analyzing datasets before saving a Look or Dashboard.

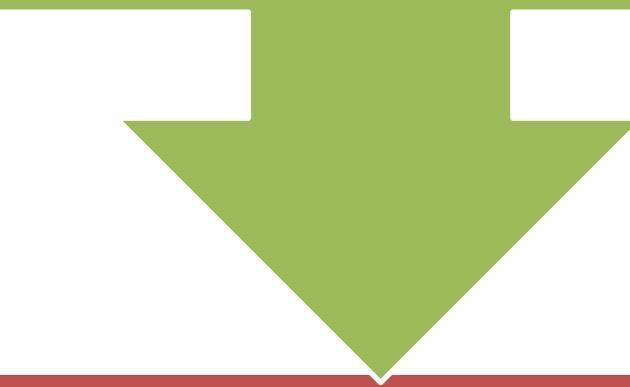
Available Datasets: Looker provides access to pre-built datasets and explorers, such as e-commerce, events, and FAA data, for immediate use.

Interactive Data Exploration: Users can select fields (dimensions and measures) from the dataset, build custom queries, and run reports to visualize data insights.

Customizable Analysis: Add, remove, and adjust fields in real-time while exploring data, with the option to create custom fields for deeper insights.

Filtering Data: Filters allow you to narrow down data in Explorer based on specific criteria, such as excluding certain values like "orange" from a fruit dataset.

Filters Revisited



Filter Methods:

Direct Filter from Column Options: Click on a field's column options, select 'Filter,' and set conditions (e.g., "is not equal to orange").

Filters Section in Explorer: Access and manage filters at the top section of the Explorer interface, allowing multiple conditions.

Advanced Filters Menu: Select filter options directly from fields (dimensions or measures) on the left, offering greater control over filter types (e.g., "does not match," "contains").

Sorting Revisited



Sorting Columns: Easily sort your data by clicking the column headers in Explorer (e.g., sort by color, total price).



Ascending/Descending Order: Click the 'Sort' button to toggle between ascending (A-Z) and descending (Z-A) orders for any column.



Practical Use Cases: Sorting by numerical fields, such as total price or average price, can provide quick insights into your data.



Multiple Sorting Options: You can apply sorts to multiple fields at once to refine your data analysis further.

Row Limits and Totals

1

Displaying Totals: Click the 'Totals' option to display the total values for your measures at the bottom of the data results. Looker intelligently calculates the weighted average for fields like average price.

2

Subtotals: For datasets with multiple categories, subtotals can be enabled to provide a breakdown of totals for each category.

3

Row Limit: You can limit the number of rows displayed in the Explorer by setting a row limit (e.g., 10 or 20). The limit only affects the view, not the underlying dataset.

4

Totals Unaffected by Row Limit: Even when limiting the number of rows displayed, the totals remain accurate and reflective of the full dataset.

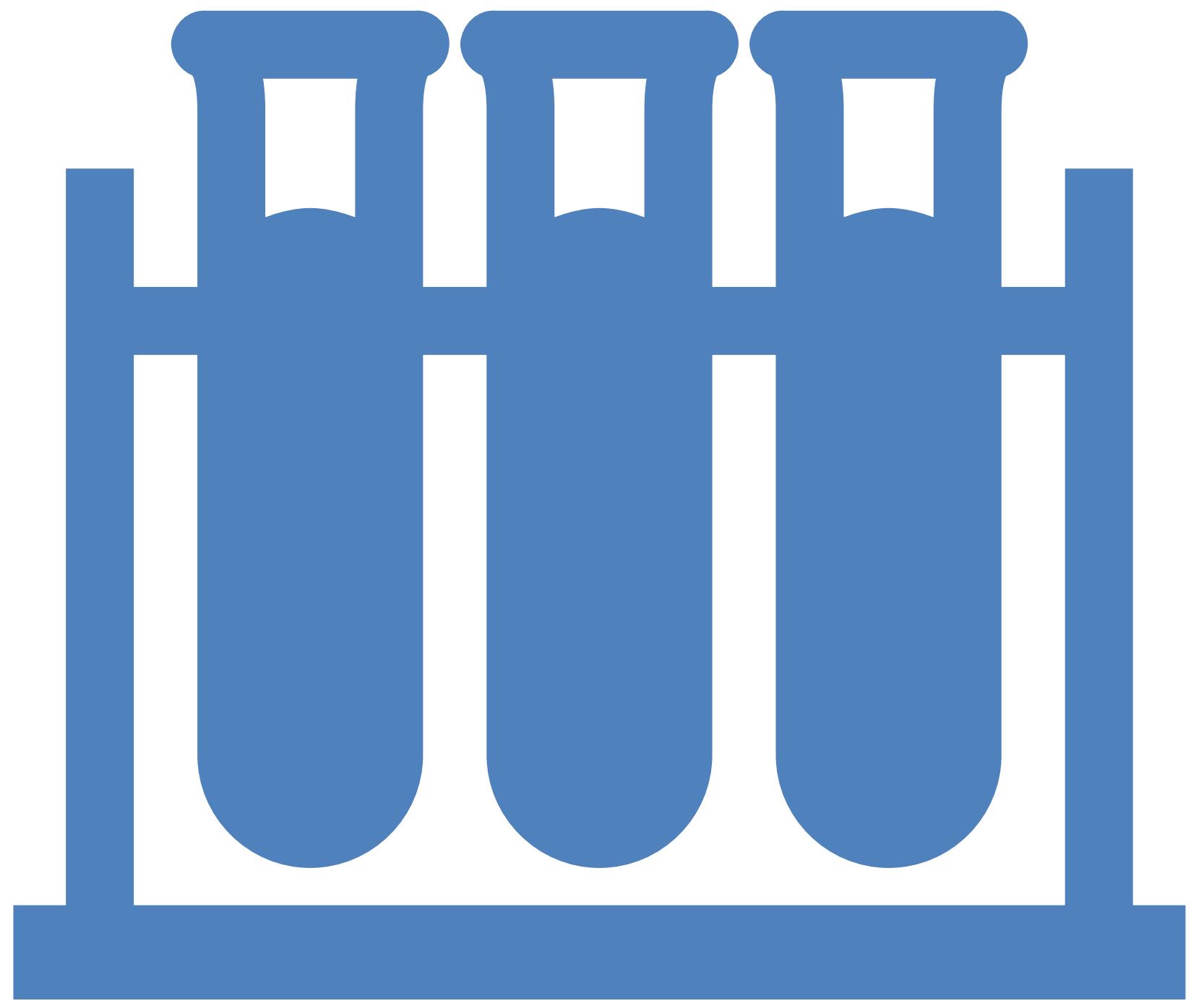
In use and Clear Field Options

Quick Reset Option: If your analysis becomes too complex, instead of manually removing each column, switch to the **In-Use** section to see all currently used fields.

Clear All Fields: Use the **Clear Row** option to instantly remove all selected fields and filters, allowing you to start a fresh analysis.

Keep Filters: Alternatively, use the **Clear Fields** option to remove all columns while keeping any filters you've applied.

Efficiency: This feature is particularly useful when working with many fields, saving time by avoiding manual deletion.

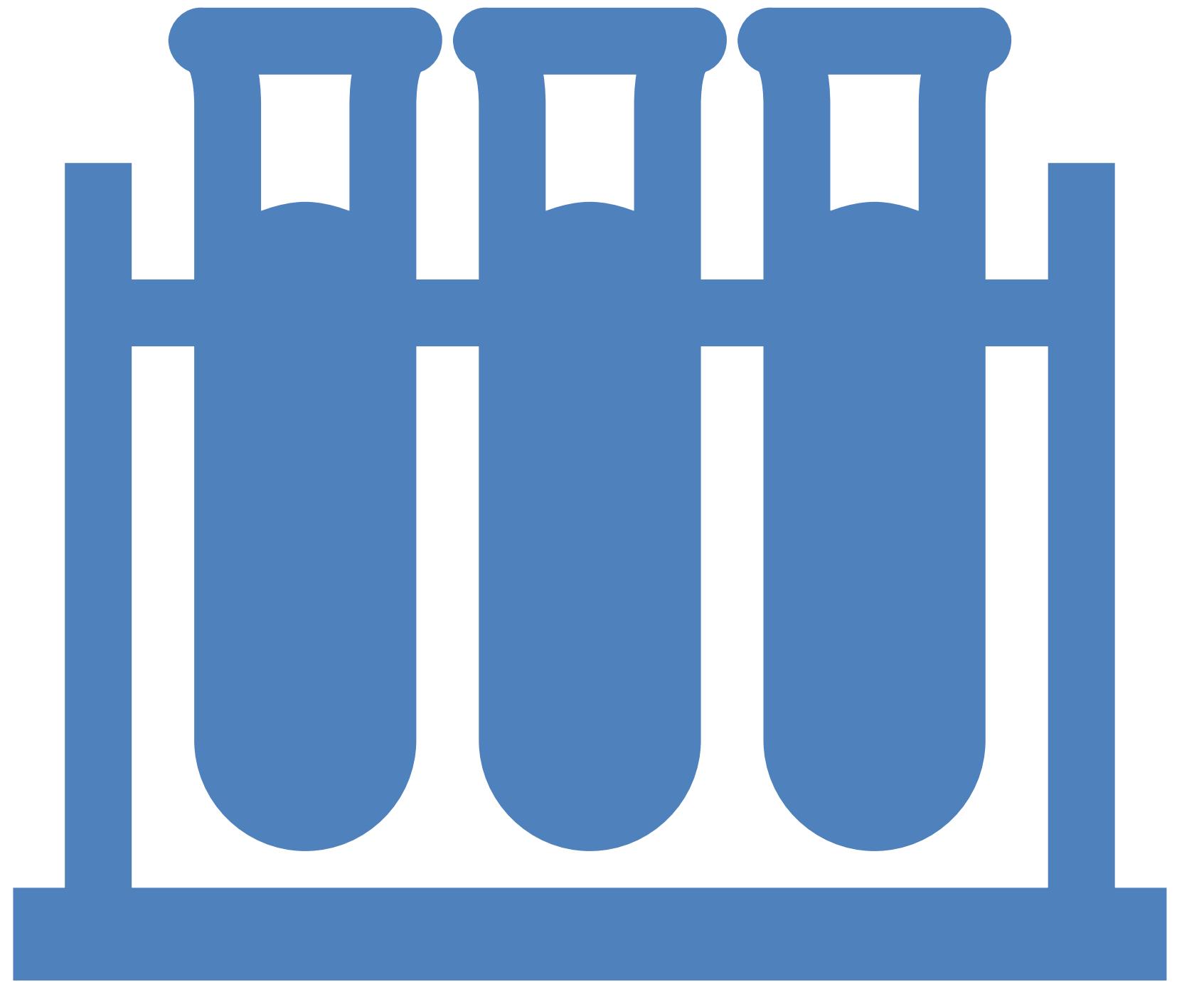


Lab 4: Sorting and Adding Totals

101

A large humpback whale is shown swimming in the deep blue ocean. The whale's dark grey body is angled upwards and to the right, with its long pectoral fin visible on the left side. The surface of the water is visible in the background, with sunlight reflecting off the ripples.

Pivoting on Explores



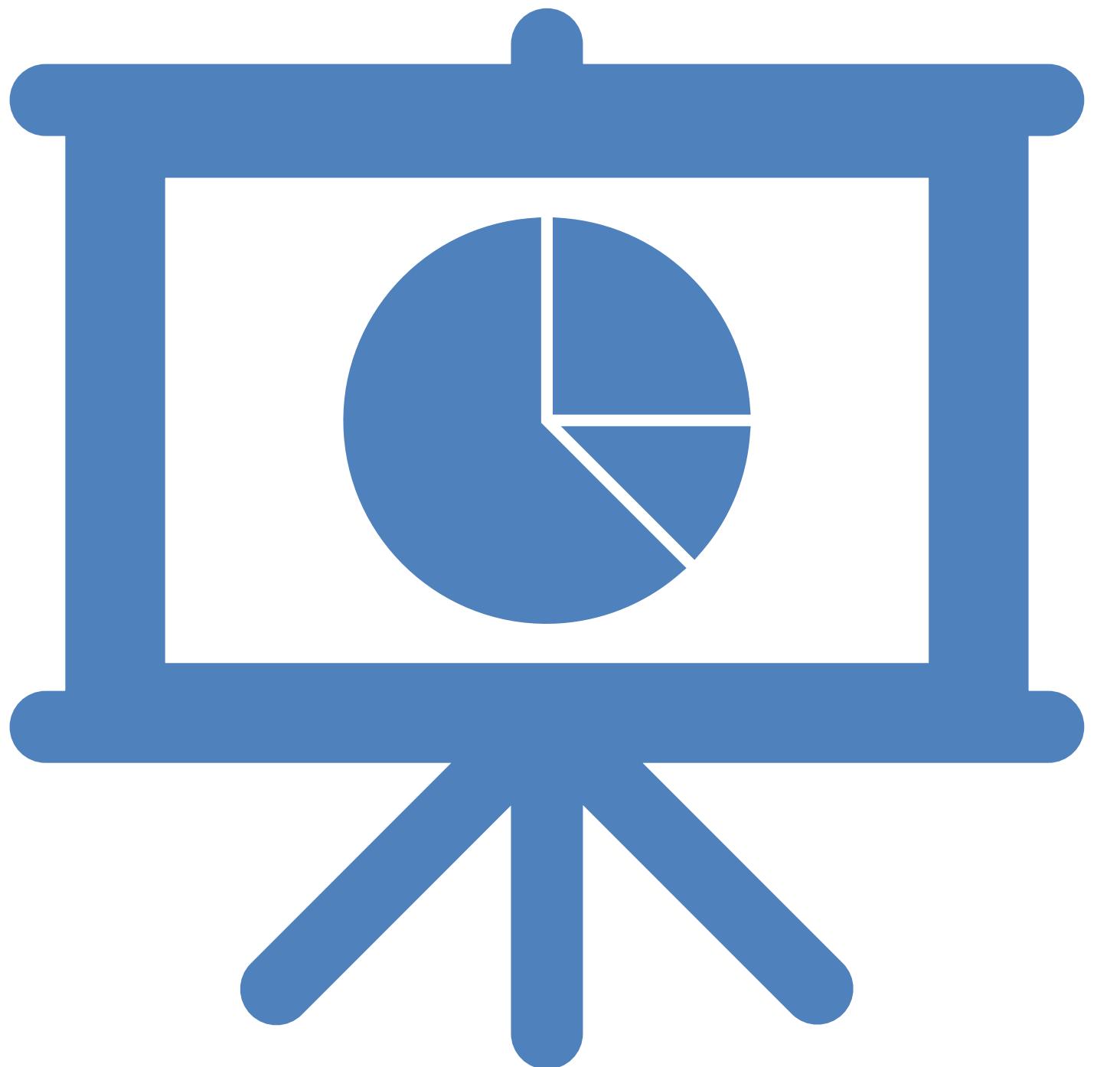
Lab 5: Pivots

103



Caching

- **Cached Queries:** Looker stores the results of prior queries in an encrypted cache file to reduce future database load.
- **Running Queries:**
- **Initial Query:** When running a query for the first time, Looker retrieves data directly from the database and caches the results.
- **Subsequent Query:** If the same query is run again within the cache validity period, Looker retrieves the data from the cached file instead of querying the database.
- **Expired Cache:** If the cache has expired based on the cache policy in LookML, Looker retrieves fresh data from the database.
- **Cache Policy:** Developers can define cache duration in LookML, such as one hour, after which cached data expires, prompting a new query to the database.

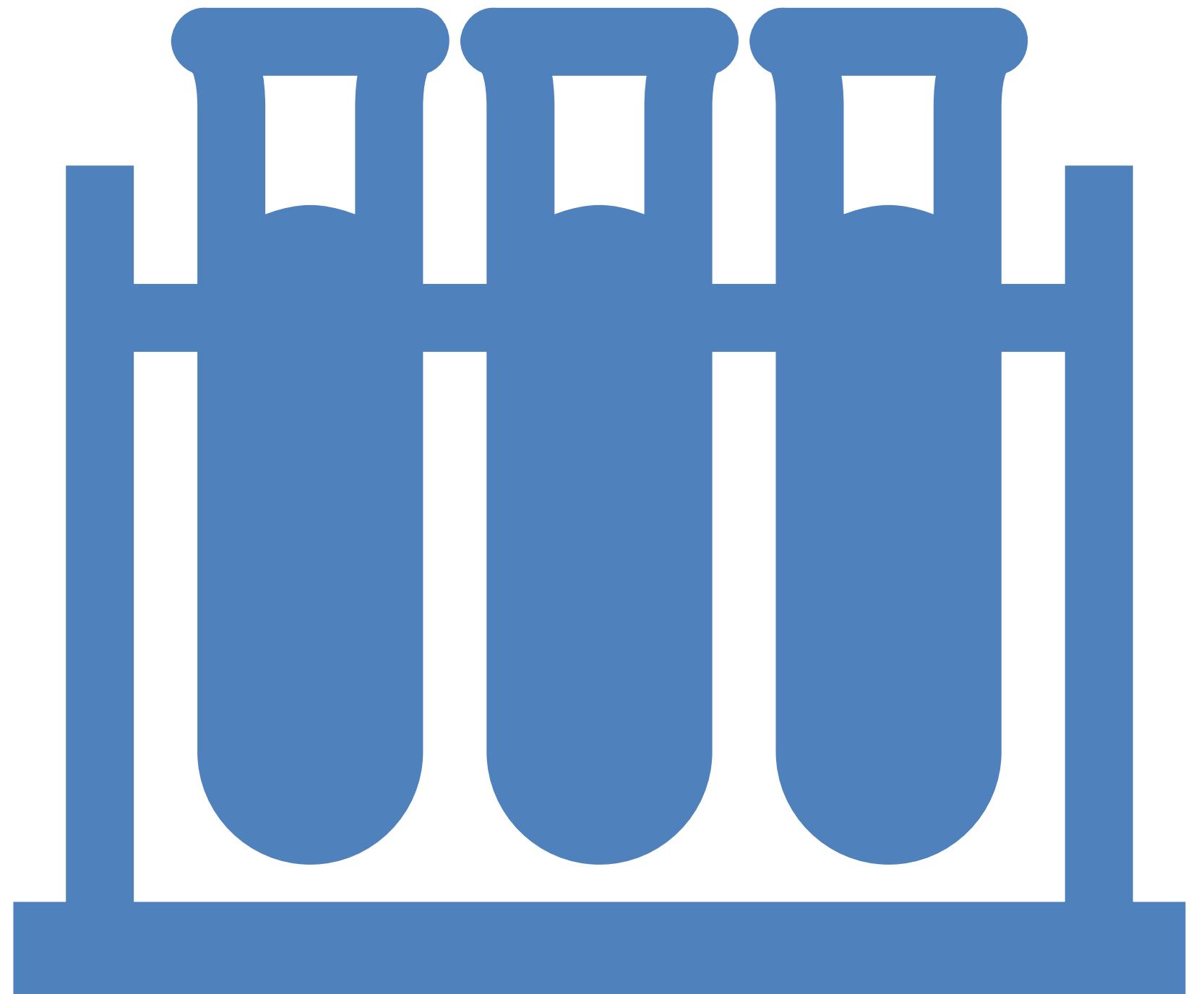


4. INTRO TO VISUALIZATIONS

105

Table Visualizations





Lab 6: Table Visualization

107

9,200

1,100

1,000

900

800

700

600

500

Column Charts



Bar Charts

Plot

Series

Values

Legend Positioning

- Grouped
- Stacked
- Stacked Percentage

Grid Layout

- None
- Show Percent of Previous

Inner Spacing

- 0px
- 1px
- 2px

Spacing

- 0px
- 1px
- 2px

Legend

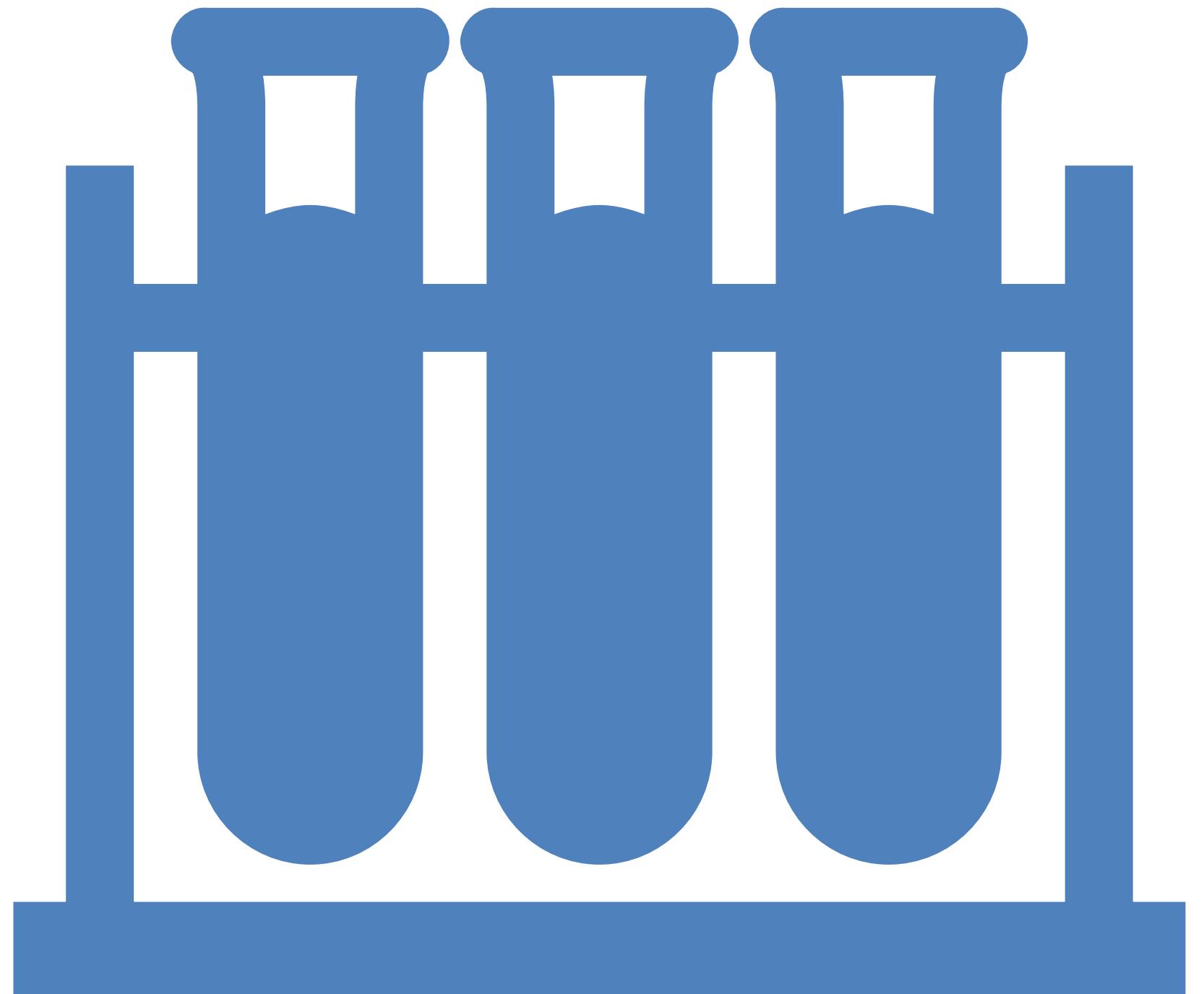
- Hide Legend
- Show Legend

Legend Align

- Center
- Left
- Right

Label Displacement

- 0px
- 1px
- 2px



Lab 7: Bar Visualization

110

Created Date

Jun 3

Jun 5

Jun 7

Jun 9

Scatter plots

250 260 270 280 290 300 310 320 330 340 350 360 370 380

7

Series Index

1

Show Label

Label Type

String

R²

Equation

Label Position

Left

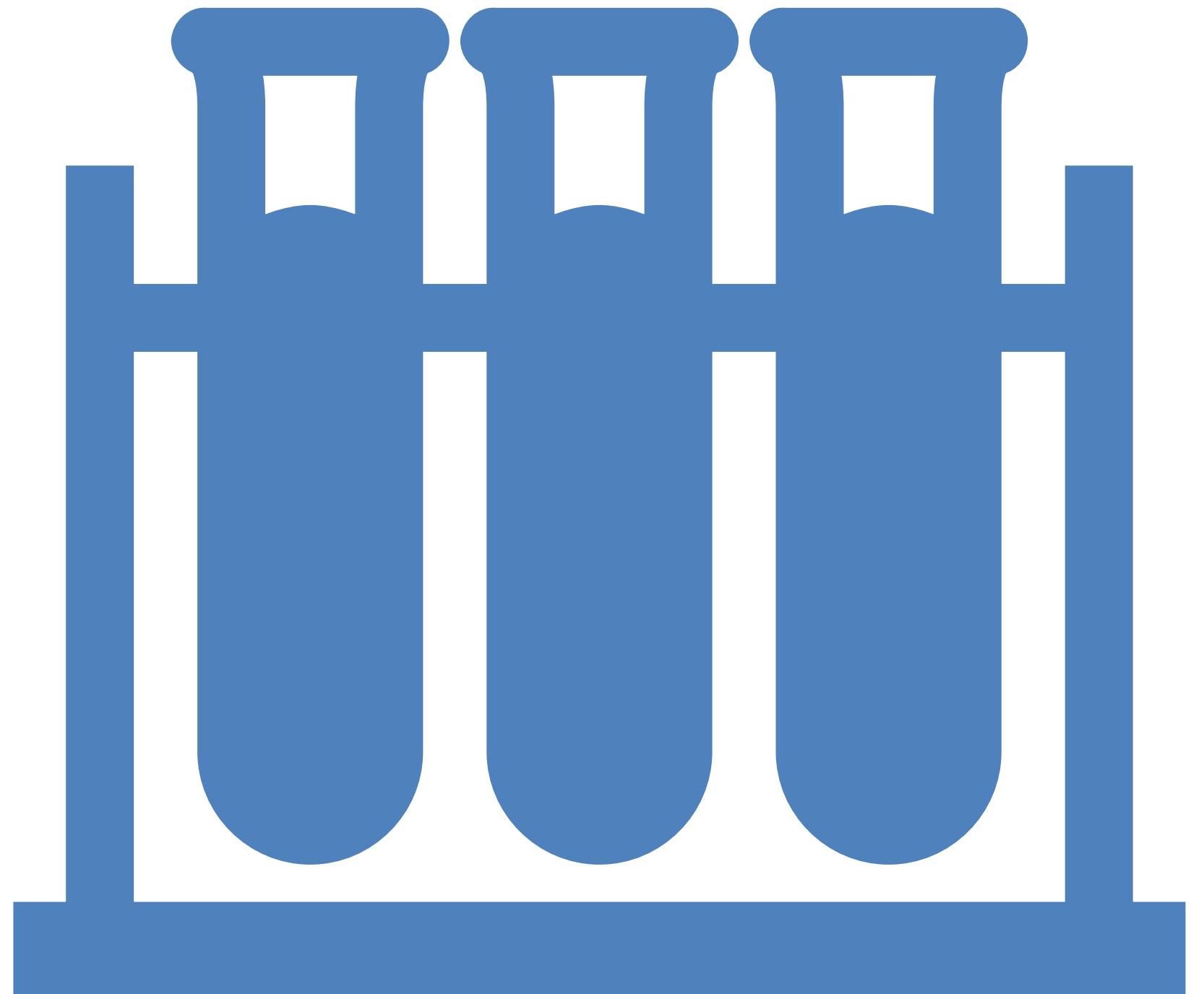
Center

Right

Color



Add Trendline

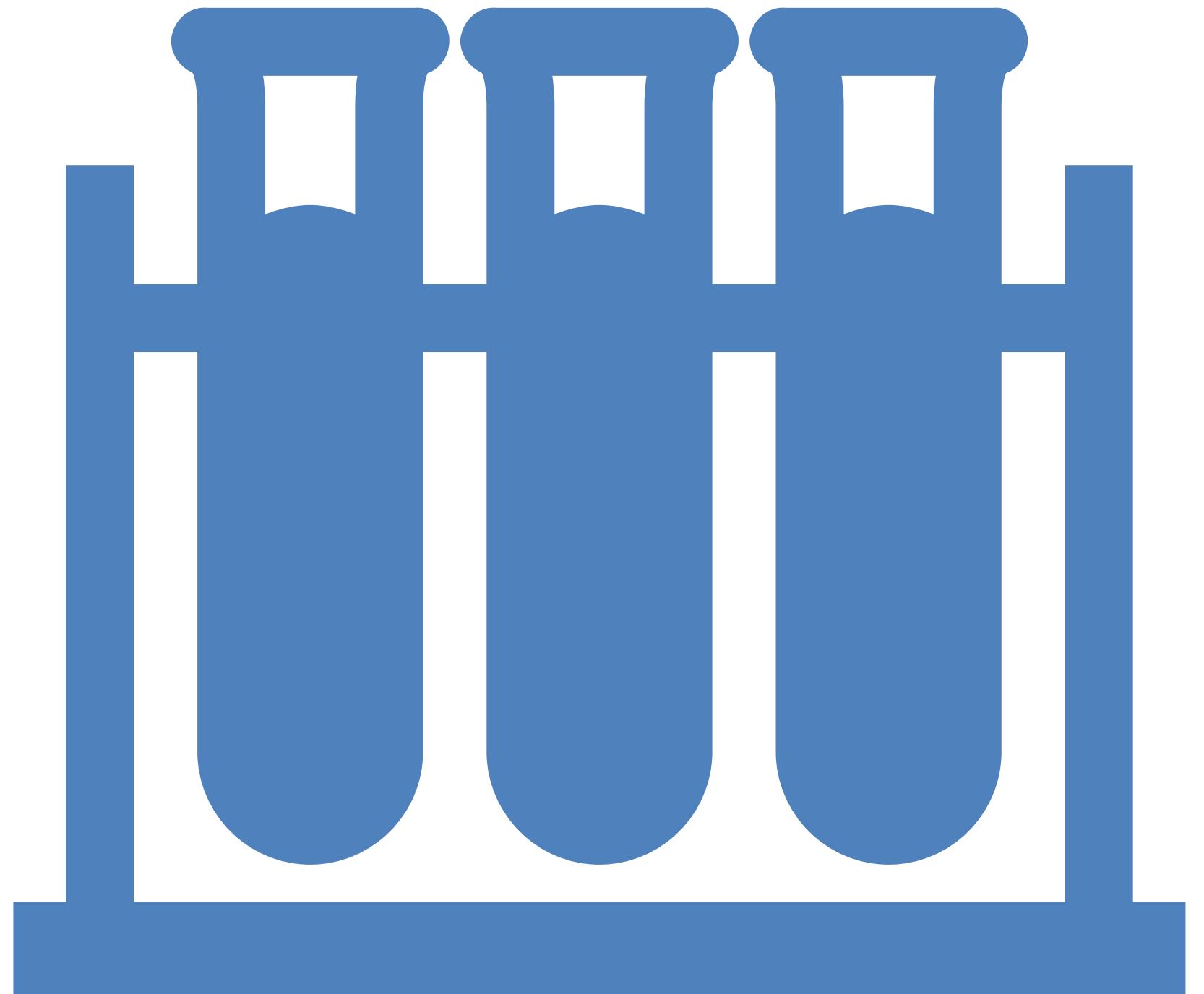


Lab 8: Scatter Visualization

112

Line Charts





Lab 9:
Line,Area,Pie
Chart
Visualization

114



Maps

0.00

Demo



Platform

Channel

Country (1)

Active users

Dec 30, 2020

Transactions

6

-64.7%

Percentage Change

Absolute Change

\$ -11

Total Revenue

\$347

-63.8%

\$ -611

Average Purchase Revenue

\$58

+ 2.6%

+ \$1

Product sold
Product revenue

10

5

0

6

0

Google

Apparel

Uncategorized Items

Item Brand

Category

Subcategory

Region

Country

State

City

Postal Code

Address

Latitude

Longitude

Address Line 1

Address Line 2

Address Line 3

Address Line 4

Address Line 5

Address Line 6

Address Line 7

Address Line 8

Address Line 9

Address Line 10

Address Line 11

Address Line 12

Address Line 13

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Address Line 173

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Address Line 175

Address Line 176

Address Line 177

Demo



Platform

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Dec 30, 2020

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Absolute Change

\$ -11

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\$347

-63.8%

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Average Purchase Revenue

\$58

+ 2.6%

+ \$1

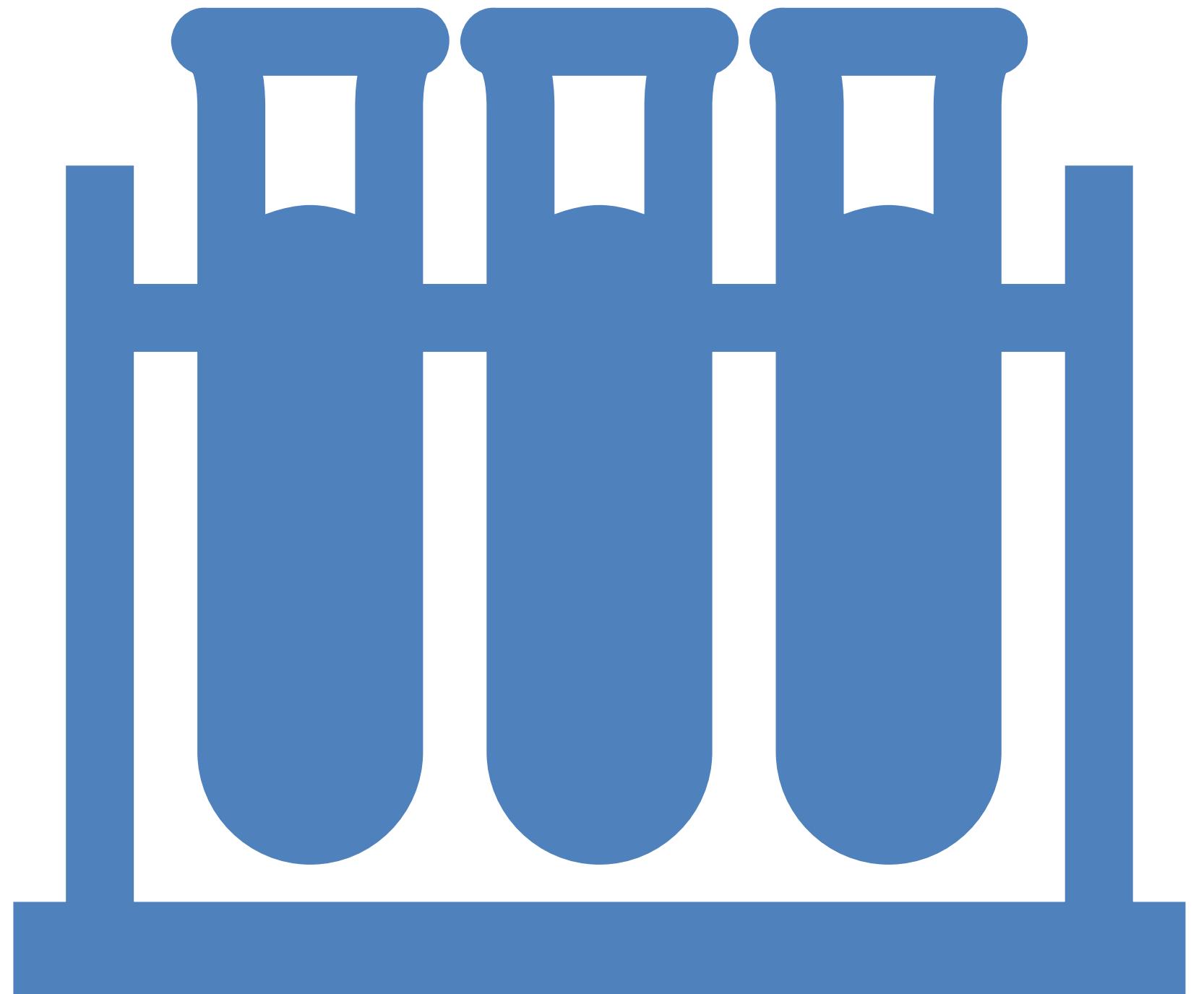
Item Brand

Product sold
Product revenue


Looks

 Type to search

<input checked="" type="checkbox"/> Vietnam	455	Purchase-to-view 7.06%
<input type="checkbox"/> Venezuela	41	-46.7%
<input type="checkbox"/> Uruguay	41	-6.19%
<input type="checkbox"/> United States	44.4K	
<input type="checkbox"/> United Kingdom	3.2K	
<input type="checkbox"/> United Arab Emirates	315	
<input type="checkbox"/> Ukraine	404	
<input type="checkbox"/> Turkey	1K	
<input type="checkbox"/> Tunisia	51	
<input type="checkbox"/> Trinidad & Tobago	23	
<input type="checkbox"/> Thailand	438	



Lab 10: Create a Look

118

count by month ❤

12 rows · from cache · 2m ago · America - Los Angeles

Orders Created Date in the year 2019

Reset Look | Explore from Here

on

Selected Month

▼ Orders



Details

Description

None

Scheduled

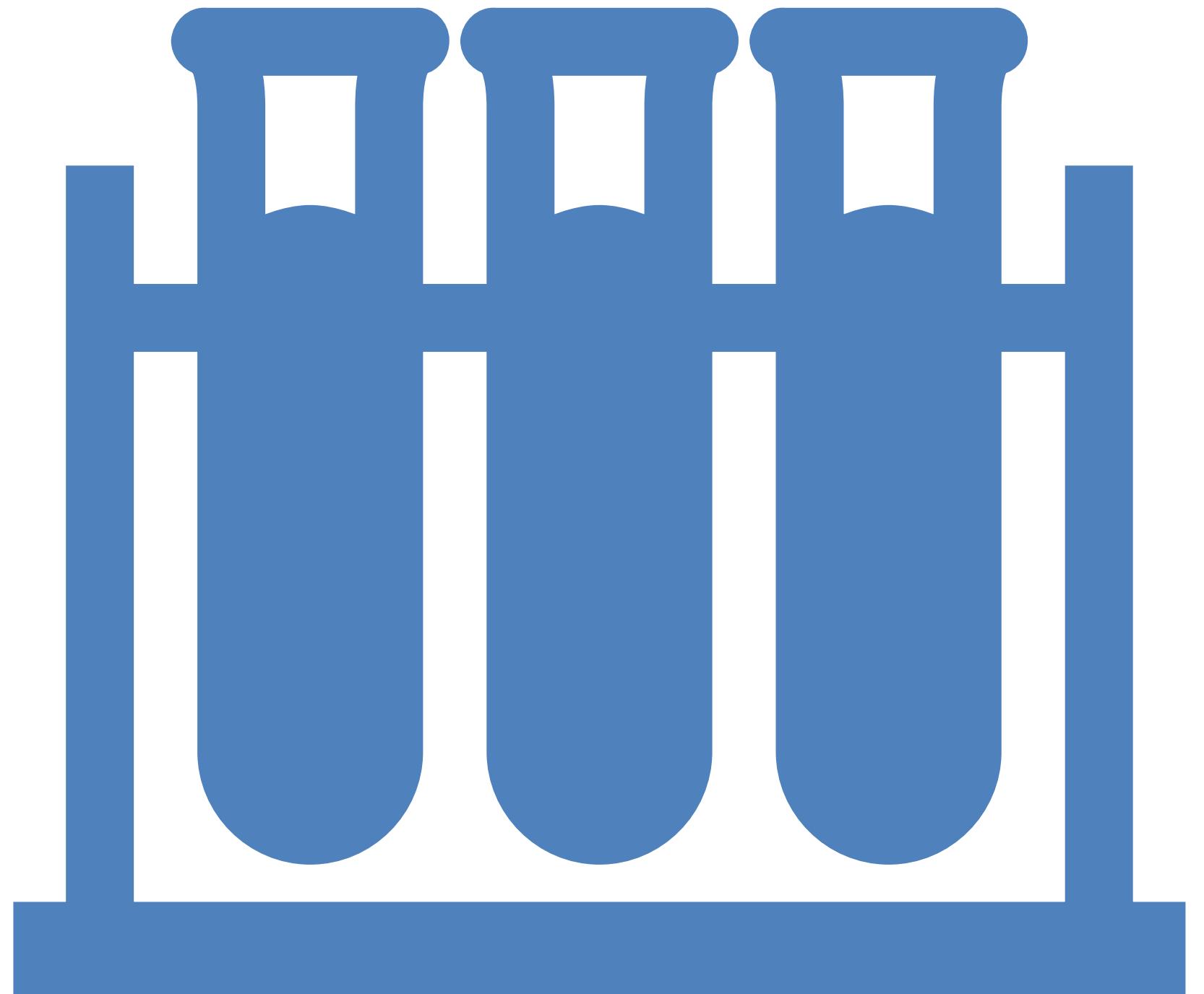
No

On Dashboards

Business user activity

Order activity

Created by Lauren Docs on 2021-12-01
Updated by Jon Allen on 2022-04-25



Lab 11:

Organize and Edit a Look

120



▼ Shared

selected

▶ Account Management

Admin

Alliances

Business Operations

Company A's Content

▶ Customer Success

Customers

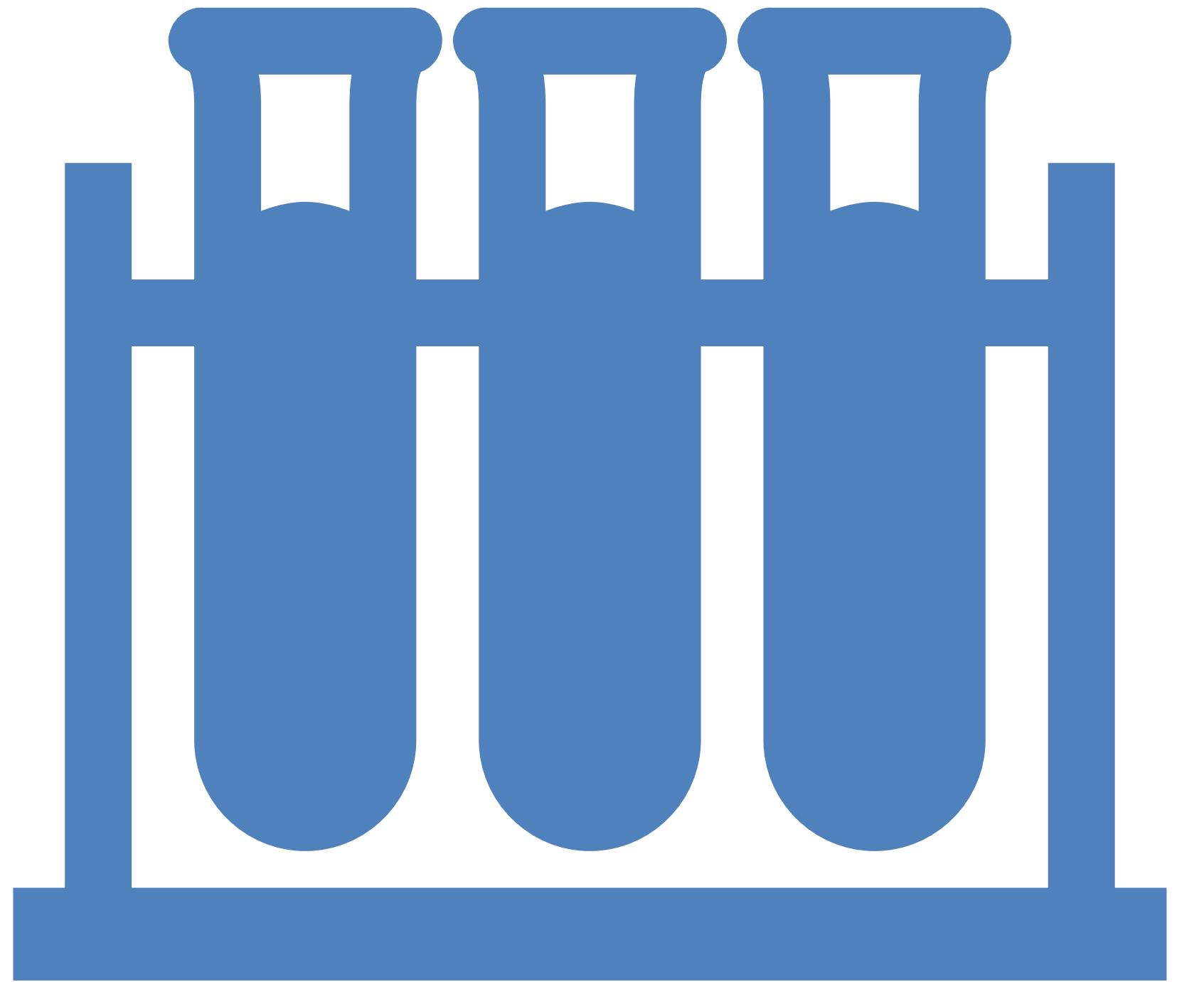
▶ Engineering

Finance

Human Resources

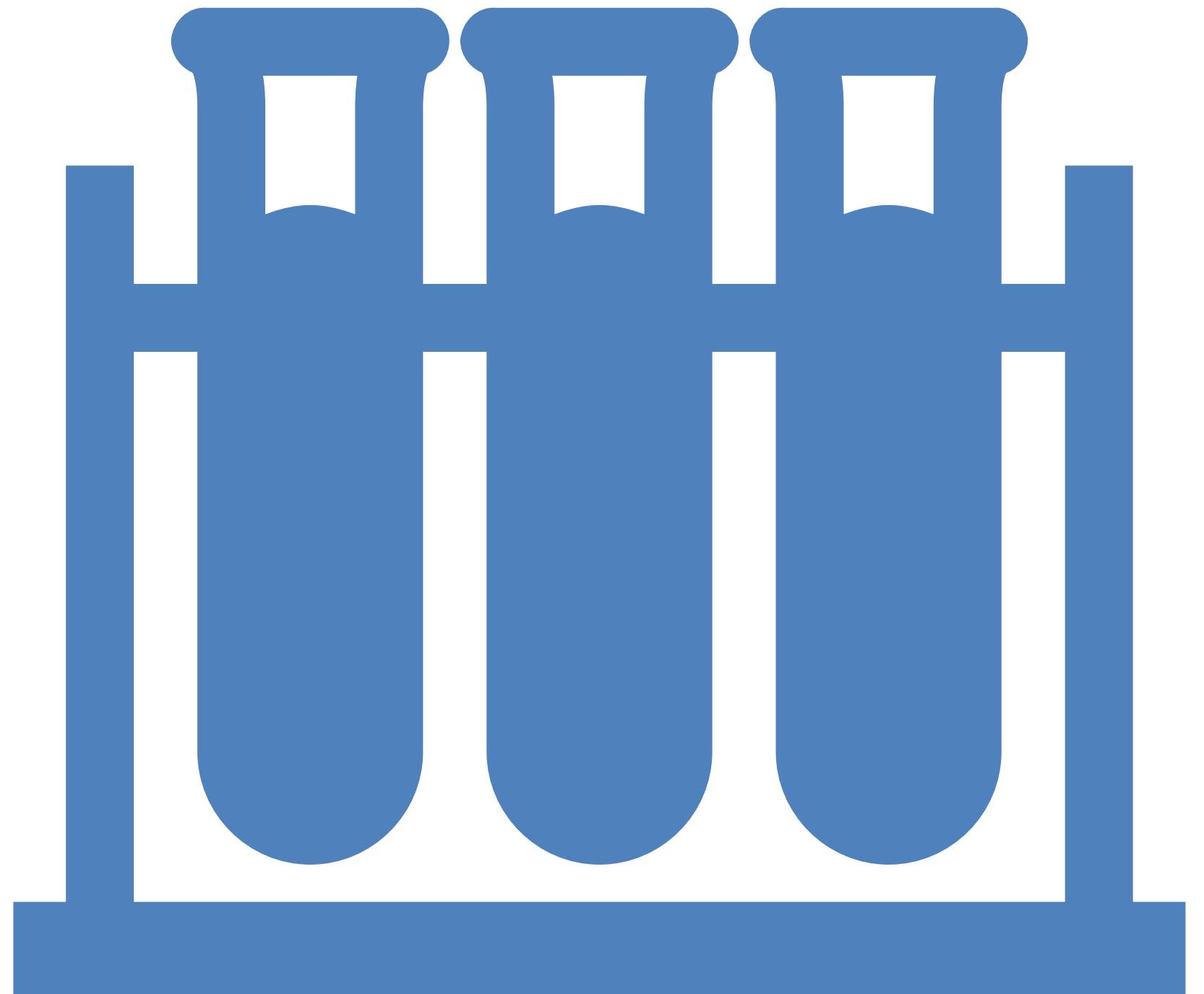
Look Options

▶ Users



Lab 12: Filter a Look

122



Lab 13: Using Operators in Looker Filters

123

Pacific Northwest

3

4

is Oregon



Group Name

Other

5

is

Oregon



Group remaining values

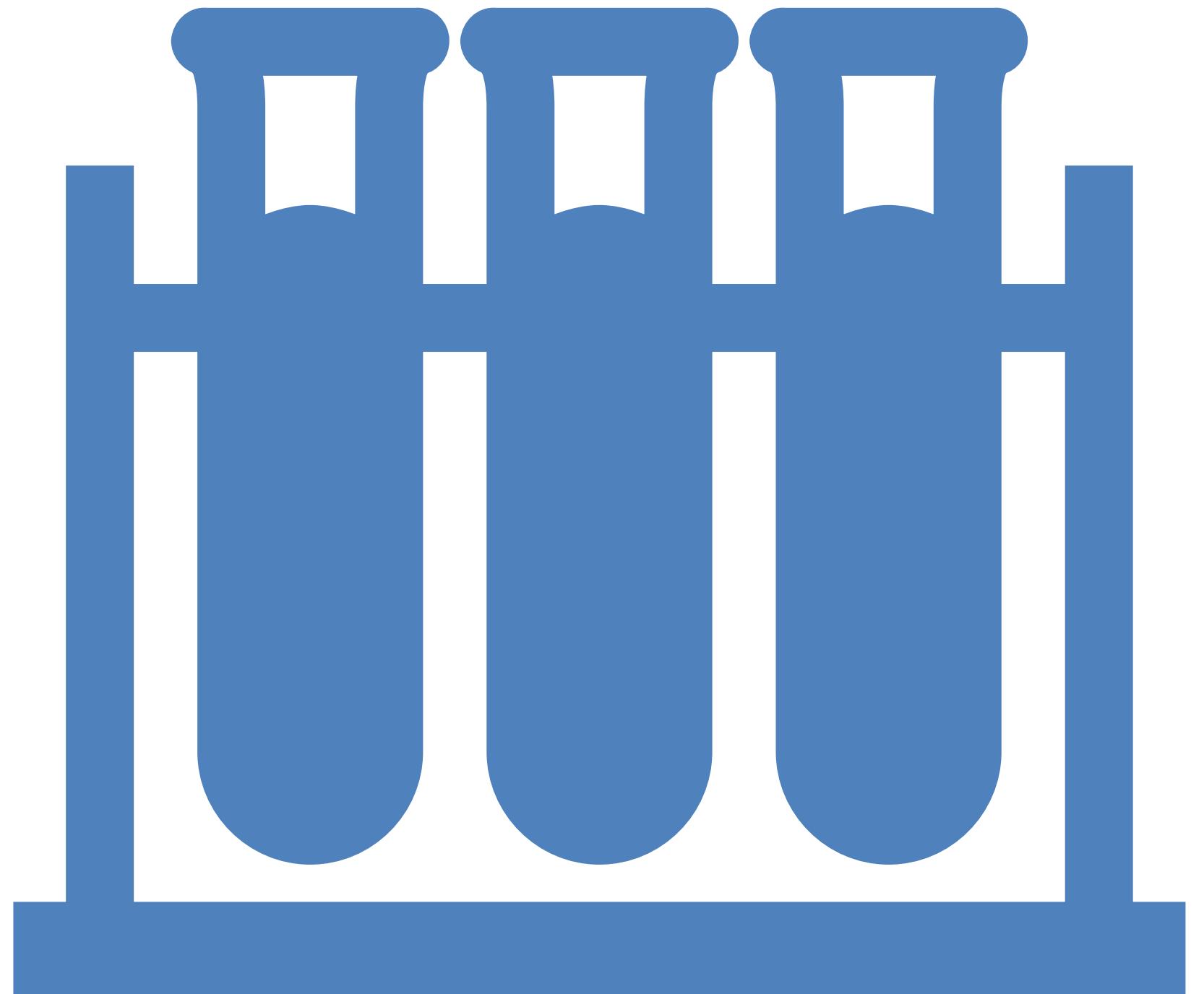
Field name

State Groups

+ Add description

Custom Fields Intro and Dimensions

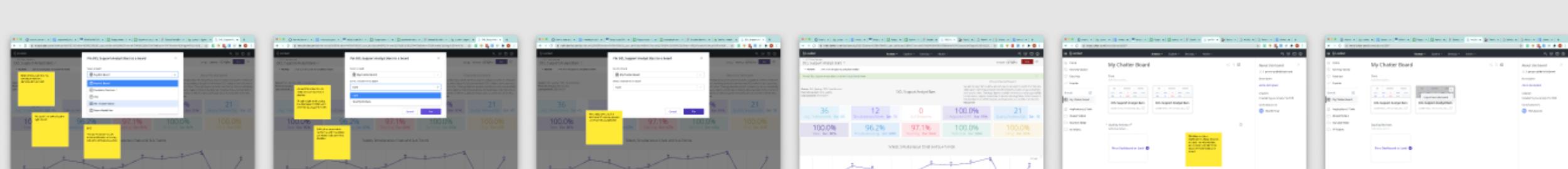
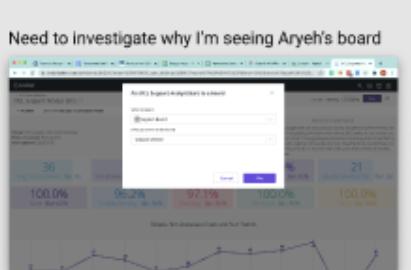
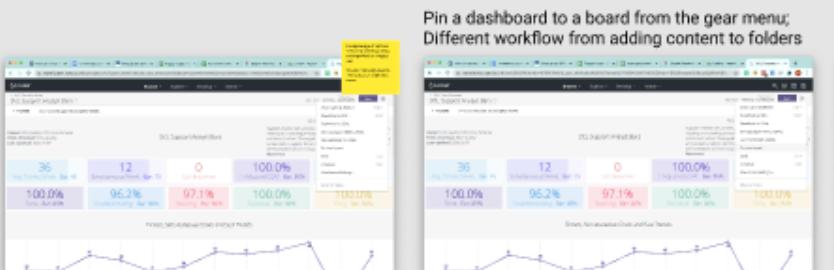
ave



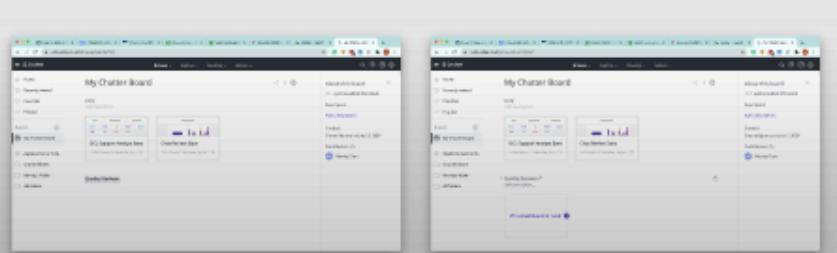
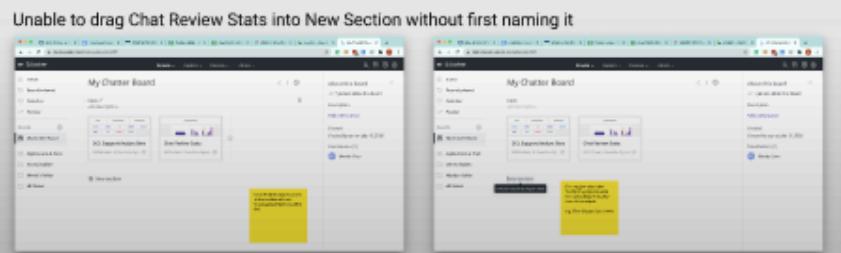
Lab 14: Table Calculations

125

Adding dashboard to board

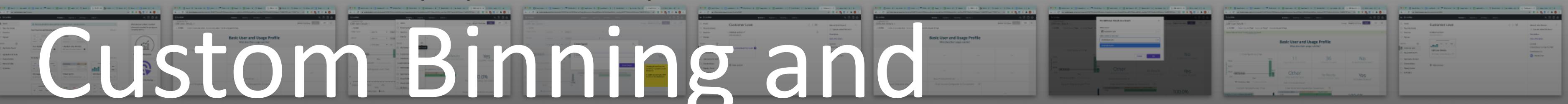


Editing a board

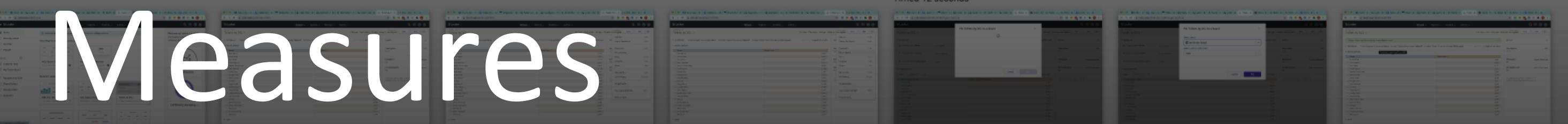


Creating a board from dashboard (from Browse menu)

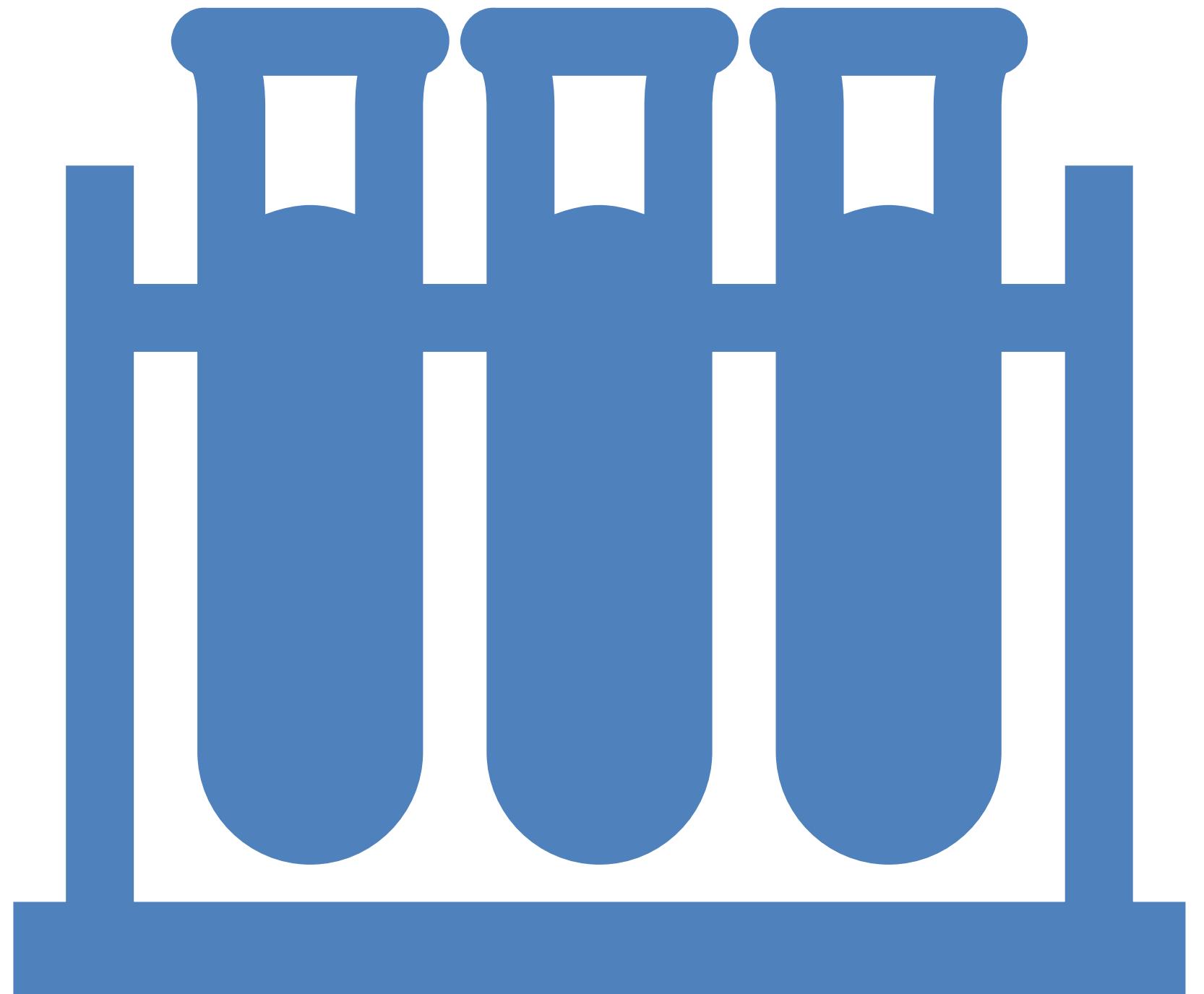
Want to add GBR User Details to a new board;
create board from navigation menu - goes to the board and have to click on the back arrow to go back to dashboard



Adding a Look to a board



Custom Binning and Measures



Lab 15: Custom Measures

127

```
 ${orders.is_first_purchase} AND if  
   (${orders.amount} - ${orders.cost} > 0,  
    yes,no)
```

`value_1 > value_2`

Returns `Yes` if `value_1` is greater than
`value_2`, and `No` otherwise

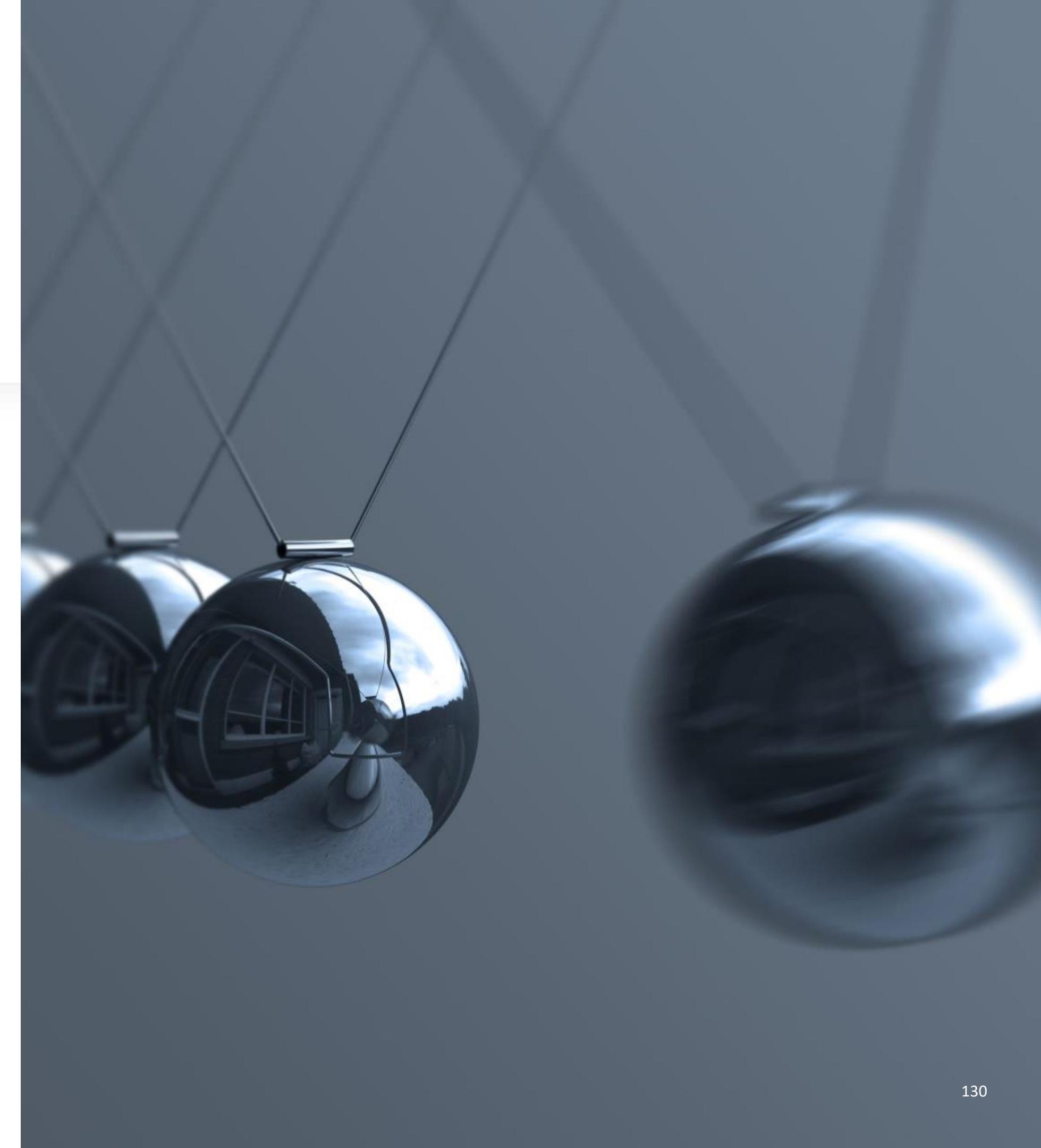
Looker Expressions

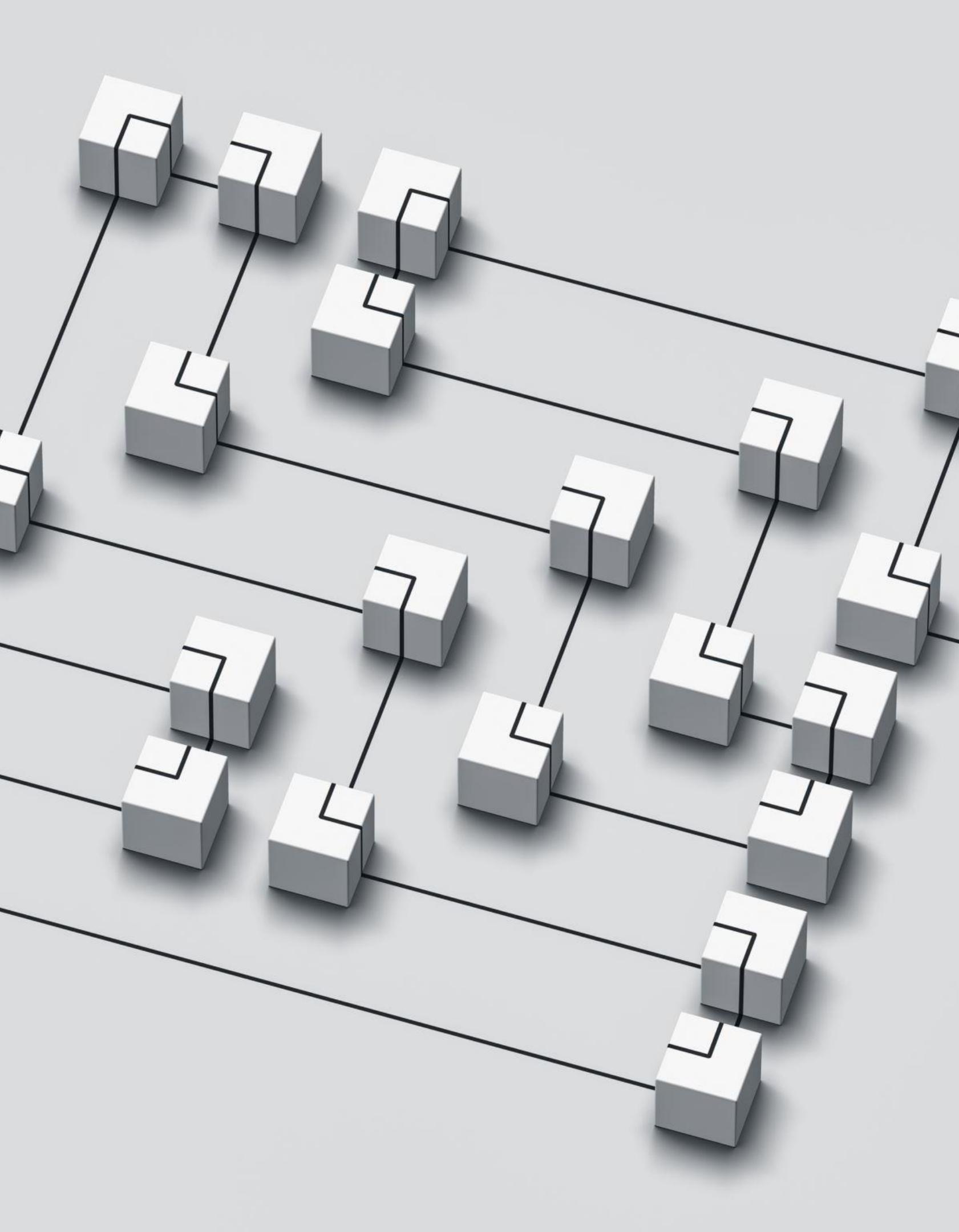


5. ADVANCED EXPLORES AND LOOKML

LookML Refresher and Best Practices

- **What is LookML?**: LookML is Looker's modeling language used to define data structures, logic, and relationships.
- **Best Practices**: Organize your models with clear naming conventions and modularize code using reusable views and dimensions.
- **Error Handling**: Use Looker's validation tools to catch errors in LookML before deploying models.



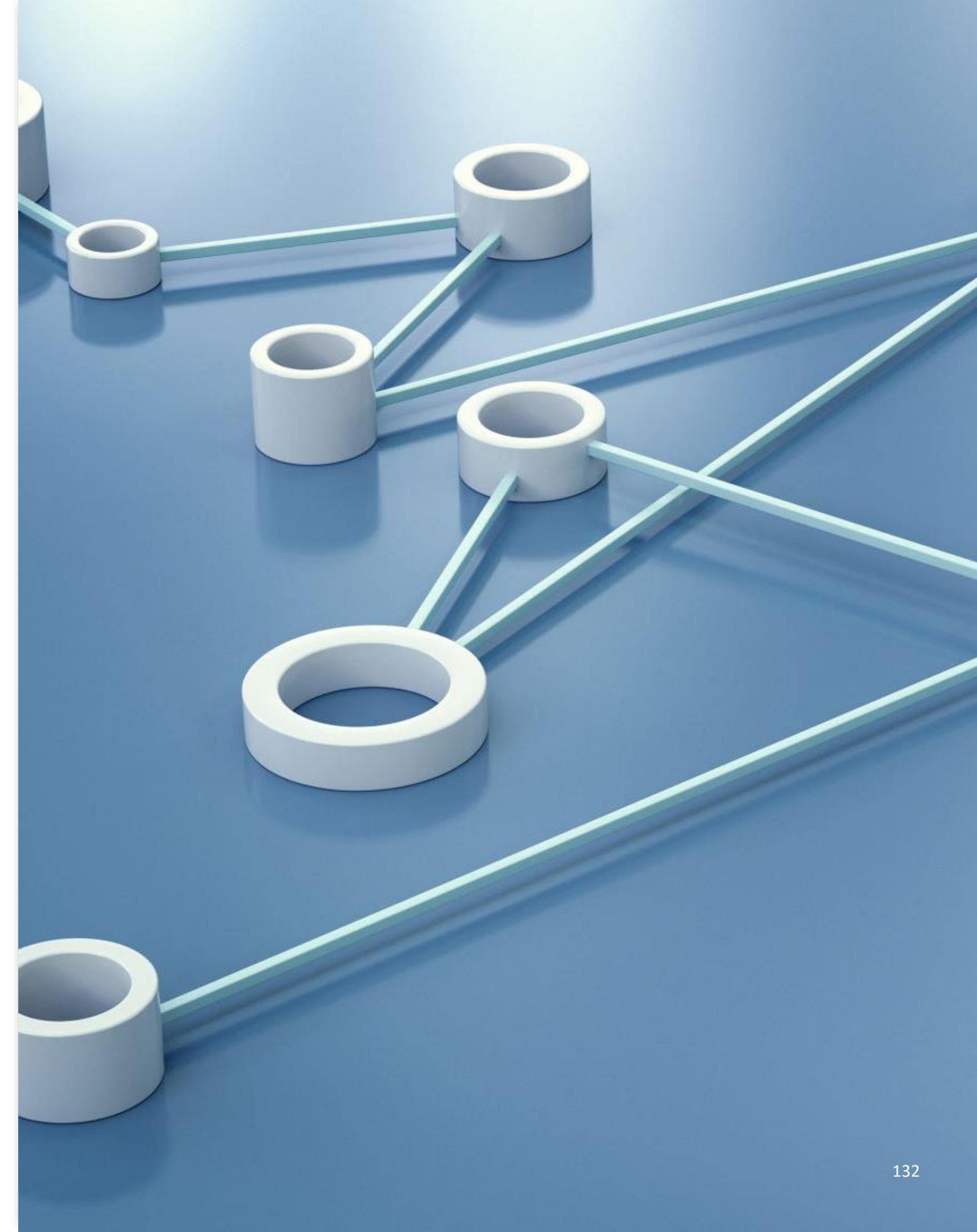


Creating Derived Tables and Data Transformations

- **What are Derived Tables?**: Derived tables are custom SQL queries within LookML that create virtual tables for more complex analysis.
- **Best Use Cases**: Use derived tables for pre-aggregating large datasets or simplifying complex joins.
- **How to Create**: Defined in LookML using the `sql:` block, derived tables are easy to customize.

Managing Access Controls and Data Permissions

- **Row-Level Permissions:** Limit access to specific data rows based on user roles.
- **Field-Level Permissions:** Control which fields or measures users can see in Explorers.
- **Best Practices:** Always adhere to the principle of least privilege, granting users only the access they need.



6. ORGANIZING AND SHARING CONTENT WITH FOLDERS AND BOARDS



Introduction to Folders and Boards in Looker

What are Folders?: Folders are used to organize reports, dashboards, and Looks in Looker.

What are Boards?: Boards allow you to curate and group relevant content for easy discovery.

Why Use Them?: Efficient organization improves collaboration and helps users quickly access relevant content.



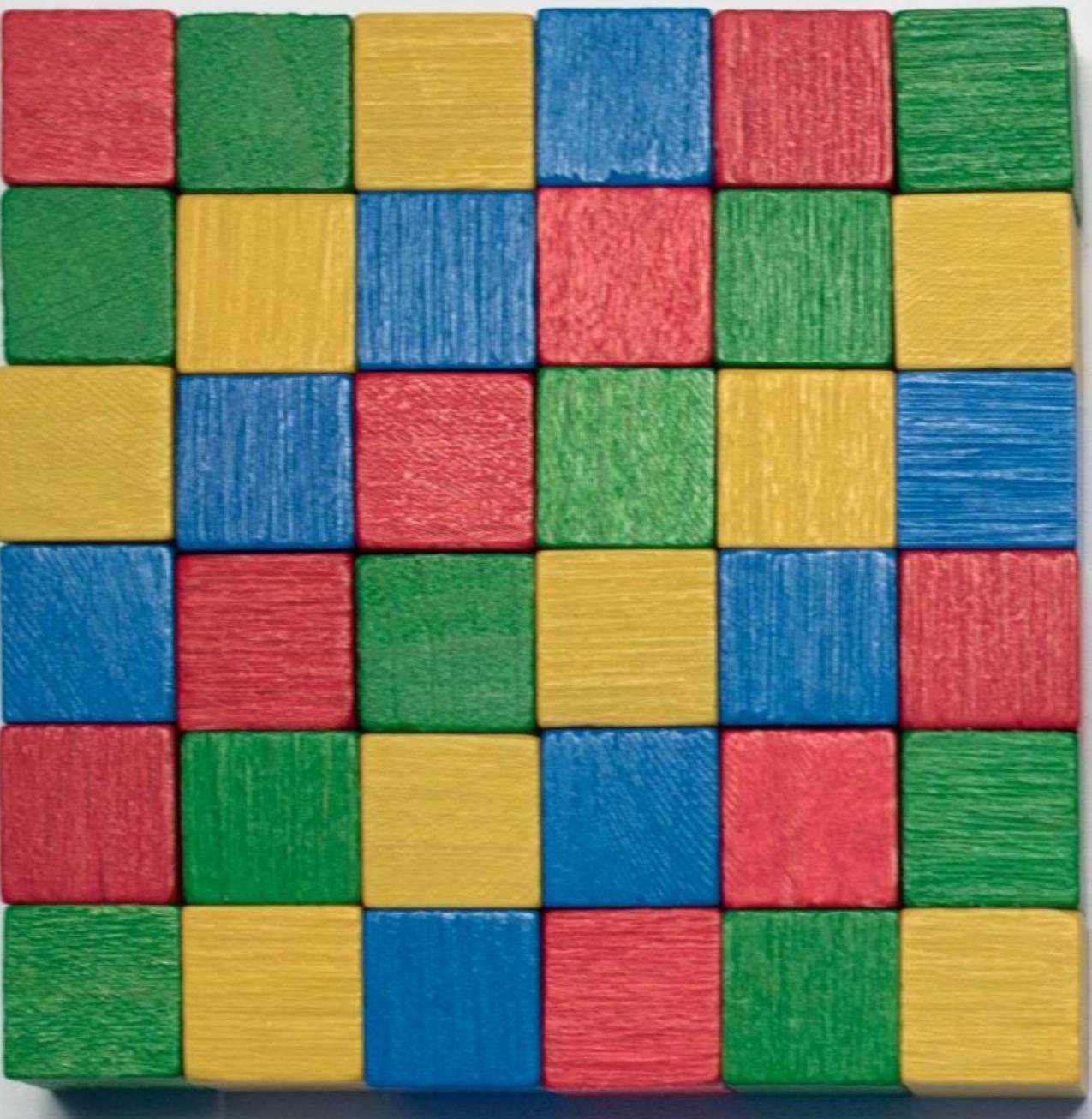
Creating and Managing Folders for Organizing Content

- **Creating Folders:** Users can create nested folders to organize content hierarchically.
- **Managing Content:** Drag and drop content into appropriate folders for better organization.
- **Renaming and Deleting:** Rename, move, or delete folders to maintain a clean environment.



Setting Up Boards for Easy Content Discovery

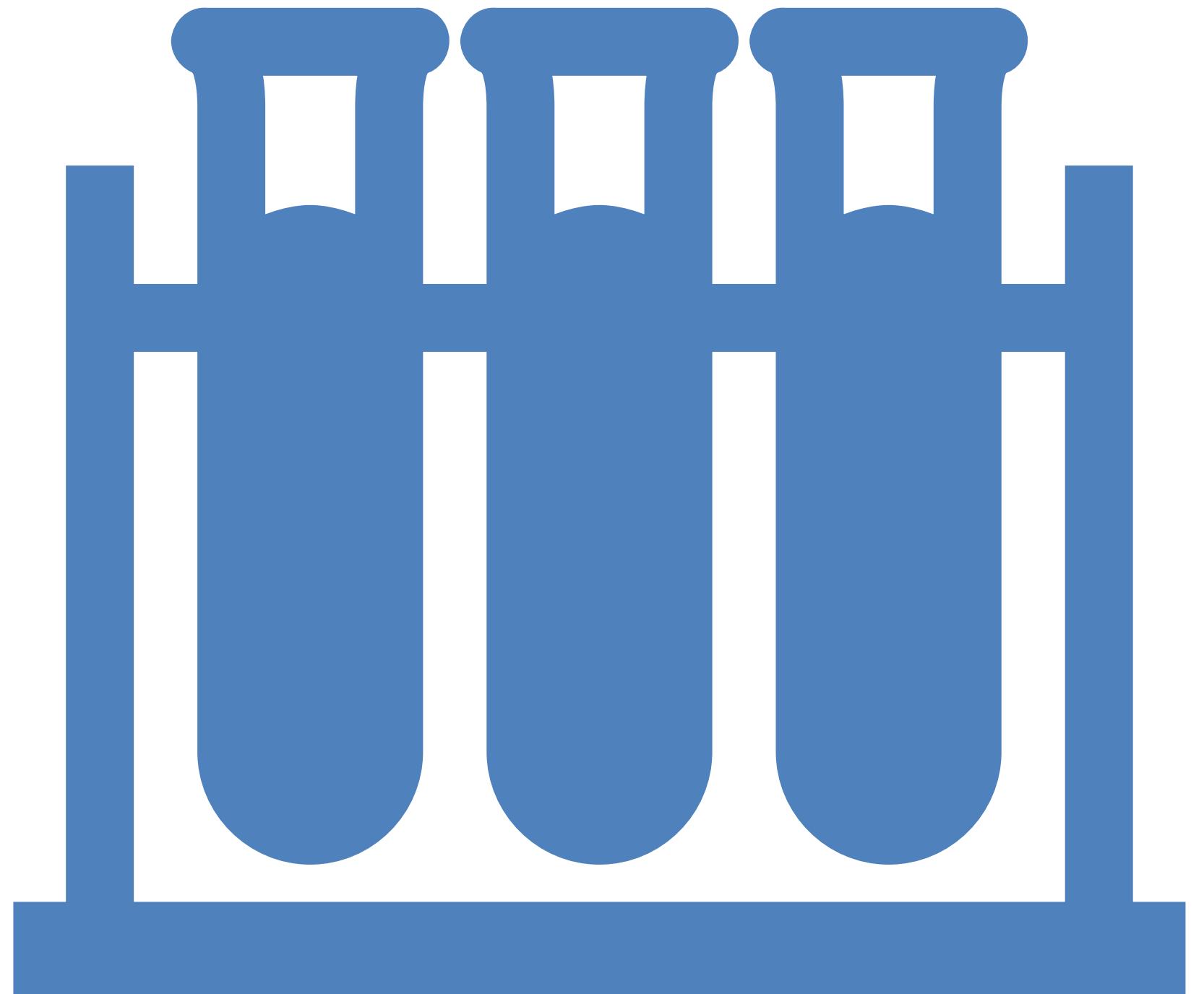
- **What are Boards Used For?**: Boards group relevant content for specific teams or purposes.
- **Adding Content to Boards**: Drag and drop Looks and dashboards into boards.
- **Personalized Layout**: Arrange content in a logical order for easy discovery.



Sharing Folders and Boards with Different User Roles and Permissions

- **User Roles and Permissions:** Control who can view, edit, or manage content in folders and boards.
- **Assigning Access:** Share folders and boards with specific user roles or groups.
- **Best Practices:** Apply the principle of least privilege to limit access to necessary content.





Lab 16: Download and Organize Data

138

7. Dashboards Design and Sharing



Dashboard 2

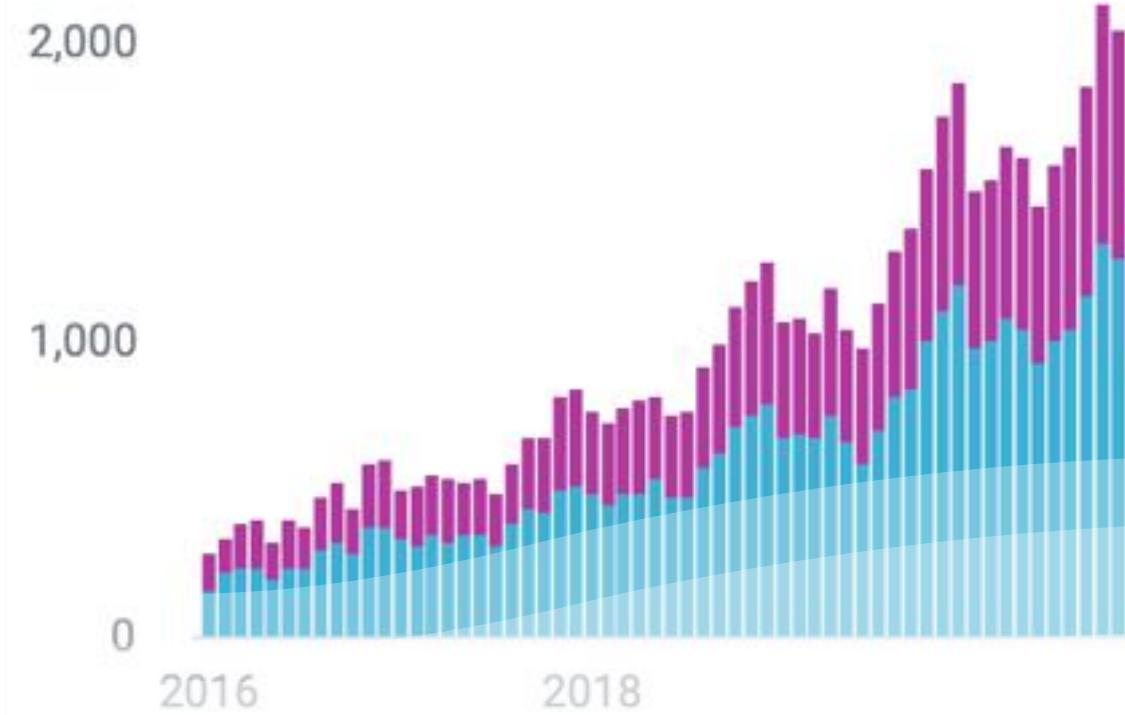
140

Organic X

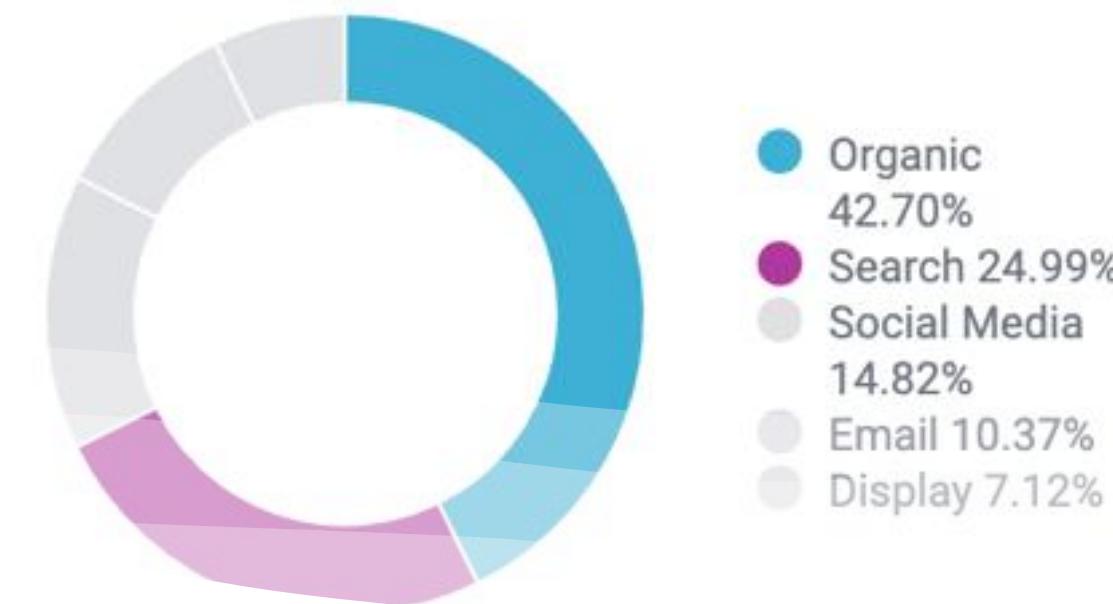
Search X

California X

Users Acquired over Time



Users by Acquisition Source

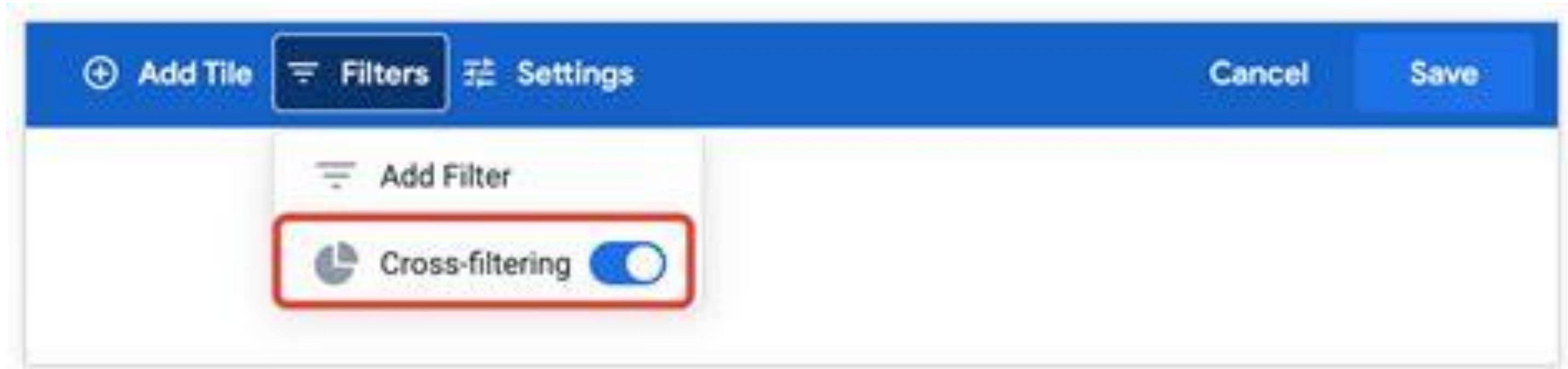


State
California
Count
3,929

Users by State

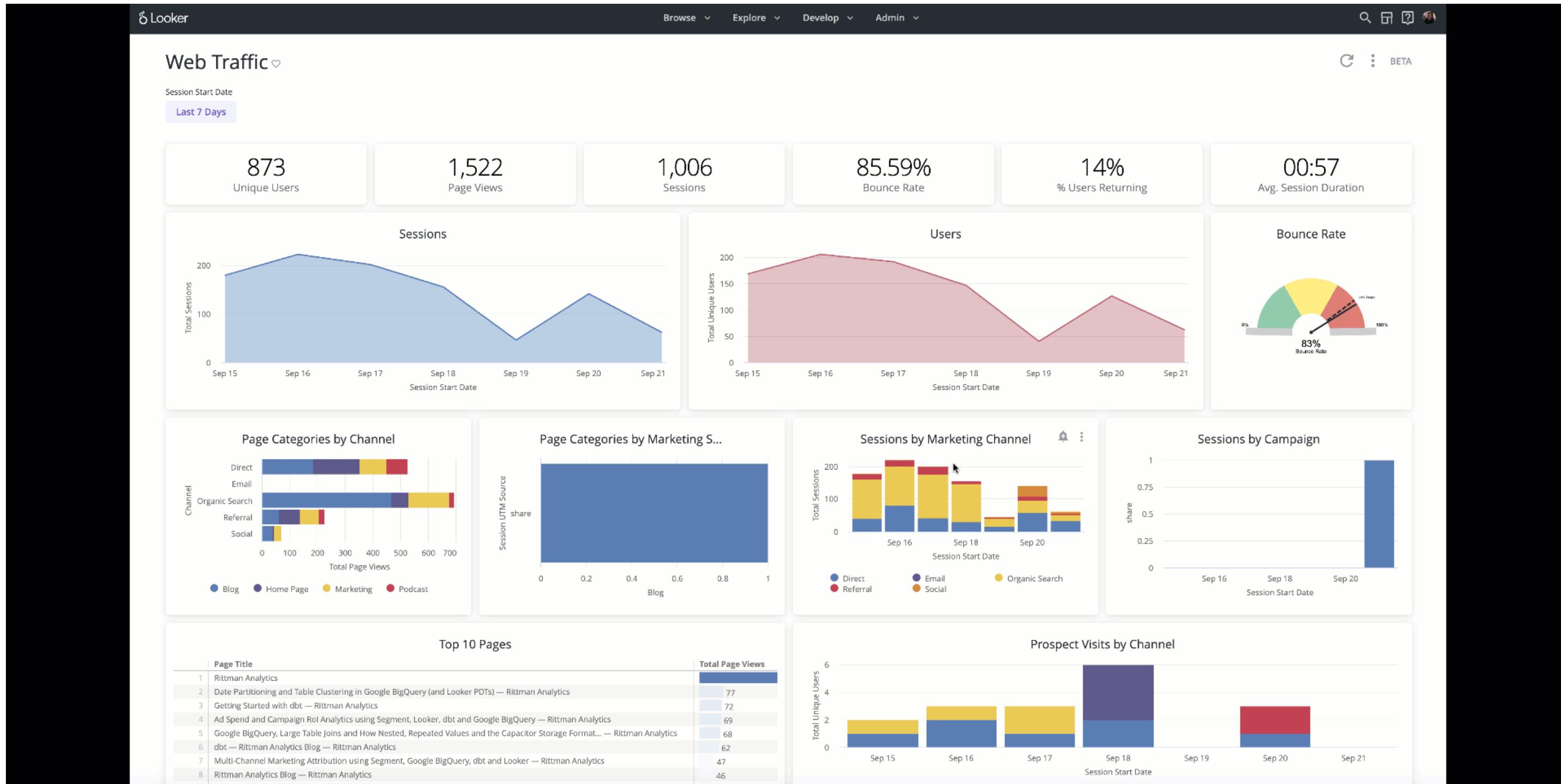


Dashboard Filters



Dashboard Cross Filtering and Settings

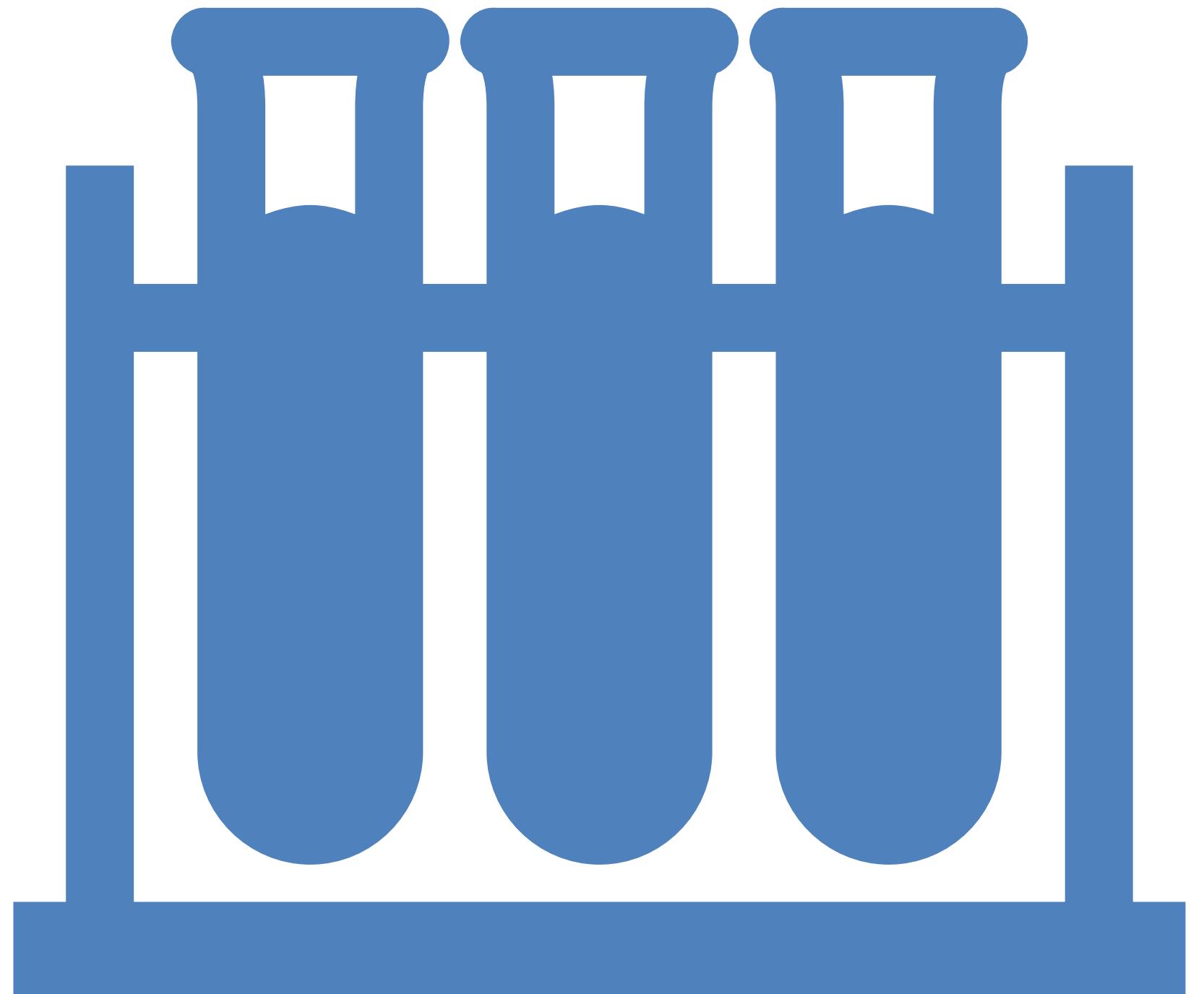
142



Dashboard Options

A photograph of a colorful board game scene. In the foreground, there's a yellow pawn on the left, a wooden pawn in the center, a red six-sided die showing three faces on the right, and a green plastic cup at the bottom left. The background is a green board with various colored circles (black, white, yellow, orange, red, purple) and some small ladders or paths. A white rectangular box with a thin black border is positioned in the upper-left area of the image, containing the word "Tricks".

Tricks

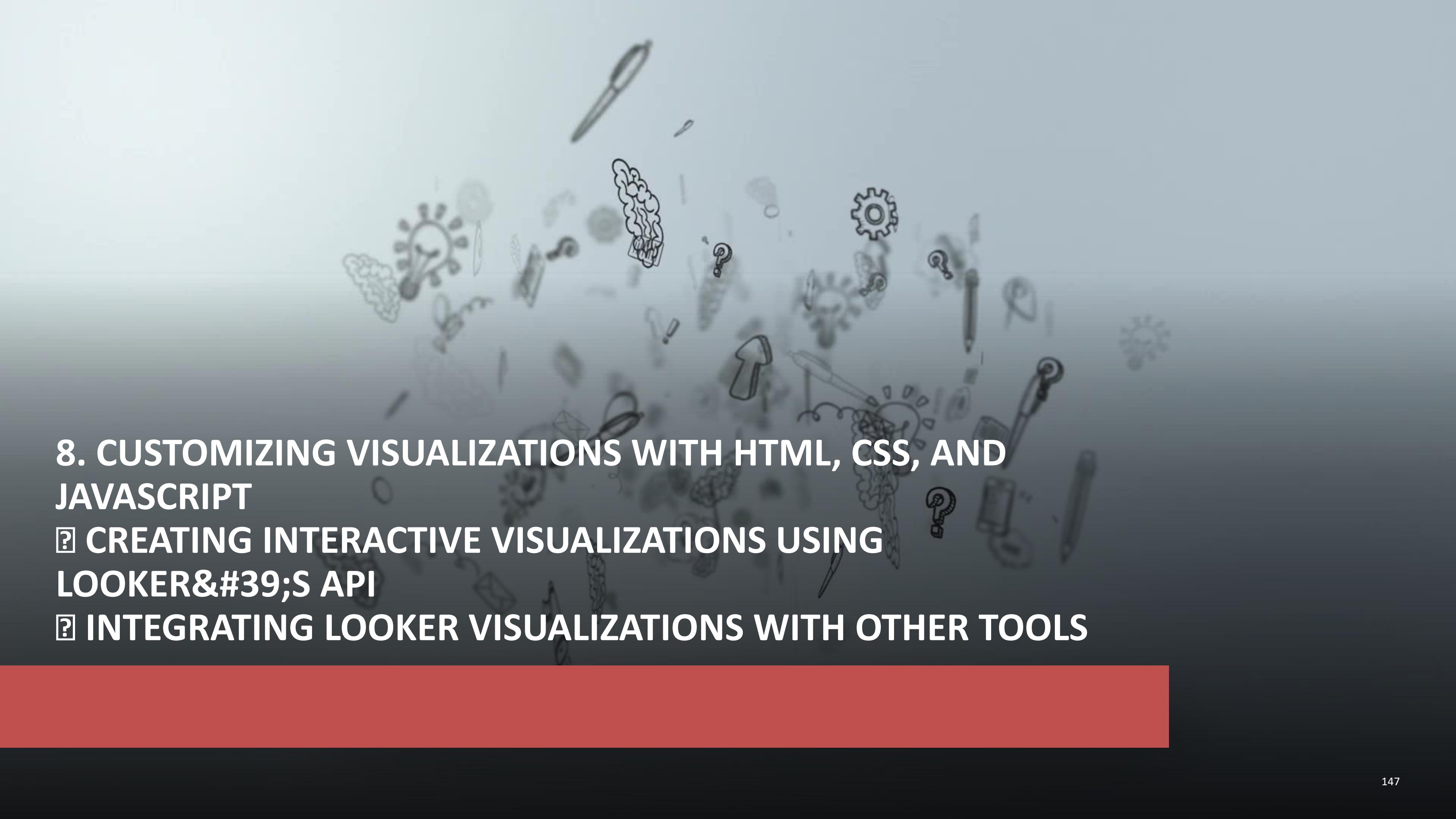


Lab 17: Dashboards

145



Tricks 2



8. CUSTOMIZING VISUALIZATIONS WITH HTML, CSS, AND JAVASCRIPT

- ❑ CREATING INTERACTIVE VISUALIZATIONS USING LOOKER'S API
- ❑ INTEGRATING LOOKER VISUALIZATIONS WITH OTHER TOOLS

Customizing Visualizations with HTML, CSS, and JavaScript

- **Why Customize?**: Looker allows customization for more flexible and engaging visualizations.
- **Using HTML and CSS**: Add custom styling to elements such as text, colors, and layout.
- **JavaScript for Interactivity**: Use JavaScript to add interactive features like tooltips or dynamic elements.

Creating Interactive Visualizations Using Looker's API

Looker API Overview: The API allows you to embed and extend Looker visualizations.

Interactivity with Filters: Use Looker's API to create visualizations with real-time filters and user controls.

Custom Data Pipelines: Fetch and manipulate data from Looker in real-time for dynamic visualizations.

Integrating Looker Visualizations with Other Tools

01

Embedding Looker in Web Apps: Integrate Looker visualizations into websites or web apps using iframes or APIs.

02

Connecting with Business Tools: Embed Looker dashboards within tools like Salesforce or Slack for seamless data access.

03

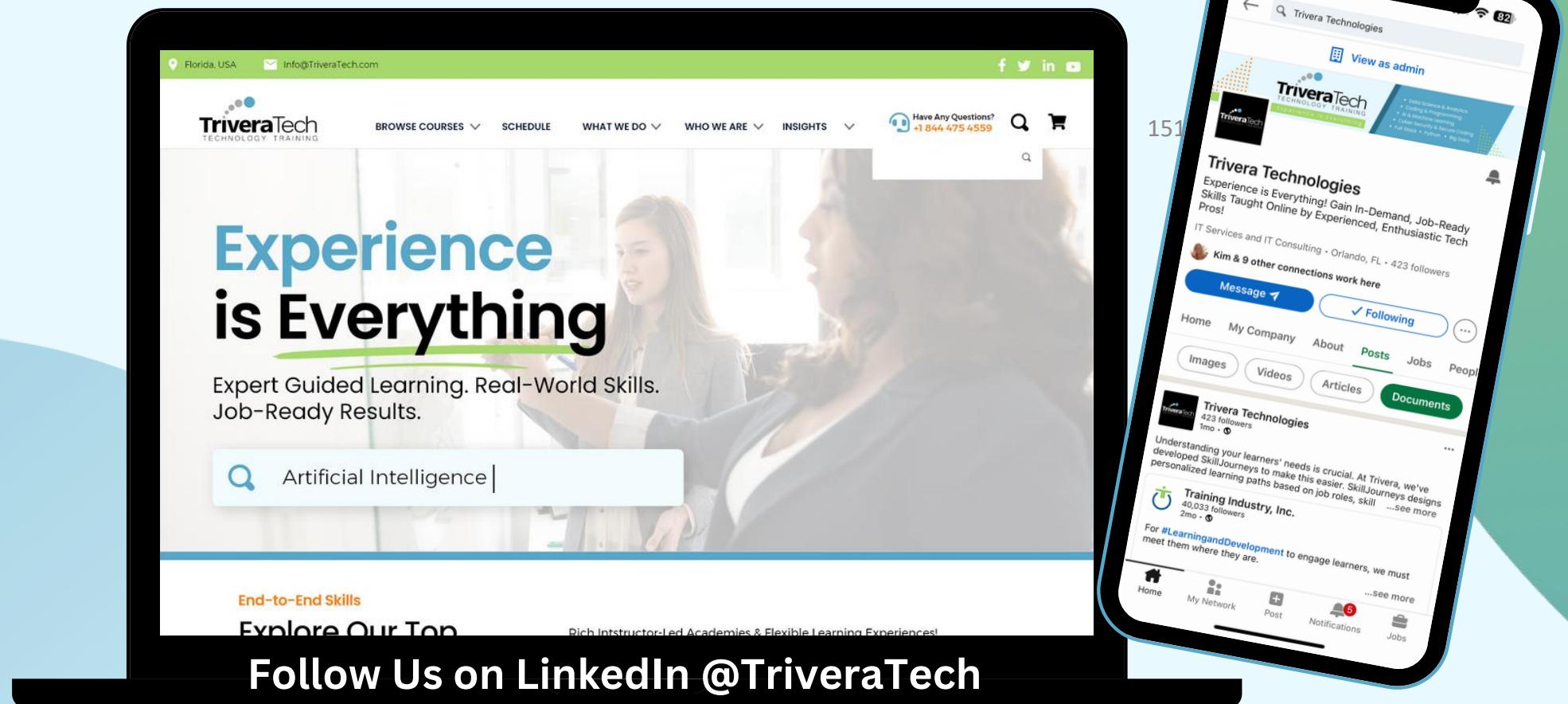
Automating Reports and Alerts: Use integrations to send automated reports or trigger alerts based on data thresholds.

Any Questions? Thanks for joining us!

We appreciate the time you spent with us today.

To Continue Your AI Skills Journey:

- Review the companion tip guide: **AI for All: Ensuring Safe Use in Your Workplace**
- Explore our 50+ courses in end-to-end AI skills at www.TriveraTech.com or contact Info@triveratech.com
- For free courses, offers and resources: Follow us on LinkedIn, YouTube and other socials [@triveratech](#)



We Offer Expert-Guided, Instructor-Led Courses and SkillJourneys in:

- AI for Everyday Business Users
- AI for Leadership, Stakeholders & Architects
- Prompt Engineering
- AI & Machine Learning Development
- Deep Learning, LLMS & Advanced Skills
- Generative AI
- MLOps, AIOps & Machine Learning Engineering
- Data Literacy, Data Science & Data Engineering
- PowerBI, Tableau, Oracle, Microsoft, Looker
- Cloud Foundation to Engineering
- Azure / AWS / GCP
- Python
- Full Stack Web Development & Mobile
- Coding / Intro to Advanced: Java, .Net, C++
- Secure Coding & Cybersecurity
- And Much More
- Onsite / Online / Blended / Self-Paced
- Training for Individuals, Teams or Enterprise Solutions
- Boot Camps / SkillJourneys / Assessments / Coaching / End to End Skills Programs