

Data Warehousing and Business analytics

Lecture - 9

Visualizing query results

Tools for visualizing



Steps for using Data Studio

- Load data to Bigquery
- Write the query
- Run query to get the result
- Choose “Explore data”
- Visualize data

Load data to Bigquery

- Create a project (if necessary)
- Create a database (if necessary)
- Create a tables (if necessary)
- Choose the table
- Write & Run the query

Visualize query results

Wine_quality x *Untitled 7 x

Untitled 7 **RUN** **SAVE** **DOWNLOAD** **SHARE** **SCHEDULE** **MORE** Query completed.

```
1 SELECT * FROM `dwh02-418303.Visualizing.Wine_quality`
```

Press Alt+F1 for Accessibility Options.

Query results **SAVE RESULTS** **EXPLORE DATA**

JOB INFORMATION RESULTS CHART JSON EXECUTION DETAILS EXECUTION GRAPH

| Row | type | fixed_acidity | volatile_acidity | citric_acid | residual_sugar | chlorides | free_sulfur_dioxide | total_sulfur_dioxide |
|-----|-------|---------------|------------------|-------------|----------------|-----------|---------------------|----------------------|
| 1 | white | 4.2 | 0.215 | 0.23 | 5.1 | 0.041 | 64.0 | 157.0 |
| 2 | white | 9.1 | 0.59 | 0.38 | 1.6 | 0.066 | 34.0 | 182.0 |
| 3 | red | 11.6 | 0.58 | 0.66 | 2.2 | 0.074 | 10.0 | 47.0 |
| 4 | red | 13.2 | 0.56 | 0.59 | 1.9 | 0.096 | 6.0 | 17.0 |

Results per page: 50 1 - 50 of 6497

Job history

Tools for visualizing

Query results

Press Alt+F1 for Accessibility Options.

[SAVE RESULTS](#) [EXPLORE DATA](#)

JOB INFORMATION RESULTS CHART JSON EXECUTION DETAILS EXEC

| Row | type | fixed_acidity | volatile_acidity | citric_acid | res |
|-----|-------|---------------|------------------|-------------|-----|
| 1 | white | 4.2 | 0.215 | 0.23 | |
| 2 | white | 9.1 | 0.59 | 0.38 | |
| 3 | red | 11.6 | 0.58 | 0.66 | |

Explore with Sheets [↗](#)
Analyze big data with a live connection in a familiar spreadsheet tool.

Explore with Looker Studio [↗](#)
Visualize results and create live dashboards from your data.

Explore with Python notebook [PREVIEW](#)
Explore and visualize with Python.

Results per page: 50 1 – 50 of 6497 [|<](#) [<](#) [>](#) [>|](#)

Job history [REFRESH](#) [^](#)

Looker Studio

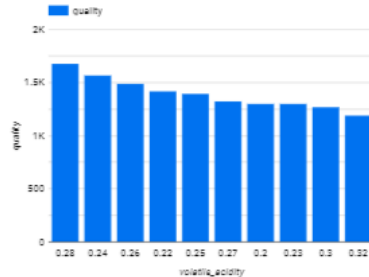
To add a new page

To add a new chart

To add data

Wine_quality

| | type | quality |
|----|-------|---------|
| 1. | white | 28.790 |
| 2. | red | 0.012 |



Let's get started

Drag a field from the Data Panel to the canvas to add a new chart or select a component on the report canvas to edit it.

Data

Search

Wine_quality - 4/1/24, 6:46 AM

123 alcohol
123 chlorides
123 citric_acid
123 density
123 fixed_acidity
123 free_sulfur_dioxide
123 pH
123 quality
123 residual_sugar
123 sulphates
123 total_sulfur_dioxide
ABC type
volatila_acidity
+ Add a field
+ Add a parameter

Data

Properties

Filter bar

Add new page and select chart type

The screenshot shows the Power BI interface for an 'Untitled Report'. The top menu bar includes 'File', 'Edit', 'View', 'Insert', 'Page', 'Arrange', 'Resource', and 'Help'. The 'Add a chart' button in the ribbon is highlighted with a red box. A dropdown menu is open, showing various chart types: Table, Scorecard, Time series, Bar, Pie, Google Maps, Geo chart, Line, Area, and Scatter. The 'Theme and Layout' pane on the right is also visible, showing the 'THEME' tab with 'Current Theme Default' and a 'Customize' button. Below this, there are two theme preview cards: 'Default' and 'Edge', each showing a preview of a report page with text and charts. At the bottom of the pane is a button labeled 'Extract theme from image'.

Untitled Report

File Edit View Insert Page Arrange Resource Help

Share View ? [User Icon]

⊕ Add a page ↶ ↷ [Pointer] [Add data] **Add a chart** [Filter] Add a control < > [Image] [Text] [Line] [Area] [Scatter] Theme and layout

Table

Scorecard

Time series

Bar

Pie

Google Maps

Geo chart

Line

Area

Scatter

Theme and Layout

THEME LAYOUT

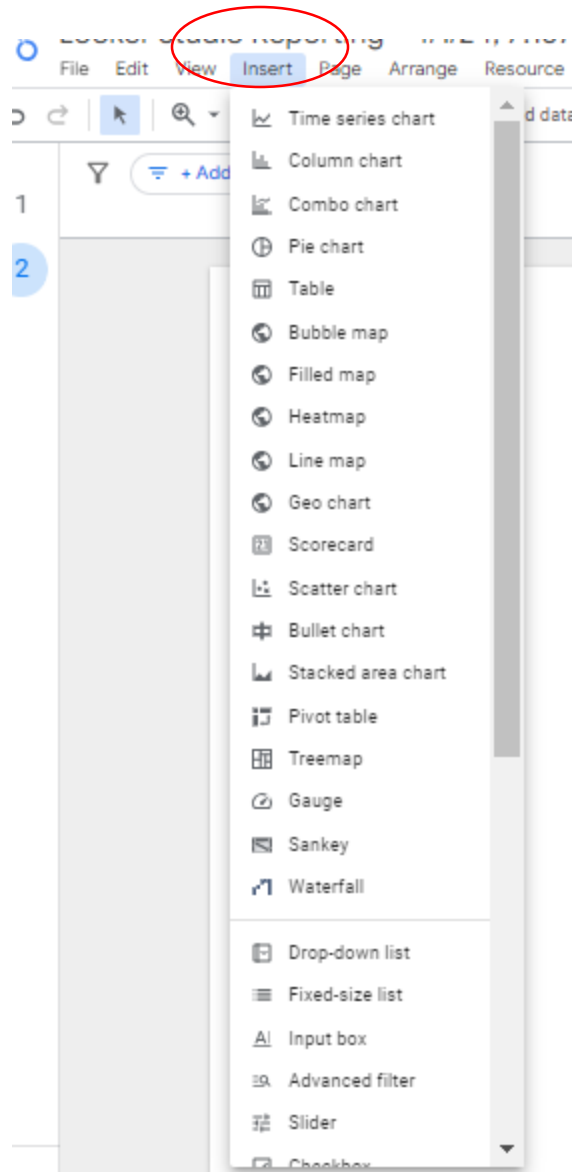
Current Theme Default Customize

Default Text [Bar Chart] [Pie Chart]

Edge Text [Bar Chart] [Pie Chart]

Extract theme from image

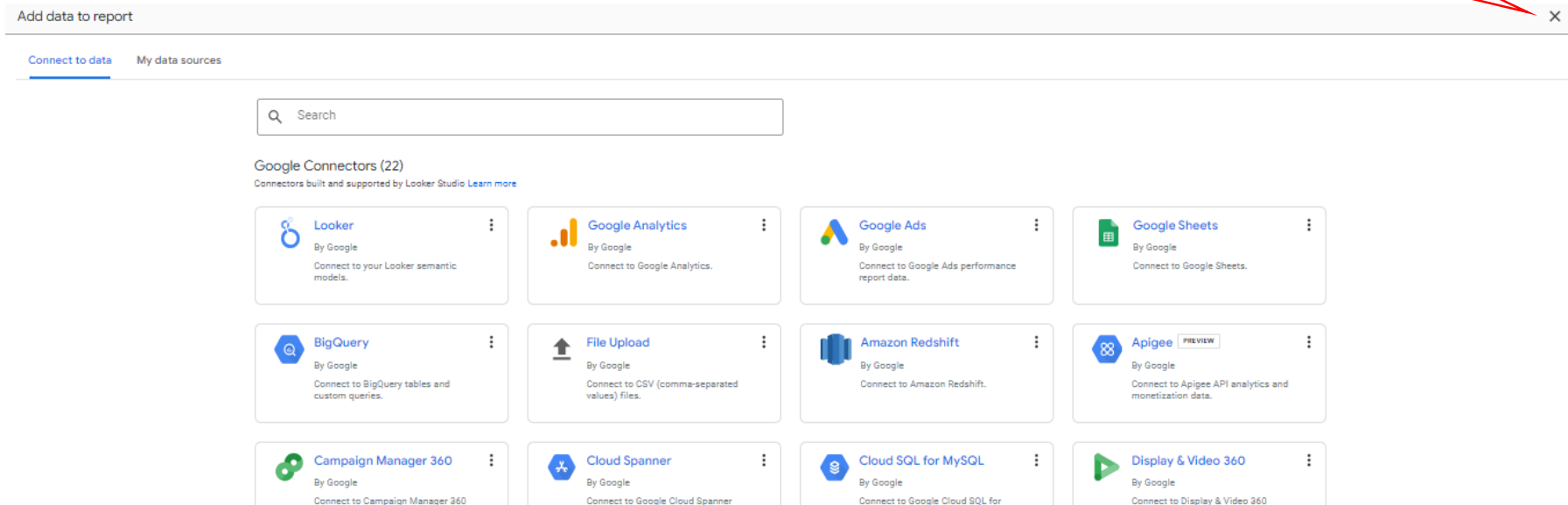
Add new page and select chart type



Add new data

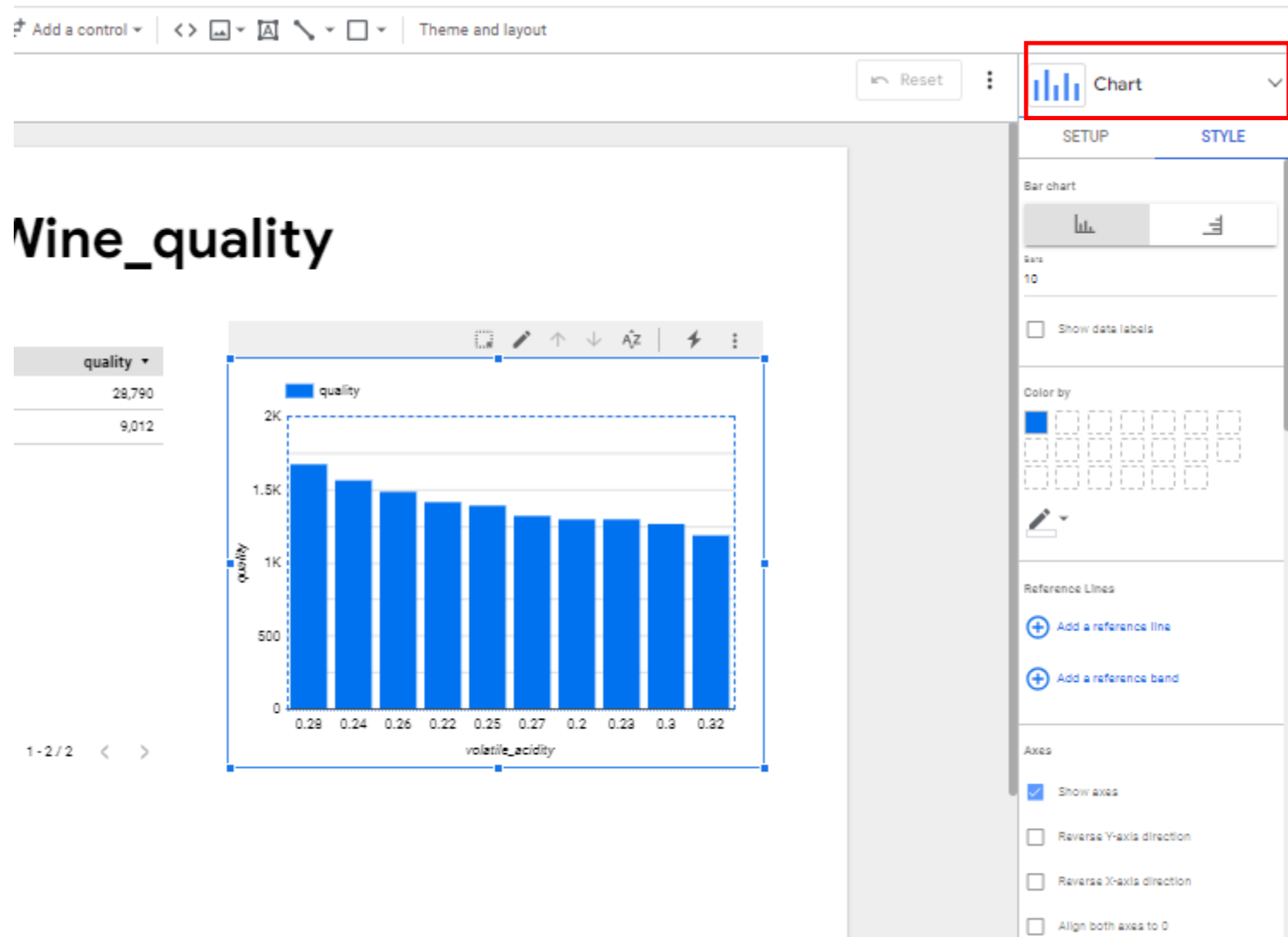
- Provide the information (two-step process)
- Load data to Looker Studio

Close if you do not add data



many more ...

Change type of chart



Change type of chart

Used for formatting

The screenshot shows a data visualization interface. On the left, a bar chart titled 'quality' is displayed, with the y-axis labeled 'quality' ranging from 0 to 2K and the x-axis labeled 'volatile_acidity'. The chart shows 10 blue bars of varying heights. To the right of the chart is a panel for selecting and formatting charts. The top section of this panel, titled 'Bar', contains a grid of various chart types. A red box labeled 'Used for formatting' points to this grid. Below the grid are two tabs: 'SETUP' and 'STYLE'. The 'SETUP' tab is active, showing options for 'Bar chart' (with a bar chart icon selected), 'Data' (set to 'To'), and a checkbox for 'Show data labels'. The 'STYLE' tab is also visible, showing a 'Color by' section with a color palette. A red box labeled 'Used for setting the charts' points to the 'SETUP' and 'STYLE' sections.

Used for setting the charts

Change type of chart

Used for formatting

The screenshot shows a data visualization interface. On the left, a bar chart titled 'quality' is displayed, with the y-axis labeled 'quality' ranging from 0 to 2K and the x-axis labeled 'volatile_acidity'. The chart shows 10 blue bars of varying heights. To the right of the chart is a panel for selecting and formatting charts. The top section of this panel, titled 'Bar', contains a grid of various chart types. A red box labeled 'Used for formatting' points to this grid. Below the grid are two tabs: 'SETUP' and 'STYLE'. The 'SETUP' tab is active, showing options for 'Bar chart' (with a bar chart icon selected), 'Data' (set to 'To'), and a checkbox for 'Show data labels'. The 'STYLE' tab shows a 'Color by' section with a color palette. A red box labeled 'Used for setting the charts' points to the 'SETUP' and 'STYLE' sections.

Used for setting the charts

Save or download visualizations

File Edit View Insert Page Arrange Resource Help

2 of 2 → Add data Add a chart Add a control <> Theme and layout

1

2

Share...
Theme and layout
Report settings
Version history
Publishing settings
New report
Make a copy...
Download as
Embed report

PDF

Sum of quantity
37,873

Sum of Profit
286,397

Adventure works

Sum of profit by regions

| Region | Percentage |
|---------------|------------|
| New York City | 21.7% |
| Los Angeles | 10.6% |
| Seattle | |
| San Francisco | 35.8% |
| Detroit | |
| Lafayette | |
| Jackson | |

Sum of profit by years

| Year | Sum of profit |
|------|---------------|
| 2017 | 95,000 |
| 2016 | 82,000 |

Sum of quantity by Subcategories

Example: Use Adventure_works.csv

Adventure works

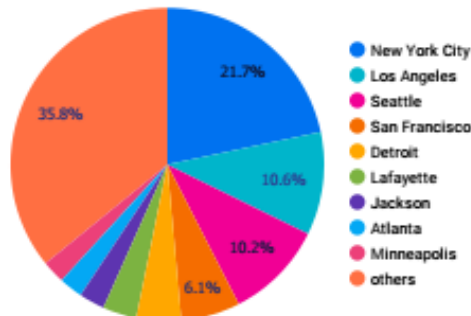
Sum of quantity

37,873

Sum of Profit

286,397

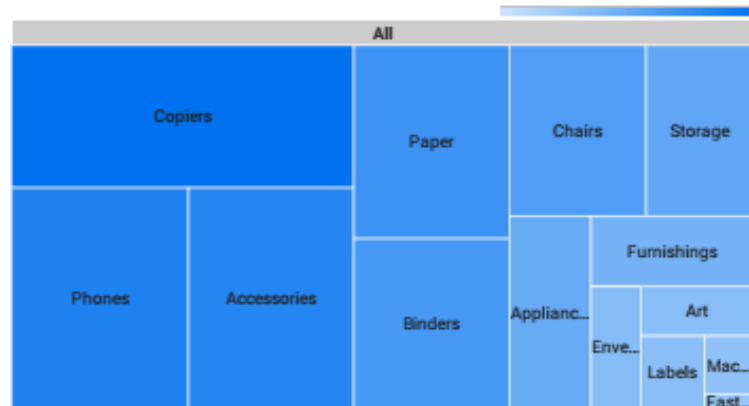
Sum of profit by regions



Profit vs quantity by Subcategories



Sum of quantity by Subcategories



Exercise: work with your database

- Load data sets **from your project** to Bigquery
- Transform your data (if necessary)
- Visualize the results

Connected sheets


Query results


Press Alt+F1 for Accessibility Options.

[SAVE RESULTS](#) [EXPLORE DATA](#)

JOB INFORMATION RESULTS CHART JSON EXECUTION DETAILS EXEC

| Row | type | fixed_acidity | volatile_acidity | citric_acid | res |
|-----|-------|---------------|------------------|-------------|-----|
| 1 | white | 4.2 | 0.215 | 0.23 | |
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Explore and visualize with Python. [PREVIEW](#)

Results per page: 50 1 – 50 of 6497 [REFRESH](#)

Job history

Explore with sheets

Untitled spreadsheet


File Edit View Insert Format Data Tools Extensions Help

100%

Connected Sheet 1

Chart Pivot table Function

| 123 | Tr | | |
|--------|----------------|-----------|------------|
| Row_ID | Order_ID | Order_Dat | Ship_Date |
| 6231 | CA-2017-127656 | 7/11/2017 | 7/17/2017 |
| 4190 | CA-2016-157714 | 9/26/2016 | 10/1/2016 |
| 3426 | CA-2015-153381 | 9/24/2015 | 9/28/2015 |
| 3427 | CA-2015-153381 | 9/24/2015 | 9/28/2015 |
| 8001 | US-2015-151407 | 11/8/2015 | 11/12/2015 |
| 8416 | CA-2017-107265 | 4/6/2017 | 4/12/2017 |
| 9251 | CA-2016-105354 | 12/2/2016 | 12/6/2016 |
| 9915 | CA-2017-160927 | 1/29/2017 | 1/31/2017 |
| 9916 | CA-2017-160927 | 1/29/2017 | 1/31/2017 |



Success! Your data is connected

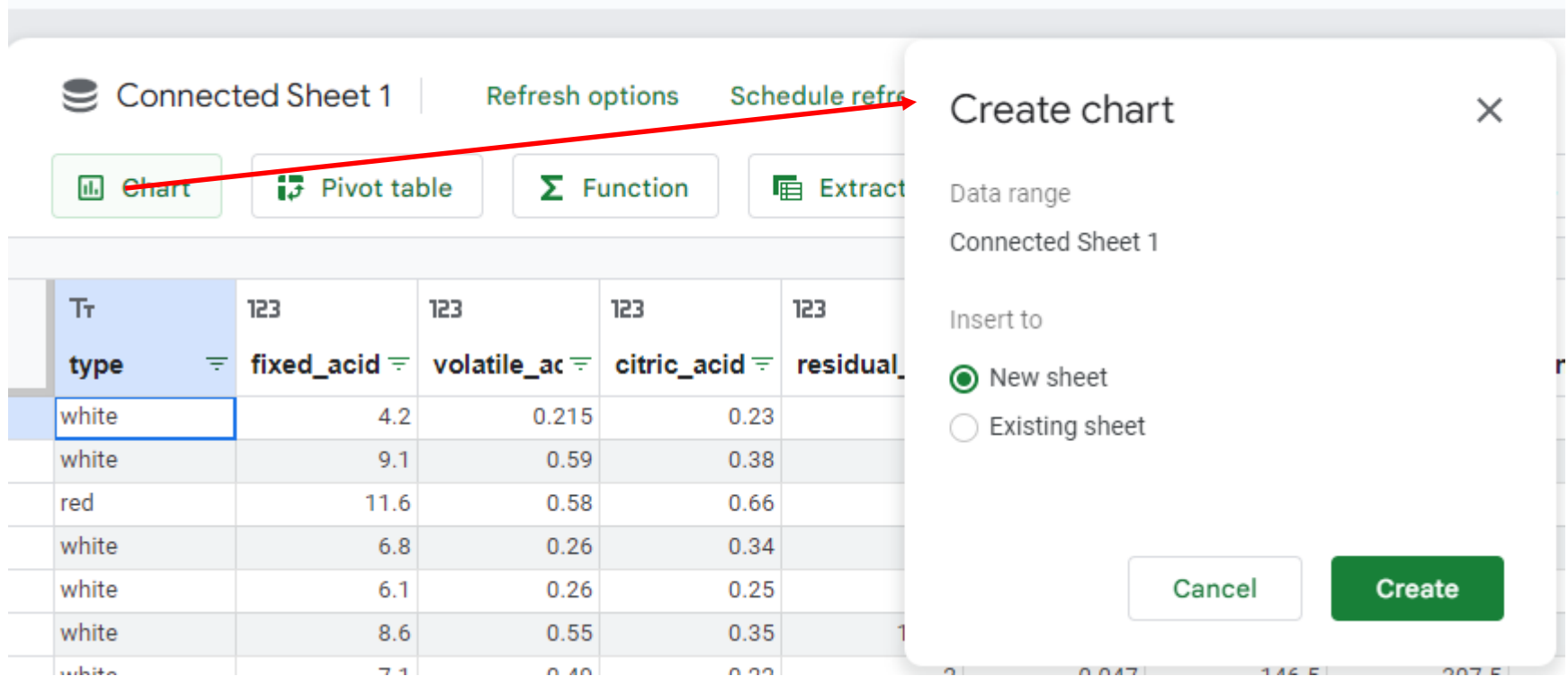
21 columns

Create connected charts, pivot tables, and functions that work on the entire dataset, or extract a subset of the raw data directly into Sheets.

Get started

[Watch video tutorial](#)

Explore with sheets



Connected Sheet 1 | Refresh options | Schedule refresh

Chart | Pivot table | Function | Extract

Create chart [X]

Data range
Connected Sheet 1

Insert to

☒ New sheet
☐ Existing sheet

Cancel Create

| type | fixed_acid | volatile_acid | citric_acid | residual_sugar |
|-------|------------|---------------|-------------|----------------|
| white | 4.2 | 0.215 | 0.23 | |
| white | 9.1 | 0.59 | 0.38 | |
| red | 11.6 | 0.58 | 0.66 | |
| white | 6.8 | 0.26 | 0.34 | |
| white | 6.1 | 0.26 | 0.25 | |
| white | 8.6 | 0.55 | 0.35 | 1 |
| white | 7.1 | 0.40 | 0.33 | 0 |

Explore with sheets

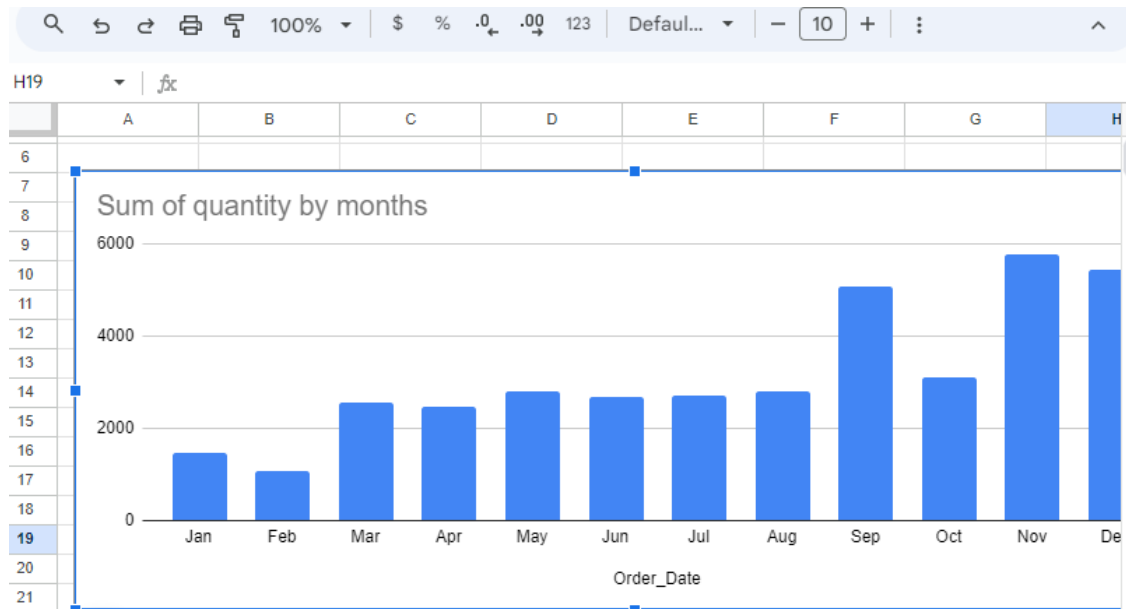


Chart editor ×

Connected Sheet 1

Setup

Customize

>

 Chart style

▼

 Chart & axis titles

Chart title

Title text

Sum of quantity by months

Title font

Title font size

**ANY
QUESTIONS?**

