

Data Analysis Training

Alameda County HMIS
hmissupport@acgov.org

To Follow Along...

- Log in to the Clarity live site
---OR---
- Via the Clarity training site
 - USERNAMES: tr60 – tr69



Agenda

1. Data Analysis Principals
2. Navigating the Clarity Data Analysis Interface
 - Clarity Data Models
 - Creating and editing reports and dashboards
3. Building Reports “Looks” with HMIS data
 - Examples
4. Advanced Reporting
 - pivot tables, charts, graphs, merging/joining, custom measures & calculations
5. Workshop: Questions and Examples



Resources

hmissupport@acgov.org (our support email)

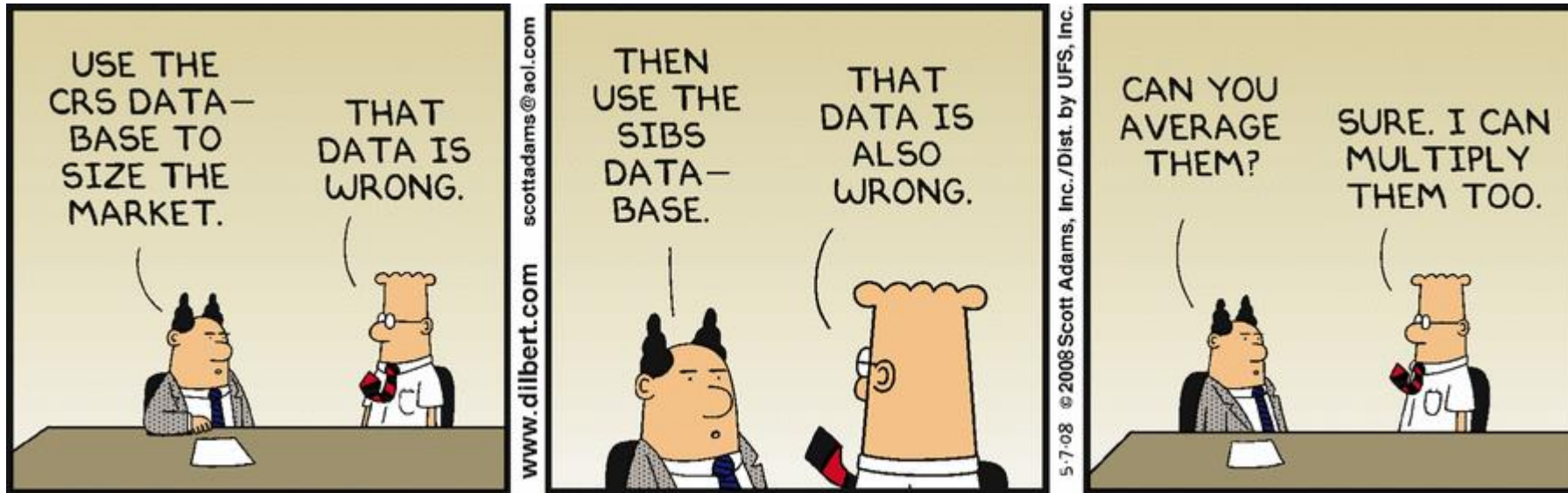
acgov.org/cda/hcd/hmis/ (our website)

hudexchange.info/programs/hmis/ (HUD HMIS documentation)

get.clarityhs.help/hc/en-us (Clarity help docs)

docs.looker.com/exploring-data/creating-looker-expressions/looker-functions-and-operators (Looker help docs)

What is Data Analysis

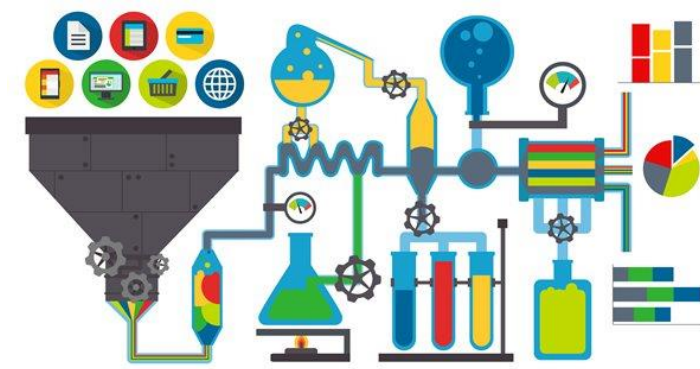


- “is a process of inspecting, cleansing, transforming and modeling data with the goal of discovering useful information, informing conclusion and supporting decision-making.” -Wikipedia

What is Data Visualization?



Data Analysis Process



Step 1: Ask a Question

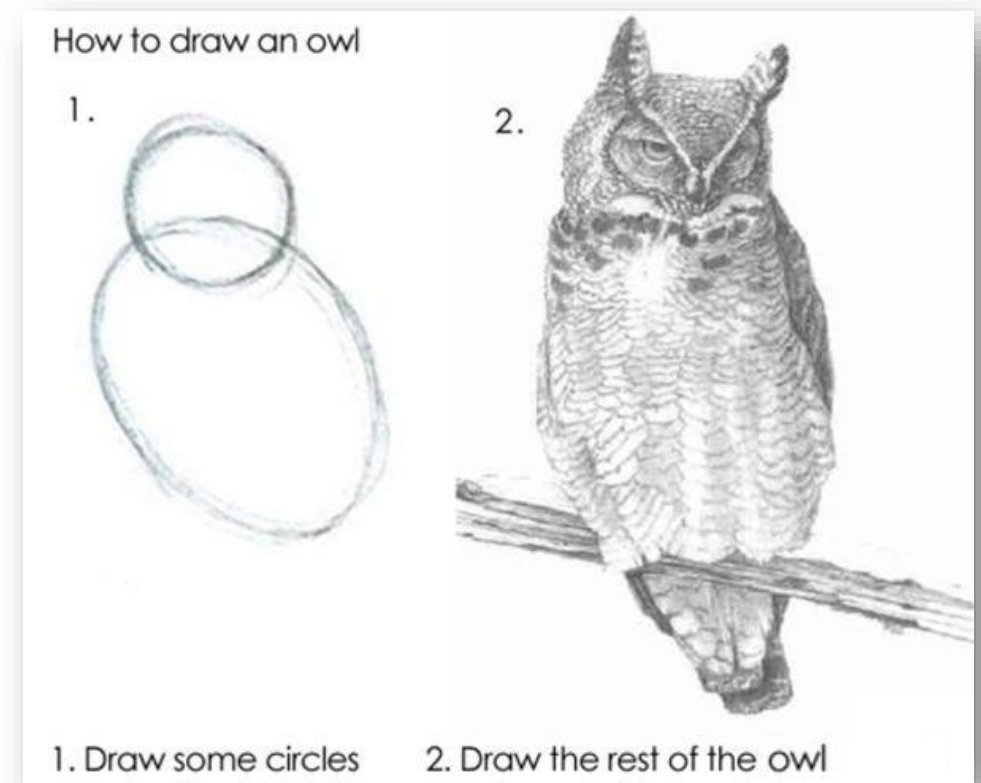
Step 2: Break the question down into parts

Step 3: Model one part at a time

Step 4: Analyze the Results

Step 5: Communicate the results

If something doesn't work, repeat steps 2-4



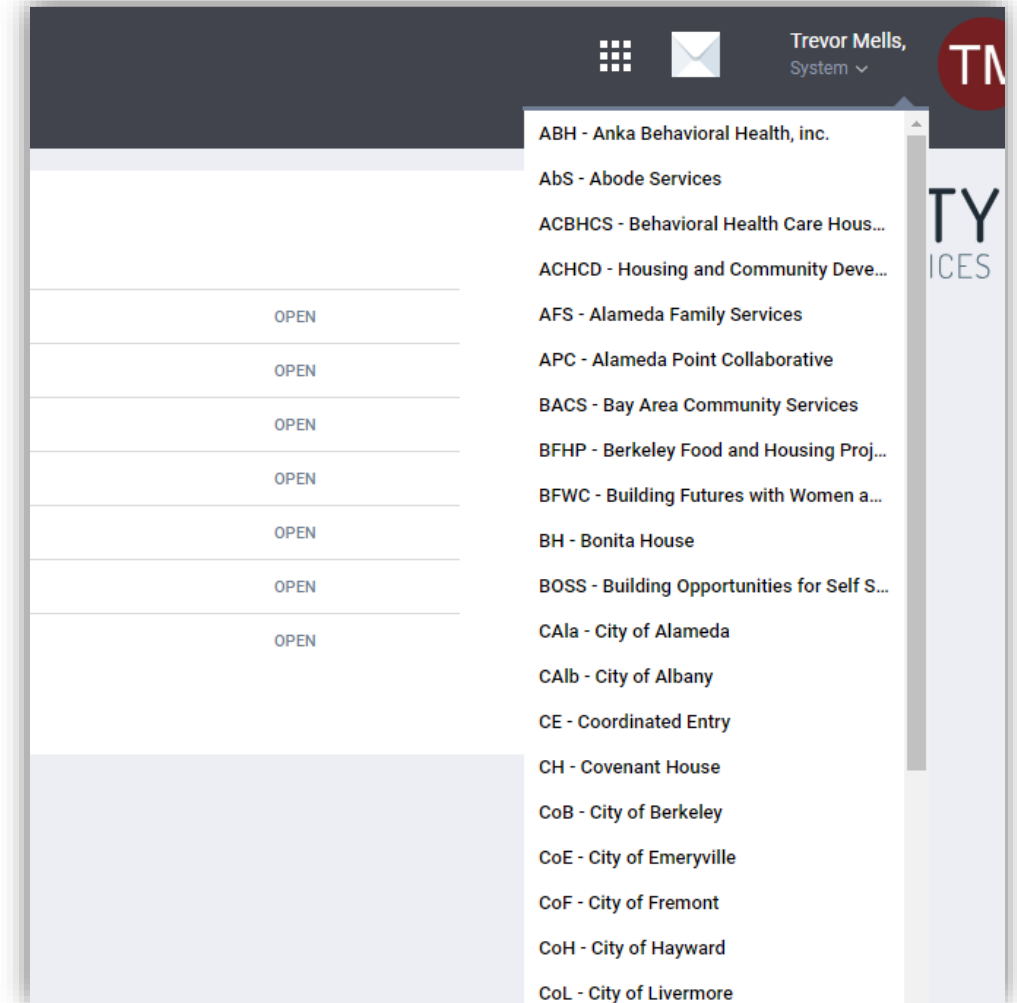
What is Looker??

- Looker connects to Clarity to provide data reporting and visualization tools
- Allows for real time results of your data in tables, charts, and graphs




Data Analysis Permissions

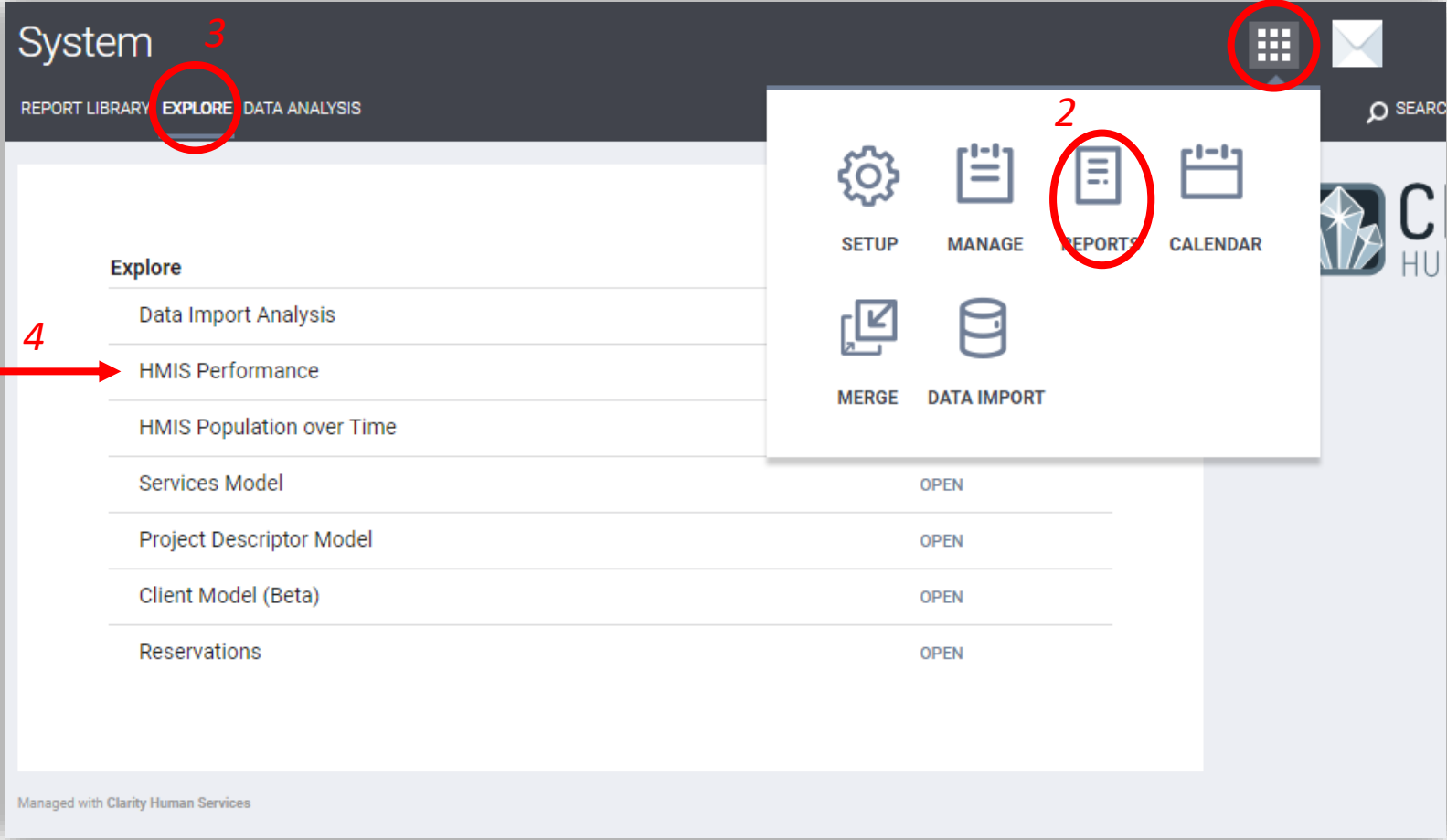
- Switching agencies will give access to agency specific reports
 - For example the BNL Matching Report in only in the Coordinated Entry Agency
- “Switching” agencies will not give you additional data access in looker.



Starting a New Report

- GO TO:

1. LaunchPad 
2. Reports
3. Explore
4. Click "OPEN" next to the Data Model
 - *(usually HMIS Performance)*




The screenshot shows the 'System' interface with the following elements:

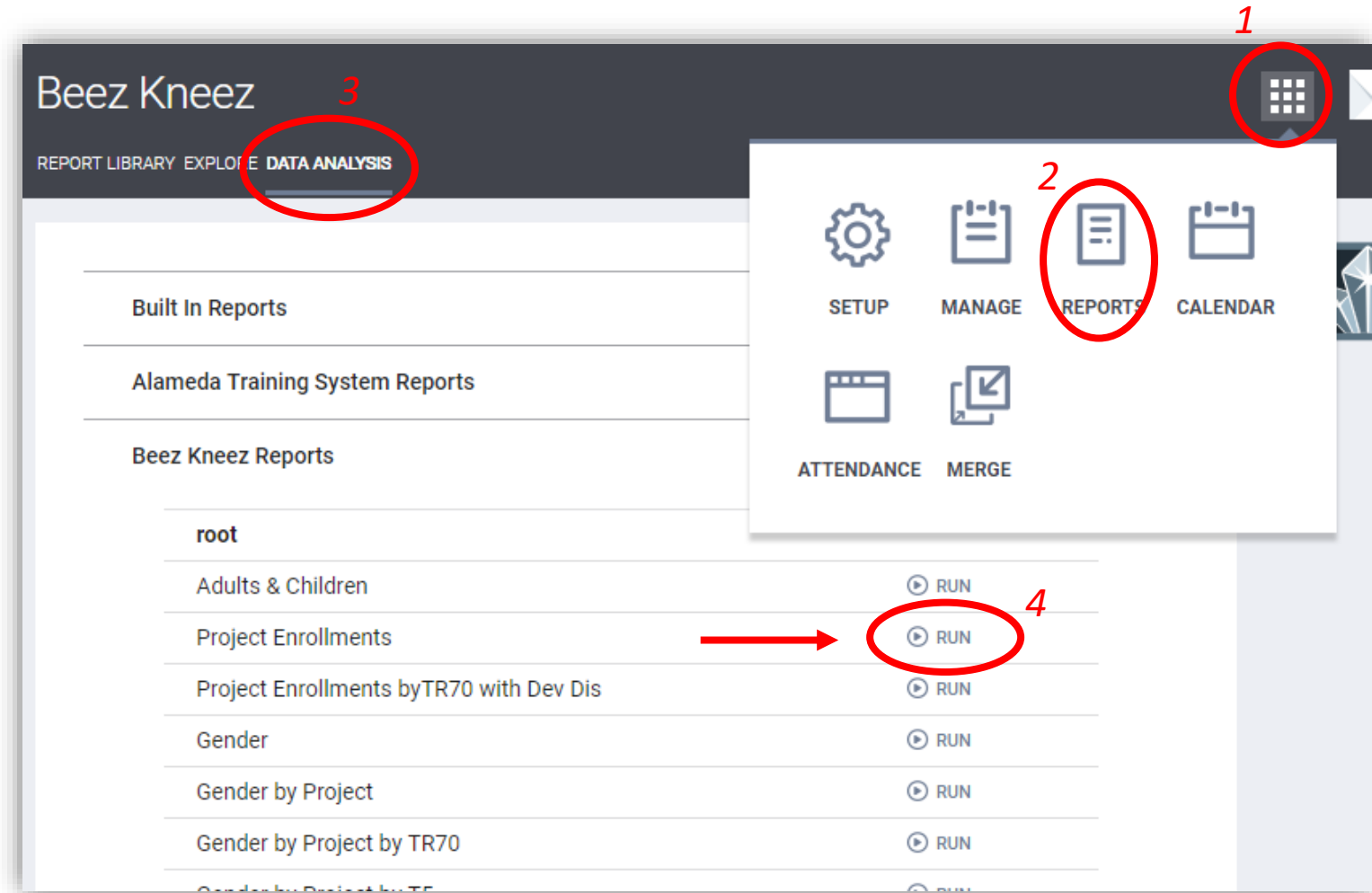
- Top navigation bar: 'System' (with a red circle and '3'), 'REPORT LIBRARY', 'EXPLORE' (with a red circle), and 'DATA ANALYSIS'.
- Dropdown menu (with a red circle and '2') containing: 'SETUP' (gear icon), 'MANAGE' (clipboard icon), 'REPORTS' (document icon with red circle and '2'), and 'CALENDAR' (calendar icon). Below these are 'MERGE' (document with arrow icon) and 'DATA IMPORT' (database icon).
- Main content area: 'Explore' section with a list of items: 'Data Import Analysis', 'HMIS Performance' (with a red arrow and '4'), 'HMIS Population over Time', 'Services Model', 'Project Descriptor Model', 'Client Model (Beta)', and 'Reservations'. Each item has an 'OPEN' button to its right.
- Bottom left: 'Managed with Clarity Human Services'.
- Top right: 'LaunchPad' icon (3x3 grid, circled in red with '1') and a search bar.

Run or Edit an Existing Report

- GO TO:

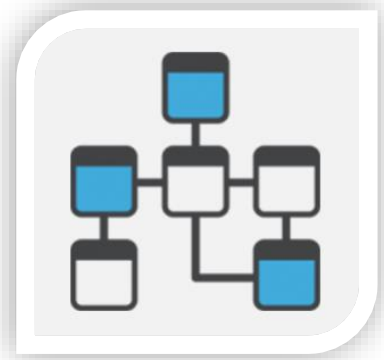
1. LaunchPad 
2. Reports
3. Data Analysis
4. Expand the report folder
5. Click “RUN” next to the report

- Most reports are agency specific. You may need to “switch” agencies to see it



The screenshot shows the Beez Kneez software interface. The top navigation bar includes 'REPORT LIBRARY', 'EXPLORE', and 'DATA ANALYSIS'. A dropdown menu is open, showing options: 'SETUP', 'MANAGE', 'REPORTS', 'CALENDAR', 'ATTENDANCE', and 'MERGE'. The 'DATA ANALYSIS' menu item is circled in red with a '3' above it. The 'REPORTS' icon in the dropdown is circled in red with a '2' above it. The 'RUN' button next to the 'Project Enrollments' report is circled in red with a '4' above it. A red arrow points from the 'Project Enrollments' report to its 'RUN' button. A 'LaunchPad' icon (a 3x3 grid) is circled in red with a '1' above it in the top right corner of the interface.

Choosing a Data Model In Clarity



- What is a Data Model?
 - A pre-made set of raw data that can be used to conduct further analysis
- Why is there more than one model?
 - Not all data relate meaningfully
 - Can be merged

DATA MOELS

A screenshot of a web application interface. The top navigation bar is dark gray with the word "System" on the left, a grid icon, an envelope icon, and a search icon on the right. Below the navigation bar, there are three tabs: "REPORT LIBRARY", "EXPLORE", and "DATA ANALYSIS". The "EXPLORE" tab is active. The main content area is white and contains a section titled "Explore" with a list of data models. A red bracket on the left side of the list groups the items under the label "DATA MOELS".

Explore	
Data Import Analysis	OPEN
HMIS Performance	OPEN
HMIS Population over Time	OPEN
Services Model	OPEN
Project Descriptor Model	OPEN
Client Model (Beta)	OPEN
Reservations	OPEN

Data Models In Clarity



1. HMIS Performance

- most common, all rounder
- For reporting based on Program Entries and Exits. Has default filter.
- Data must be connected to an enrollment in some way

2. Coordinated Entry Model

- Report on Assessments independent of Project Entries.
- Used for BNL and CES features.

3. Services Model

- Makes it possible to access services independent of project entries
- Not applicable to Alameda County

4. Client Model

- Report on client data independent of project entries
- Very few restrictions, reports on deleted data

5. HMIS Population over Time

- Time series analysis (goes back ~2 yrs)

6. Project Descriptor Model

- Report on project, agency, or staff data. independent of clients
- No client data

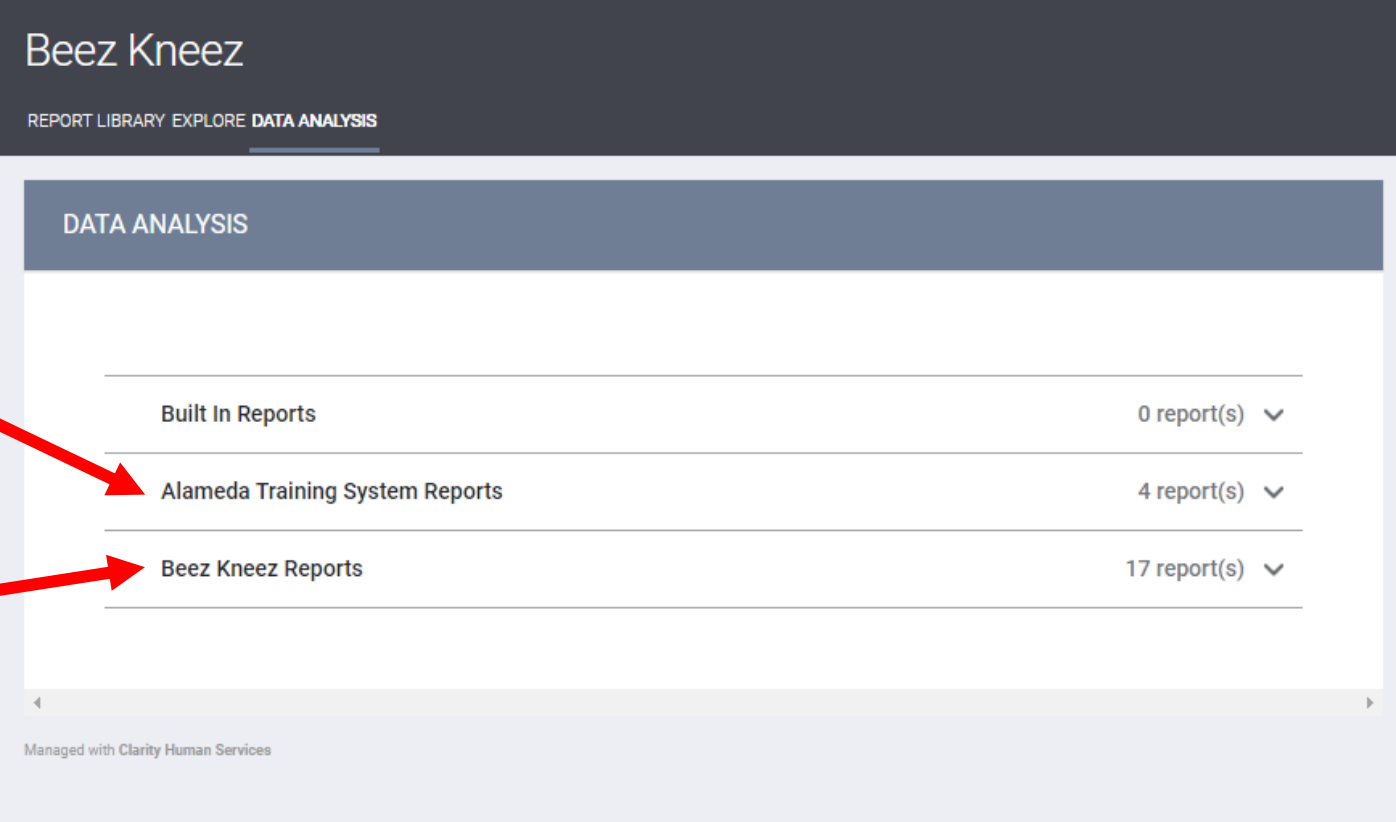
7. Reservations Model

8. Data Quality Model

- Based on enrollments, drill down on DQ errors

Report Access

- “System Reports” are available to all agencies
- “Agency Reports” are only available to your agency




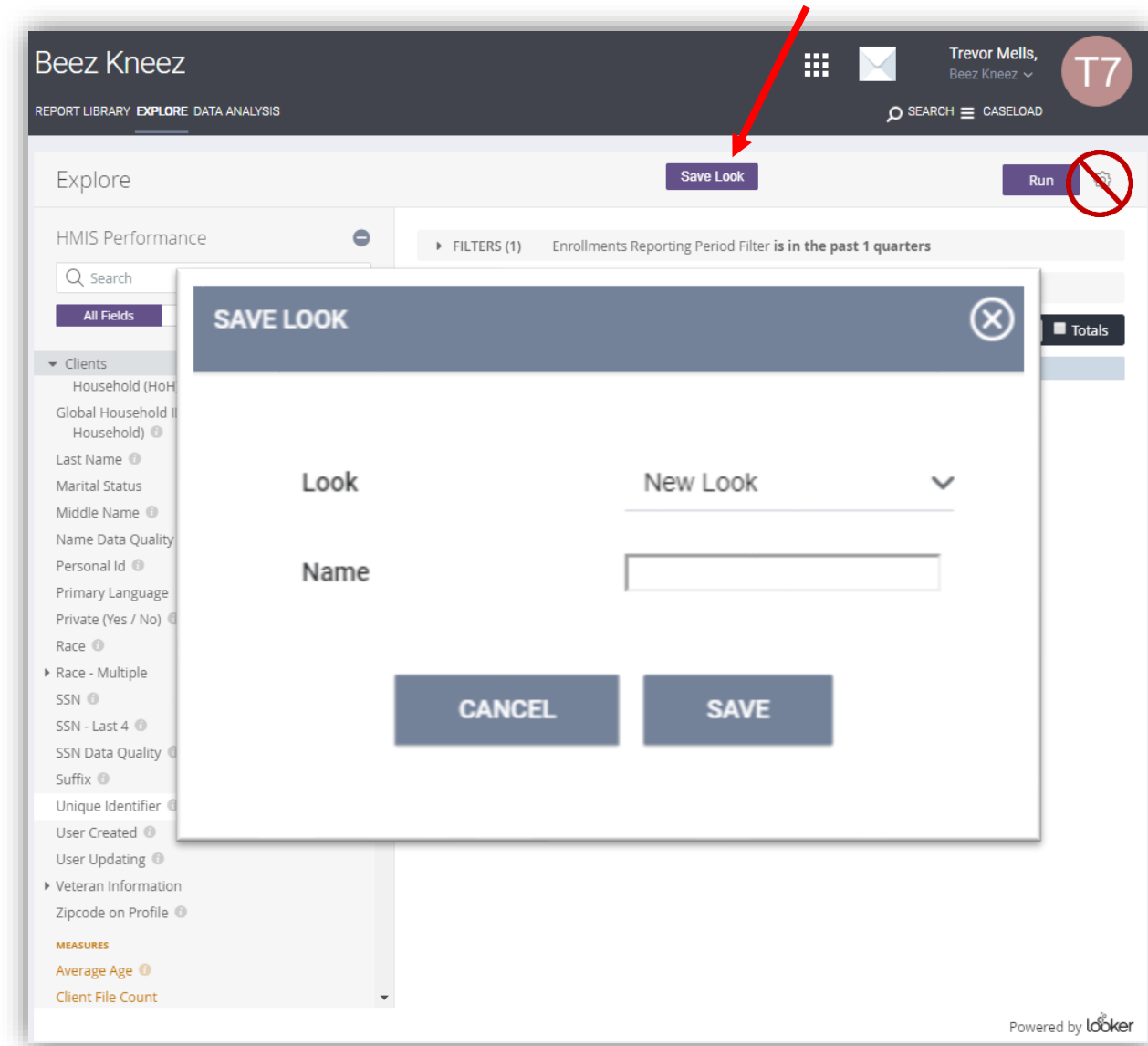
The screenshot displays the Beez Kneez Report Library interface. At the top, the logo "Beez Kneez" is visible, followed by navigation links: "REPORT LIBRARY", "EXPLORE", and "DATA ANALYSIS". Below this, a section titled "DATA ANALYSIS" contains a table of report categories. Two red arrows point from the text in the adjacent list to the "Alameda Training System Reports" and "Beez Kneez Reports" rows in the table.

Report Category	Report Count
Built In Reports	0 report(s) ▼
Alameda Training System Reports	4 report(s) ▼
Beez Kneez Reports	17 report(s) ▼

Managed with Clarity Human Services

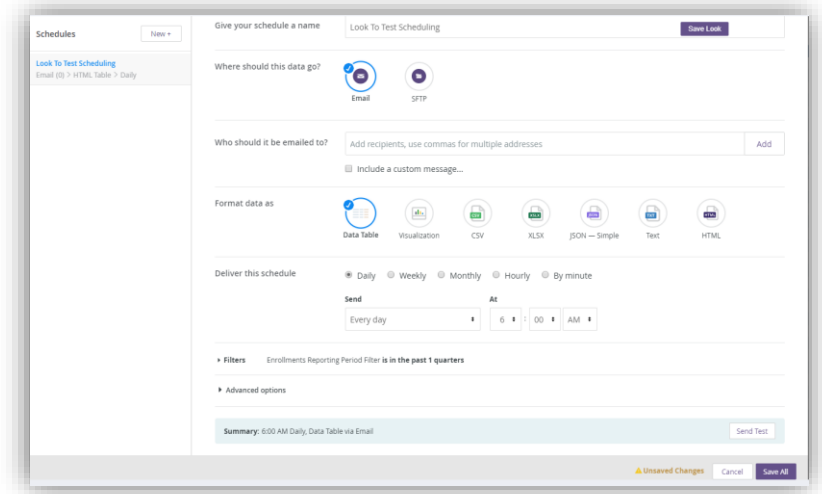
Saving A Report


- Use the “Save Look” button near the top of the page
- Save as a New Look or overwrite an existing one
- DO NOT use the  gear icon to save a look
- Save early and often
- Reports will save to the agency you are currently using (upper right)



The screenshot displays the Beez Kneez interface. At the top, the user is identified as Trevor Mells, Beez Kneez, with a profile icon labeled T7. The navigation bar includes 'REPORT LIBRARY', 'EXPLORE', and 'DATA ANALYSIS'. A search bar and 'CASELOAD' link are also present. The main content area is titled 'Explore' and features a 'Save Look' button (indicated by a red arrow) and a 'Run' button (circled in red with a prohibition sign). Below the 'Explore' header, there is a section for 'HMIS Performance' with a filter applied: 'Enrollments Reporting Period Filter is in the past 1 quarters'. A 'SAVE LOOK' dialog box is open in the foreground, showing a dropdown menu set to 'New Look' and a text input field for 'Name'. The dialog box has 'CANCEL' and 'SAVE' buttons at the bottom. The background interface shows a list of fields under 'Clients' and 'MEASURES'.

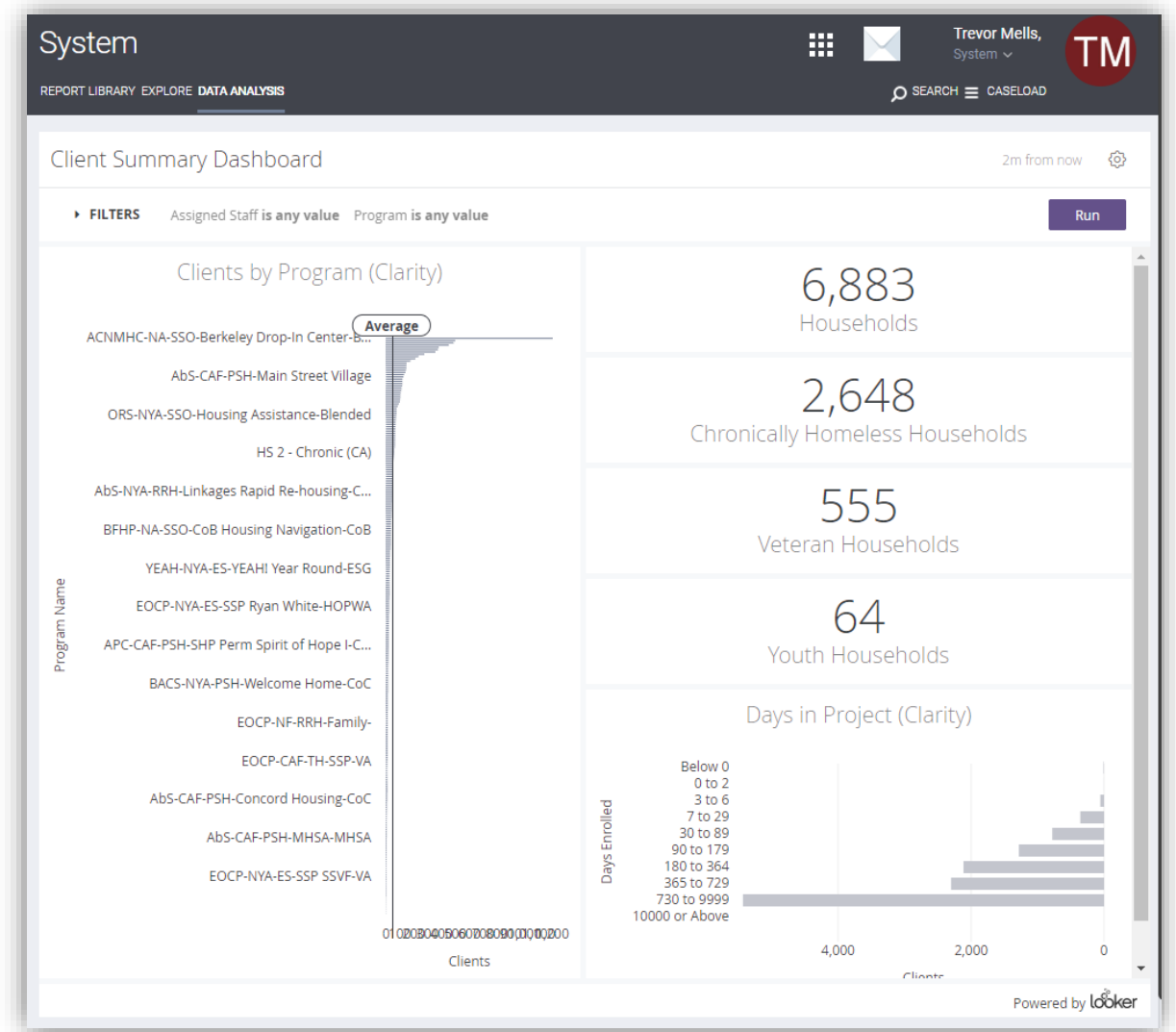
How To Schedule a Look



1. Use the Gear Icon  to select “Save & Schedule”
 2. Enter a new Title or overwrite a previously scheduled report
 3. Click “Save and View Look”
 4. Follow the instructions on the next page to Schedule the report
- **Saving is separate from scheduling. This DOES NOT SAVE the report**
 - Only use this workflow to Schedule a report
 - Use the instructions on the previous slide to Save a report to your Agencies folder


Dashboards in Looker

- Dashboards allow you to display multiple Reports (or “Looks”) on the same page.
- They are useful for grouping related reports together into a single page



Creating your own Dashboard



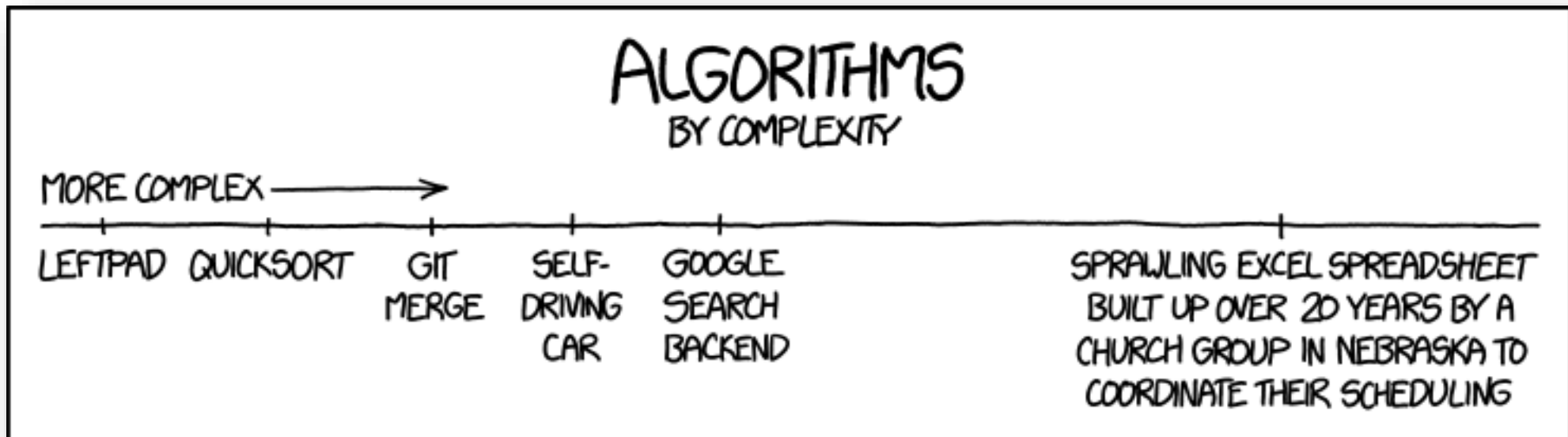
- To start a new dashboard:
 1. Create and save a new Look
 2. Click the Gear icon  then “Save to Dashboard”
 3. Navigate to: Shared > Alameda > Agencies > [your agency ID]
 4. Click “New Dashboard” and enter a name
 5. Click “Save to Dashboard”
- Dashboards should be saved under your agency ID (#1-60)
 - See next page for list of ID’s
- **Dashboards must be enabled by a System Administrator**
- To edit or view an existing dashboard follow the same steps as editing or viewing an existing report

List of Agency (ID Numbers) In Alameda County

- ABH - Anka Behavioral Health, inc. (49)
- AbS - Abode Services (2)
- ACBHCS - Behavioral Health Care Housing Services (46)
- ACHCD - Housing and Community Development (27)
- AFS - Alameda Family Services (3)
- APC - Alameda Point Collaborative (4)
- BACS - Bay Area Community Services (5)
- BFHP - Berkeley Food and Housing Project (6)
- BFWC - Building Futures with Women and Children (8)
- BH - Bonita House (7)
- BOSS - Building Opportunities for Self Sufficiency (9)
- CAIa - City of Alameda (10)
- CAIb - City of Albany (11)
- CE - Coordinated Entry (52)
- CH - Covenant House (42)
- CoB - City of Berkeley (51)
- CoE - City of Emeryville (12)
- CoF - City of Fremont (19)
- CoH - City of Hayward (21)
- CoL - City of Livermore (22)
- CoN - City of Newark (26)
- CoO - City of Oakland (29)
- CoP - City of Piedmont (37)
- CoSL - City of San Leandro (40)
- EBCLC - East Bay Community Law Center (43)
- EBCRP - East Bay Community Recovery Project (44)
- EIR - Eden Information and Referral (23)
- EOCP - East Oakland Community Project (18)
- EOH - EveryOne Home (54)
- FESCO - Family Emergency Shelter Coalition (25)
- FF - Fred Finch Youth Center (30)
- FPFY - First Place for Youth (28)
- GI - Goodwill Industries of the Greater East Bay (50)
- HAC - Homeless Action Center (31)
- HPRP - Homelessness Prevention and RRH Program (53)
- LMC - Lifelong Medical Care (32)
- NMCH – AC Network of Mental Health Clients (45)
- OD - Operation Dignity (33)
- ORS - Options Recovery Services (34)
- RPI - Rubicon Programs, Inc. (47)
- SA - Salvation Army Oakland Garden Center (48)
- SAHA - Satellite Affordable Housing Associates (36)
- SC - Second Chance (13)
- SHP - South Hayward Parish (24)
- SMC - St. Mary's Center (16)
- StP - Swords to Plowshares (17)
- SVdP - St Vincent de Paul (15)
- System (1)
- UnC - Union City (20)
- WDDC - Women's Daytime Drop In Center (35)
- YAFF - Yvette A Flunder Foundation (41)
- YEAH - Youth, Engagement, Advocacy and Housing (39)

Looker Report Elements

1. Fields & Measures
2. Filters
3. Custom Calculations/Dimensions
4. Visualizations



Navigating The Looker Report Window

The screenshot displays the Looker interface for an 'Explore' named 'HMIS Performance'. The left sidebar shows a search bar and a list of dimensions, with 'Clients' selected. The main area shows a table with two columns: 'Clients Age Tier' and 'Clients Number of Clients'. A filter is applied: 'Enrollments Reporting Period Filter is in the past 1 quarters'. The table has 9 rows of data.

Explore Save Look 9 rows · 0.1s · 2m ago Run ⚙️

HMIS Performance ⊖

Search

All Fields Dimensions Measures

Custom Fields NEW

This Explore has no custom fields yet

- Agencies
- Bed and Unit Inventory
- Client Addresses
- Client Assessment Custom
- Client Assessments
- Client Contacts
- Client Notes
- Clients 2
- Coordinated Entry Event (BETA)
- Current Living Situation
- Enrollments

FILTER-ONLY FIELDS

Reporting Period Filter FILTER ⊗

DIMENSIONS

- Active in Project ?
- Assigned Staff ?
- Date Created Date ?
- Date Updated Date ?
- Days from Project Start to Move-In ?
- Days in Project ?

▶ FILTERS (1) Enrollments Reporting Period Filter is in the past 1 quarters

▶ VISUALIZATION

DATA RESULTS SQL Row Limit 500 Totals

Clients Age Tier	Clients Number of Clients
1 Below 0	0
2 0 to 17	98
3 18 to 24	3
4 25 to 34	38
5 35 to 44	40
6 45 to 54	32
7 55 to 64	19
8 65 or Above	7
9 Undefined	2

Powered by **looker**

Explore

HMIS Performance

Search

All Fields | Dimensions | Measures

Custom Fields NEW

This Explore has no custom fields yet

- Agencies
- Bed and Unit Inventory
- Client Addresses
- Client Assessment Custom
- Client Assessments
- Client Contacts
- Client Notes
- Clients 2
- Coordinated Entry Event (BETA)
- Current Living Situation
- Enrollments

FILTER-ONLY FIELDS

Reporting Period Filter FILTER

DIMENSIONS

- Active in Project
- Assigned Staff
- Date Created Date
- Date Updated Date
- Days from Project Start to Move-In
- Days in Project

FILTERS (1) Enrollments Reporting Period Filter is in the past 1 quarters

VISUALIZATION

DATA | RESULTS | SQL

Clients Age Tier	Clients Number
1 Below 0	
2 0 to 17	
3 18 to 24	
4 25 to 34	
5 35 to 44	
6 45 to 54	
7 55 to 64	
8 65 or Above	
9 Undefined	

Search for fields

Create custom fields, calculations, measures

Choose a predefined field

Save Look 9 rows · 0.1s · 1m ago Run

FILTERS (1) Custom Filter

Enrollments Reporting Period Filter is in the past 1 quarters

Custom Filter [Help + Syntax Reference](#)

```

    ${users.age} > 20 OR (${users.state} = "CA" AND
    ${users.age} < 50)
  
```

VISUALIZATION EDIT

- Below 0 0.00%
- 0 to 17 41.00%
- 18 to 24 1.26%
- 25 to 34 15.90%
- 35 to 44 16.74%
- 45 to 54 13.39%
- 55 to 64 7.95%
- 65 or Above 2.02%

DATA RESULTS SQL Row Limit 500 Totals

Clients Age Tier	Clients Number of Clients
1 Below 0	0
2 0 to 17	98
3 18 to 24	3
4 25 to 34	38
5 35 to 44	40
6 45 to 54	32
7 55 to 64	19
8 65 or Above	7

Powered by Looker

Access other features such as Saving, Scheduling, Merging, and Dashboards

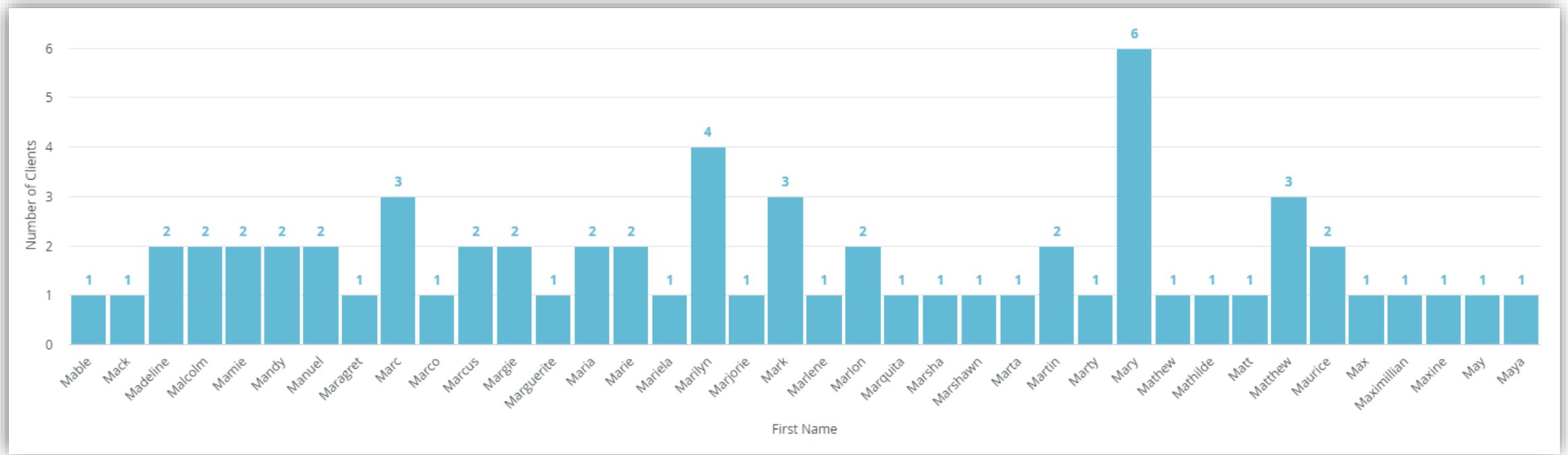
FILTERS: Add built in and custom filters

VISUALIZATION: Create custom charts graphs, and tables

DATA: View & edit the raw data output

Example

- How many Marys?



Custom Calculations And Dimensions

When to Use

- Combining or extracting info from an existing field or dimension
- Perform logical or mathematical operations on existing fields
- Dimensions are filterable and pivotable
- Dimensions can reference fields without adding them to the report

Example

Edit Custom Dimension

Total Annual Income

U.S. Dollars (0) — \$1,235

`${entry_screen.income_individual}*12`

No Quick Help

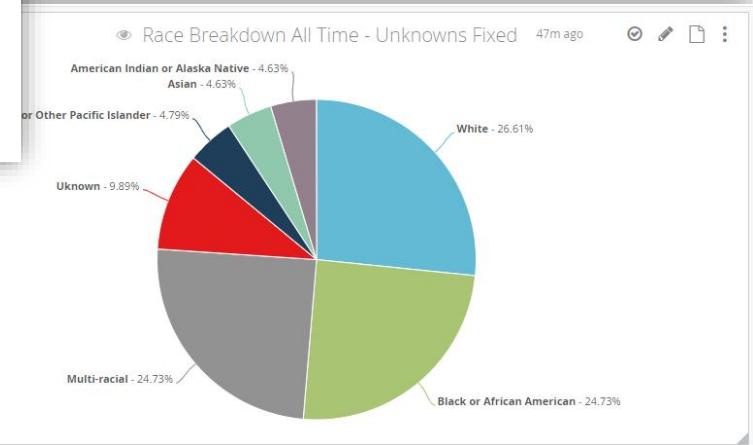
Help + Syntax Reference

Cancel Save

Custom Dimension Example

- Group responses for “Data Not Collected,” “Client Refused,” “Other,” or “NULL” into a single “Unknown” Category

```
if(${static_demographics.race_text}="Data Not Collected" OR  
${static_demographics.race_text}="Client Refused" OR  
${static_demographics.race_text}="Client doesn't Know" OR  
${static_demographics.race_text}="" OR  
is_null(${static_demographics.race_text}), "Unknown"  
, ${static_demographics.race_text})
```



Custom Dimension Project (10 mins)

Groups of 2-4

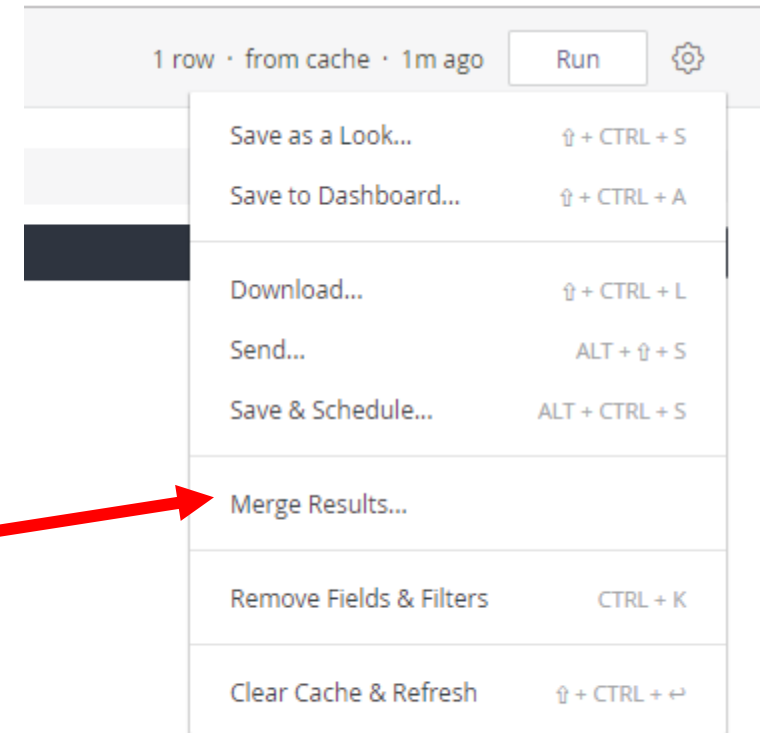
- Create a table or chart that counts unique clients in your project by custom age groups
- Age at Entry
 - For example:
 1. Youth
 2. Adults
 3. Seniors

Example: Create a Caseload Chart

- A chart that shows the total active caseload of all staff in a program(s)

Merging Results

- The looker “Merge” feature allow you to combine data from different models based on a common field
- Limited to queries under 5,000 rows



- HOW TO MERGE
 - Start a report
 - Click the “Gear” icon then “Merge Results”
 - Choose the model you want to merge with
 - Build the related report in that model
 - Choose the Merge Rules

Merge Example

- Build a report that shows live program utilization and capacity
- Hint:
 - program utilization is in the “HMIS Performance” model
 - Program Capacity it in the “Project Descriptor” model

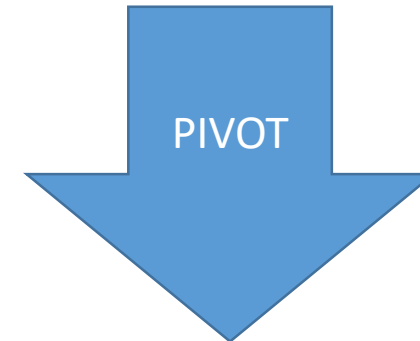
Custom Measures

- Use to count, sum, max, min on custom data points that are not already available
- Cannot use with custom dates
- **CUSTOM MEASURE EXAMPLE:**
 - Calculate Housing outcomes by project

Pivot Tables

- A pivot table is a data analysis tool that summarizes and reorganizes selected data in a table to obtain a desired report. A pivot table “pivots” or turns the data to view it from different perspectives

	Count
Red hat	10
Blue hat	20
Red fish	15
Blue fish	5



	Red	Blue
Hat	10	20
Fish	15	5

Dashboard Filters

- Allow you to filter on multiple fields across some or all of the reports on a dashboard.

Add/Edit Dashboard Filters

New Filter

Untitled Filter

Name: Untitled Filter

Type: Field

Select a field to link to this filter.

Choose Model... Choose Explore... Choose Field...

Tiles to Update Filters to Update Customize Filter

Select the dashboard tiles to update when this filter changes. All None

Race Breakdown All Time - Unknowns Fixed (copy) Choose Field...

Race Breakdown All Time - Unknowns Fixed Choose Field...

Age Cohorts Choose Field...

Names Count Choose Field...

Housing Rate by Project Type Choose Field...

Cancel Save

Quick Tips for Building Reports

- If you need client level data always include the Client Unique ID and/or Personal ID
- Be careful to choose the field from the correct folder (entry, assessment, update, exit, etc...)
- The default filter in the HMIS Performance Model “is in the past 1 quarter.” This can be changed
- When downloading a report to .csv make sure you select “Limit: All Results”

Questions?

Additional Examples...