Looker Studio

2024 Data Model

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Connect to Google BigQuery

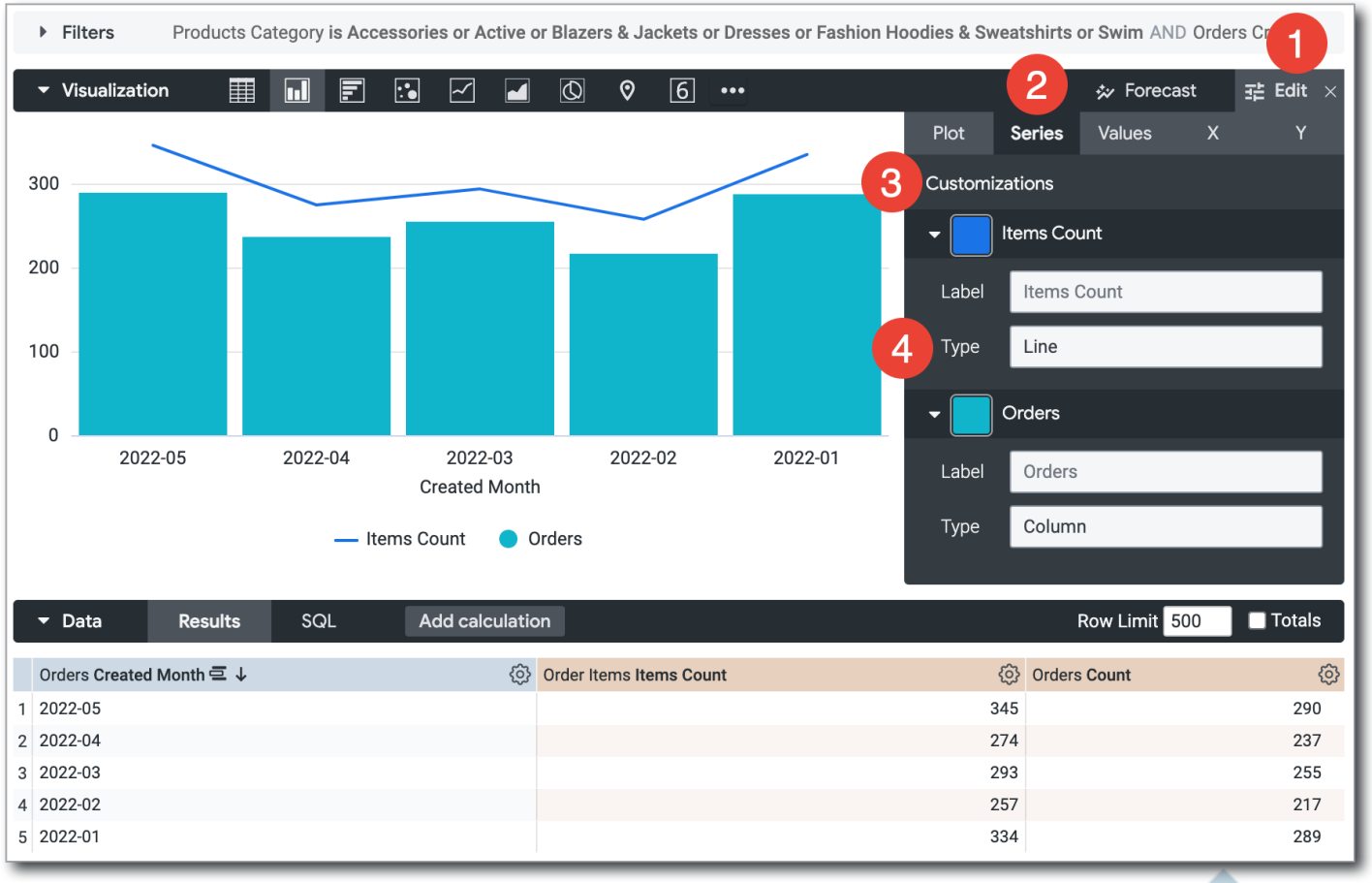
- BigQuery is Google's fully managed, petabyte scale, low-cost analytics data warehouse. The Looker Studio BigQuery connector lets you access data from your BigQuery tables within Looker Studio.

- To connect to a table or view, you'll need to supply the following information:
  - ✓A BigQuery project
  - ✓A dataset
  - ✓A table or view

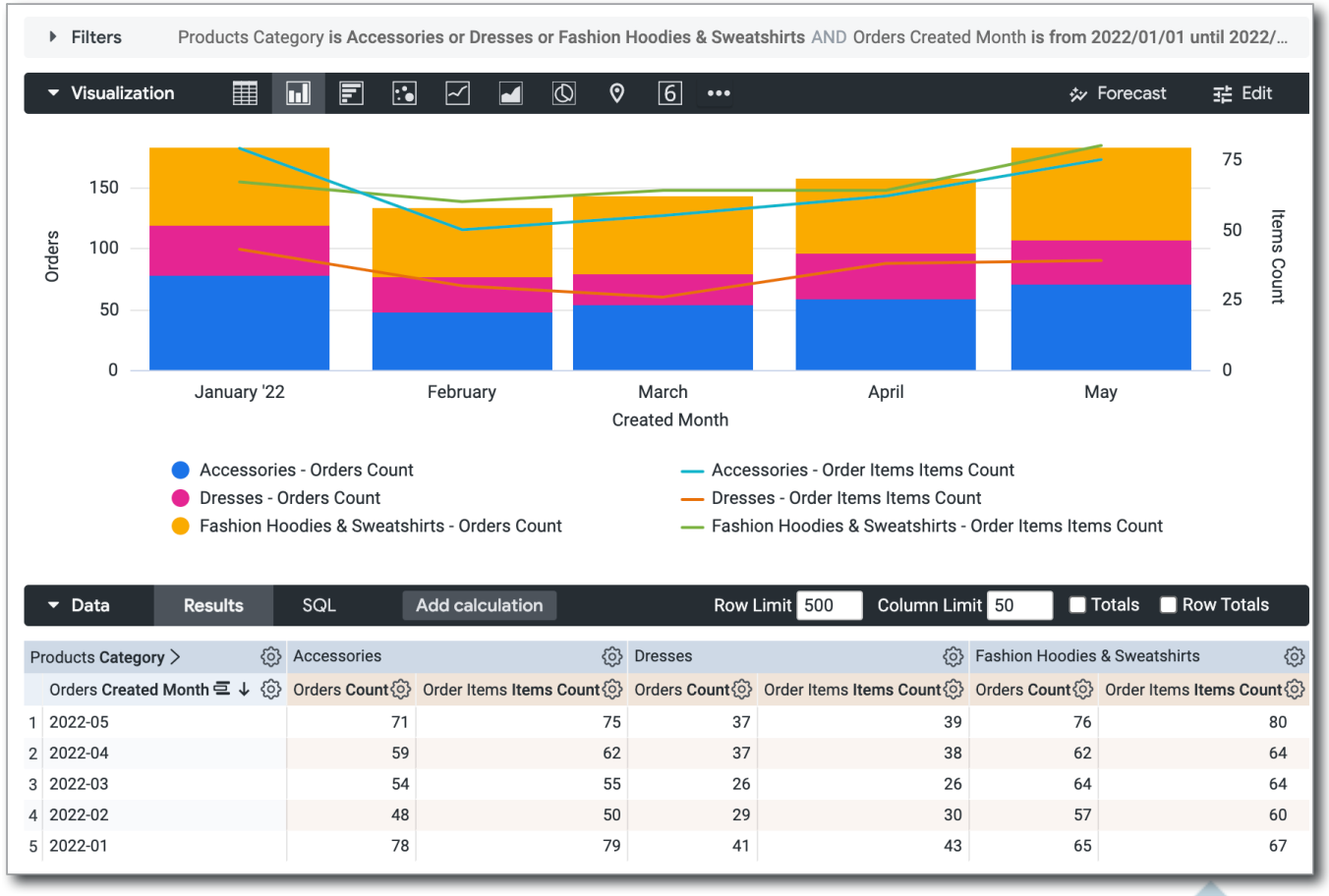
Looker introduction

Looker is a product that helps you explore, share, and visualize your company's data so that you can make better business decisions. This page will help you start learning Looker with our documentation.

Multiple visualization types on a single chart



Creating stacked charts



	Products Category	Accessories		Dresses		Fashion Hoodies & Sweatshirts	
	Orders Created Month	Orders Count	Order Items Items Count	Orders Count	Order Items Items Count	Orders Count	Order Items Items Count
1	2022-05	71	75	37	39	76	80
2	2022-04	59	62	37	38	62	64
3	2022-03	54	55	26	26	64	64
4	2022-02	48	50	29	30	57	60
5	2022-01	78	79	41	43	65	67

Find and organize content

Looker gives you access to your organization's data. Many users start by browsing through saved query results — which we call Looks — and dashboards that others in their organization have already created.

Building performant Looker dashboards

- **Data volume has the greatest impact on performance:**
  - ✓The more data returned in an individual element , the more memory resources are consumed.
  - ✓Looks and dashboard elements with thousands of data points will use significantly more memory.
- **Optimization Tips:**
  - ✓Limit the amount of data returned by each element by applying appropriate filters.
  - ✓Aggregate data where possible to reduce the number of data points displayed.

Building performant Looker dashboards

Limit the number of dashboard elements:

- The number of elements in a dashboard impacts its memory consumption and load time.
- Avoid dashboards with 25 or more queries to maintain perform

Building performant Looker dashboards

Strategic Use of Dashboard Settings:

- ✓Disable "Run on Load" for dashboards requiring filters to prevent unnecessary queries.
- ✓Use required filters to ensure dashboards run only with necessary parameters.

Leveraging Caching:

- ✓Use data groups to sync Looker content (dashboards, Looks, schedules) with your ETL process.
- ✓This minimizes unnecessary querying and ensures data freshness.

Building performant Looker dashboards

- Post-query processing features, such as merged results, custom fields, and table calculations, consume memory. Using the same calculations across multiple Looks and dashboards increases memory load.
- Limit the number of merged result tiles on a dashboard to no more than four to maintain performance.

Building performant Looker dashboards

Memory Consumption:

- ✓Pivoted dimensions consume additional memory as more data is returned.
- ✓High cardinality dimensions (with many unique values) create a column for each value, significantly increasing memory usage.

Optimization Tips:

- ✓Filter at the dashboard or Look level to allow users to select only the dimension values they are most interested in.
- ✓Avoid displaying all dimension values at once to improve dashboard performance.

Building performant Looker dashboards

Memory Impact:

- Having many columns and rows consumes more memory.
- Recommendation: Limit to 50 or fewer columns for optimal browser performance.

Performance Tips:

- Use filters at the dashboard or Look level to reduce the number of results in each element.
- Test dashboard performance regularly as you add elements.
- Refresh the page after adding Looks to assess performance impact.

How calculated fields work

- Definition: A calculated field is a formula that performs actions on one or more other fields in your data source.
- Capabilities:
  - ✓Perform arithmetic and math operations
  - ✓Manipulate text, date, and geographical information
  - ✓Use branching logic to evaluate and return different results
- Use Case: Enables dynamic data transformation within your reports

How blends work in Looker Studio

- Blended data combines information from multiple data sources.
- Blends are embedded within the report they are created in and are not reusable across reports.
- Copying a report also copies the blends, ensuring charts using blended data remain functional.
- Metrics from underlying data sources in a blend become unaggregated numeric dimensions.
- Blends inherit data freshness and credential settings from their original data sources, without separate configurations.

Merging Techniques

- Include only the required subset of data
- Combine multiple tables from the same data source
- Advantages of merging for visualization flexibility

Key Advanced Concepts

- Data table creation before merging
- Re-aggregation of metrics in merged data
- Potential for more rows in merged results

Date Ranges and Filters

- Pre-merge vs. post-merge application of filters
- Filter inheritance in merged data
- Considerations for compatibility

Best Practices

- Optimize queries for performance
- Ensure alignment of metrics and dimensions
- Test merged data for accuracy

Looker Access Control and Permission Management

- Relationship between data security and user permissions
- Define the roles of users and groups in Looker
- Recommendation: Use groups to simplify permission management

Content Access Control

- Folder-based access levels:
  - ✓View: Permission to see content
  - ✓Manage: Permission to edit and configure folder access
- How to assign folder access permissions

Best Practices

- Manage permissions through groups
- Regularly review and update access settings
- Flexible access control ensures data security
- Adopt best practices for efficient permission management

Reference

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