

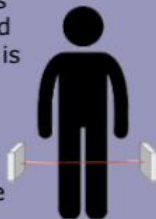
# Data Studio Overview

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# Building-level Counts

Gate counts measure how many times people (patrons and staff) come through our doors by using an infrared beam which increments a counter by one each time it is crossed. Operations staff collect the counter numbers once every 4 hours when buildings are open.

Since the counter counts every time a person enters, and every time they exit, we divide the number on the gate by two to get the number of times someone entered the building.

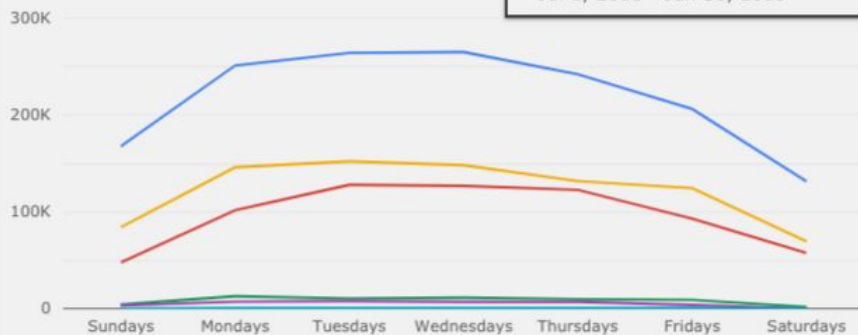


We can't know how many different people the gate counts represent, because people may come and go multiple times in a day, but they give us a good indicator of how busy a location is at a particular time.

## Total visits by day of the week

Date Range

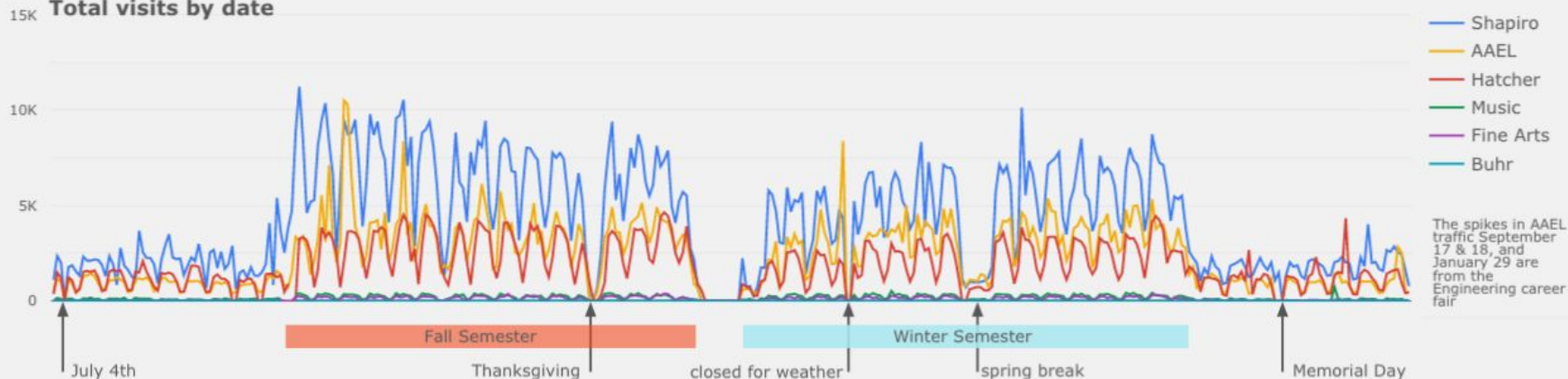
Jul 1, 2018 - Jun 30, 2019



## Filter

Select a Location

## Total visits by date



# Considerations when choosing Data Studio

- Cost
  - Free to create reports, free to share reports
- Longevity
  - 🙋
- Data Privacy
  - Not approved for “Sensitive Data” at Umich
  - Permissions for viewing: no “library only”
- Accessibility
  - No headings, can’t accurately tab through report, no alt text

Untitled Report

FileViewPageHelp

↺↻🔍Add a chart

📅📊📄🔗🔧🔍🔍

Add dataTheme and layout

Add data to report


Connect to data

My data sources

🔍 Search

Google Connectors (17)


Connectors built and supported by Data Studio. [Learn more](#)



Google Analytics

By Google


Connect to Google Analytics reporting views.



Google Ads

By Google


Connect to Google Ads performance report data.



Google Sheets

By Google


Connect to Google Sheets.



BigQuery

By Google


Connect to BigQuery tables and custom queries.



File Upload

By Google


Connect to CSV (comma-separated values) files.



Campaign Manager

By Google


Connect to Campaign Manager data.



Cloud Spanner

By Google


Connect to Google Cloud Spanner databases.



Cloud SQL for MySQL

By Google


Connect to Google Cloud SQL for MySQL databases.



Display & Video 360

By Google


Connect to Display & Video 360 report data.



Extract Data

By Google


Connect to Extract Data



Google Ad Manager 360

By Google


Connect to Google Ad Manager data.



Google Cloud Storage

By Google


See your files in Google Cloud Storage.



MySQL

By Google


Connect to MySQL databases.



PostgreSQL

By Google


Connect to PostgreSQL databases.



Search Ads 360

By Google

Connect to Search Ads 360 performance reports.



Search Console

By Google

Connect to Search Console data.

Untitled Report

FileViewPageHelp

Share

View

Add a page

Add a chart

Add data

Theme and layout

← Add data to report

Data credentials: Owner

Google Sheets

By Google

The Google Sheets connector allows you to access data stored in a Google Sheets worksheet.

LEARN MOREREPORT AN ISSUE

ALL ITEMS

OWNED BY ME

SHARED WITH ME

STARRED

URL

OPEN FROM GOOGLE DRIVE

Spreadsheet

Studio Test Sheet

AAEL Building report data

Gate counts for post class suspension co...

Michigan Covid-19

Call number Map

Hourly Head Counts

Library Operations Data Sources

Music Library Hourly Patron Count

Copy of All Library Counts - Gate/Building ...

AAEL Building Count

Hatcher Hourly Floor Counts

Taubman Medical Library Hourly Count

Shapiro floor counts

All Library Counts - Gate/Building FY 2020

Shapiro Suma data

Show more items

Worksheet

Sheet1

Pivot Table 1

Sheet2

Options

☒ Use first row as headers

☒ Include hidden and filtered cells

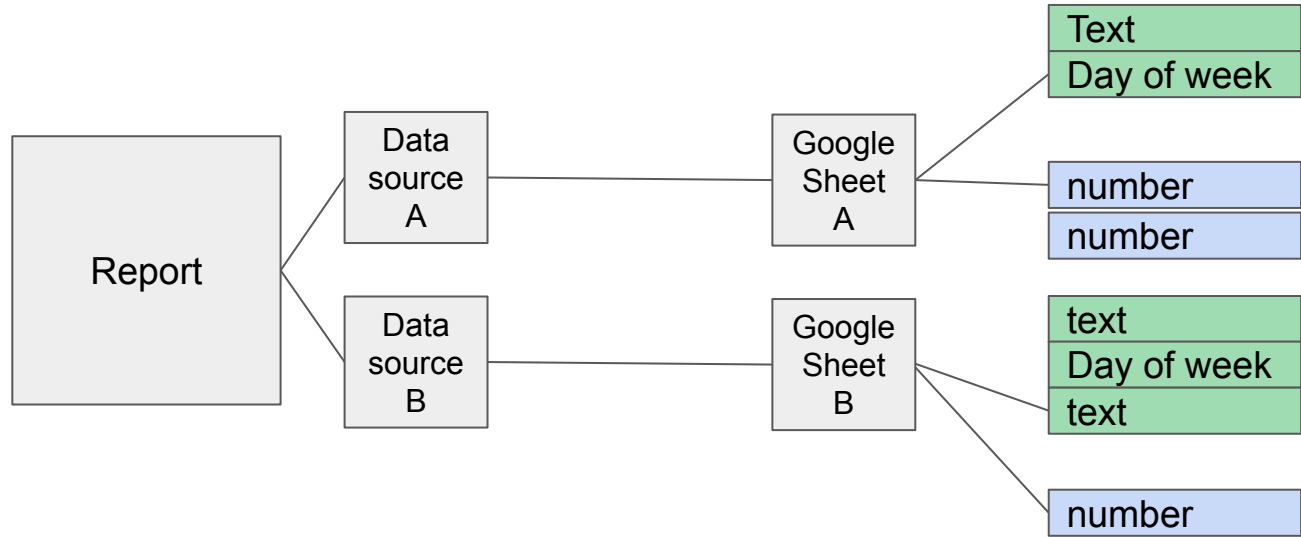
Column headers must be unique.  
Columns with empty headers will not be added to the data source.

Optional Range, e.g. A1:B52

# Data Formatting: Rows instead of tables

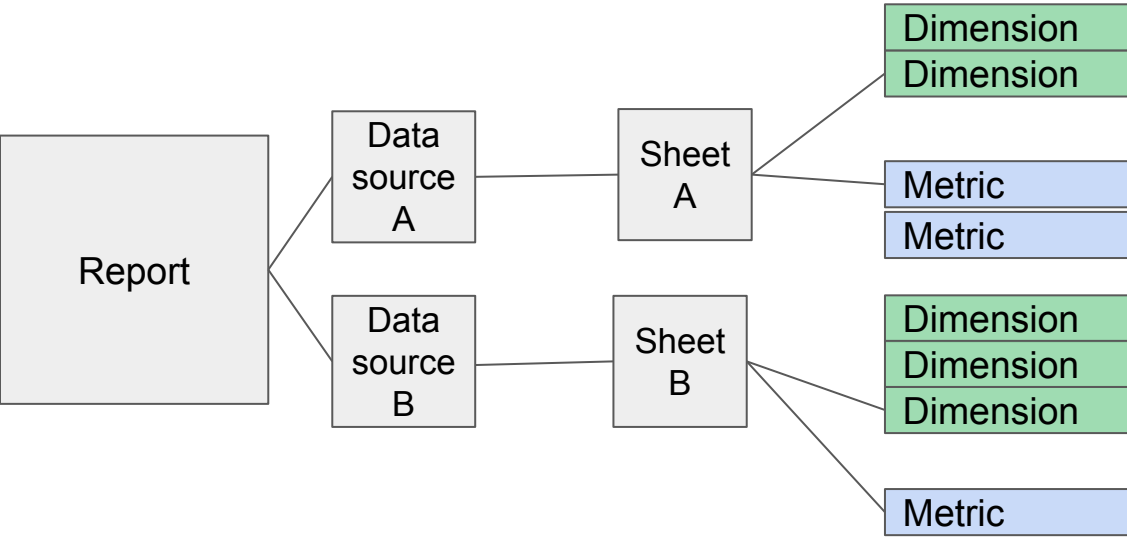
| A         | B       | C     | D         | E       | F      | G       |  |
|-----------|---------|-------|-----------|---------|--------|---------|--|
|           | AAEL    | Buhr  | Fine Arts | Hatcher | Music  | Shapiro |  |
| Friday    | 3458.75 | 13.33 | 82.27     | 4325.67 | 236.45 | 6315.17 |  |
| Monday    | 4115.62 | 11.08 | 253.18    | 7356.25 | 341.5  | 7190.23 |  |
| Saturday  | 1755.57 | 0     | 0         | 1817.46 | 51.89  | 3297.31 |  |
| Sunday    | 2309.46 | 0     | 103.45    | 3919.08 | 114.83 | 4767.69 |  |
| Thursday  | 4002.08 | 10.75 | 220.91    | 6355.33 | 283    | 7678.17 |  |
| Tuesday   | 4577.00 | 12.85 | 205.83    | 7251.85 | 288.08 | 8619.46 |  |
| Wednesday | 4509.54 | 11.54 | 220.42    | 7032.31 | 321.15 | 8627.23 |  |
|           |         |       |           |         |        |         |  |
|           |         |       |           |         |        |         |  |
|           |         |       |           |         |        |         |  |

|    | A         | B                 | C         | D          |
|----|-----------|-------------------|-----------|------------|
| 1  | Location  | Studio day number | Day       | Gate Count |
| 2  | AAEL      | 0                 | Sunday    | 2309.46    |
| 3  | AAEL      | 1                 | Monday    | 4115.62    |
| 4  | AAEL      | 2                 | Tuesday   | 4577.00    |
| 5  | AAEL      | 3                 | Wednesday | 4509.54    |
| 6  | AAEL      | 4                 | Thursday  | 4002.08    |
| 7  | AAEL      | 5                 | Friday    | 3458.75    |
| 8  | AAEL      | 6                 | Saturday  | 1755.57    |
| 9  | Buhr      | 0                 | Sunday    | 0          |
| 10 | Buhr      | 1                 | Monday    | 11.08      |
| 11 | Buhr      | 2                 | Tuesday   | 12.85      |
| 12 | Buhr      | 3                 | Wednesday | 11.54      |
| 13 | Buhr      | 4                 | Thursday  | 10.75      |
| 14 | Buhr      | 5                 | Friday    | 13.33      |
| 15 | Buhr      | 6                 | Saturday  | 0          |
| 16 | Fine Arts | 0                 | Sunday    | 103.45     |
| 17 | Fine Arts | 1                 | Monday    | 253.18     |
| 18 | Fine Arts | 2                 | Tuesday   | 205.83     |
| 19 | Fine Arts | 3                 | Wednesday | 220.42     |
| 20 | Fine Arts | 4                 | Thursday  | 220.91     |
| 21 | Fine Arts | 5                 | Friday    | 82.27      |
| 22 | Fine Arts | 6                 | Saturday  | 0          |
| 23 | Hatcher   | 0                 | Sunday    | 3919.08    |
| 24 | Hatcher   | 1                 | Monday    | 7356.25    |
| 25 | Hatcher   | 2                 | Tuesday   | 7251.85    |
| 26 | Hatcher   | 3                 | Wednesday | 7032.31    |
| 27 | Hatcher   | 4                 | Thursday  | 6355.33    |



In Studio a 'data source' is like a map to a data file or database. It says this is where the data is, and this is how it's structured.

A report can have more than one data source.



This is a dimension, because it represents day of the week, and not a how much or how many



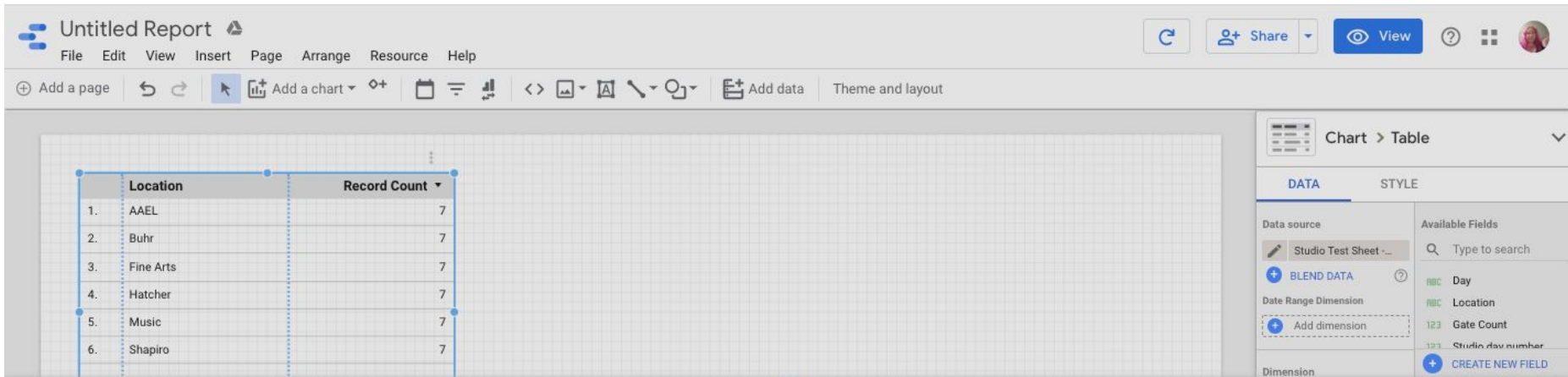
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**Metrics** = continuous variables; numbers that represent *how many of, how much of*

**Dimensions** = discrete variables; *characteristics, kinds, details*

***You can make a metric by counting a dimension or a dimension by treating numbers as labels if that makes sense for your data***





Studio Test Sheet - Sheet1

Data credentials: Owner

Data freshness: 15 minutes

Community visualizations access: Off

Field editing in reports: On

DONE

← EDIT CONNECTION | FILTER BY EMAIL

+ ADD A FIELD

| Index | Field ↓           | Type ↓     | Default Aggregation ↓ | Description ↓ |
|-------|-------------------|------------|-----------------------|---------------|
| 1     | Day               | ABC Text   | None                  |               |
| 2     | Gate Count        | 123 Number | Sum                   |               |
| 3     | Location          | ABC Text   | None                  |               |
| 4     | Studio day number | 123 Number | Sum                   |               |
| 5     | Record Count      | 123 Number | Auto                  |               |

This is what kind of data the data source map says each column is

REFRESH FIELDS

5 / 5 Fields



Chart > Bar

DATA

STYLE

Data source

Studio Test Sheet <...

+ BLEND DATA

Date Range Dimension

+ Add dimension

Dimension

Day

Drill down

Breakdown Dimension

Location

Metric

SUM Gate Count

Optional metrics

Sort

AUT Record Count

Descending

Ascending

Secondary sort

SUM Gate Count

Descending

Ascending

Filter

Bar Chart Filter

+ ADD A FILTER

Interactions

Apply filter

Available Fields

Type to search

Day

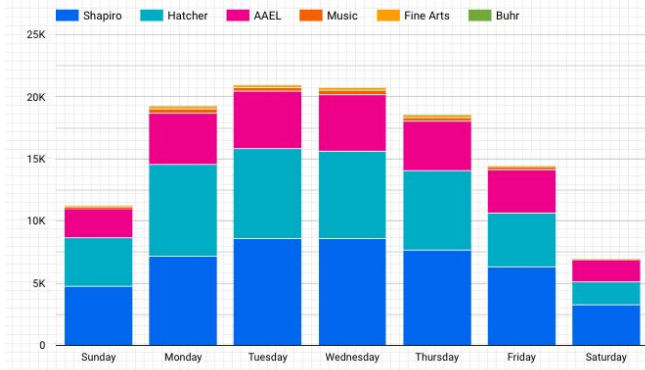
Location

Gate Count

Studio day number

Record Count

CREATE NEW FIELD



Click here to change the chart type



Edits this Data source - it changes the map to the spreadsheet for every chart using this map

✕ Removes this data source (map) from this chart, and lets you make a new one

Dimension will be the X axis on most charts

Breakdown Dimension controls multiple lines or bars for comparison

Metric is the Y axis on most charts, the how many or how much you want to show

Sort controls the order of the X axis



Chart > Bar

DATA

STYLE

Data source

✎ Studio Test Sheet <...

+ BLEND DATA ?

Date Range Dimension

+ Add dimension

Dimension

📅 Day

Drill down



Breakdown Dimension

ABC Location

Metric

SUM Gate Count

Optional metrics



Sort

AUT Record Count

☒ Descending

☐ Ascending

Secondary sort

SUM Gate Count

Available Fields

🔍 Type to search

📅 Day

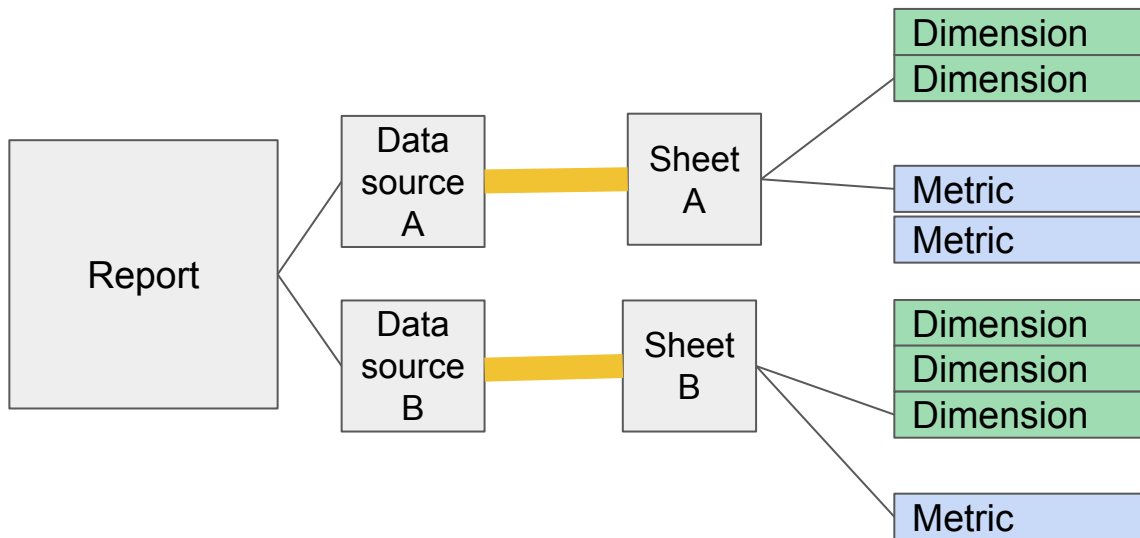
ABC Location

123 Gate Count

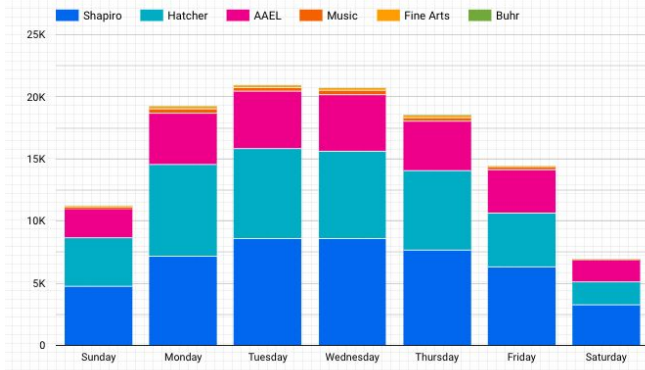
123 Studio day number

123 Record Count

# Don't break your Data Source mappings!



To make a graph from more than one data source in a report, remove it from the graph, and make a new one, don't edit it!



Click here to change the chart type



Edits this Data source - it changes the map to the spreadsheet for every chart using this map

✕ Removes this data source (map) from this chart, and lets you make a new one

Dimension will be the X axis on most charts

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Metric is the Y axis on most charts, the how many or how much you want to show

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Chart > Bar

DATA

STYLE

Data source

✎ Studio Test Sheet <...

+ BLEND DATA ?

Date Range Dimension

+ Add dimension

Dimension

📅 Day

Drill down



Breakdown Dimension

ABC Location

Metric

SUM Gate Count

Optional metrics



Sort

AUT Record Count

☒ Descending

☐ Ascending

Secondary sort

SUM Gate Count

Available Fields

🔍 Type to search

📅 Day

ABC Location

123 Gate Count

123 Studio day number

123 Record Count

# Considerations when creating a report:

- Size it for the screens people will use
- Include instructions for use
- Issues if logged into Chrome with a different account
- Duplicate the report in another medium
  - for accessibility
  - incase Google sunsets Data Studio

# Library Operations Report 2018-2019

To  
navigate  
through  
the  
report  
use the  
table of  
contents.

For the past three years, the [Library Environments department](#) has been developing new processes, workflows, and systems to collect data generated primarily by staff in the Operations division. With this report, we aim to share our work with our colleagues across the library and continue to make improvements on our data collection and use efforts.

With this effort, Operations supports the following division and library-wide goals:

- Continue to make our library spaces, services and collections welcoming, accessible and safe for our diverse library colleagues and our community of scholars.
- Transform our physical and digital spaces by applying user-centered guidelines for the use of space.
- Create and nurture a culture of assessment by purposefully evaluating outward-facing activity and internal activities and processes, in order to understand the impact of our work and make decisions informed by qualitative and quantitative data.

## Data Collection

In order to accomplish this, Operations staff from across every unit and department help gather data. We also rely on our [Operations Data Stewards Team](#) to help us review data quality, ensure timely collection, create training, and help generate reports like this one. We couldn't do this work without support and participation from our colleagues in our division.

## Additional Data

This report includes an overview of the different types of data we collect. We are happy to provide a different sample or more information upon request. If you have any questions about this report or what it contains, please email: [libraryenvironments@umich.edu](mailto:libraryenvironments@umich.edu)

You can use this  
button to view the  
report full-screen



## Using this Report

This report contains a number of graphs and charts that show Operations data. The first time you view a graph it **may take a few seconds to load**, so please be patient.

Many of the graphs in this report are interactive, so please **hover your mouse** over lines for more information, and **use the filters** to explore the data.

### Turn Gif:

On

✓ Off



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