Google Cloud

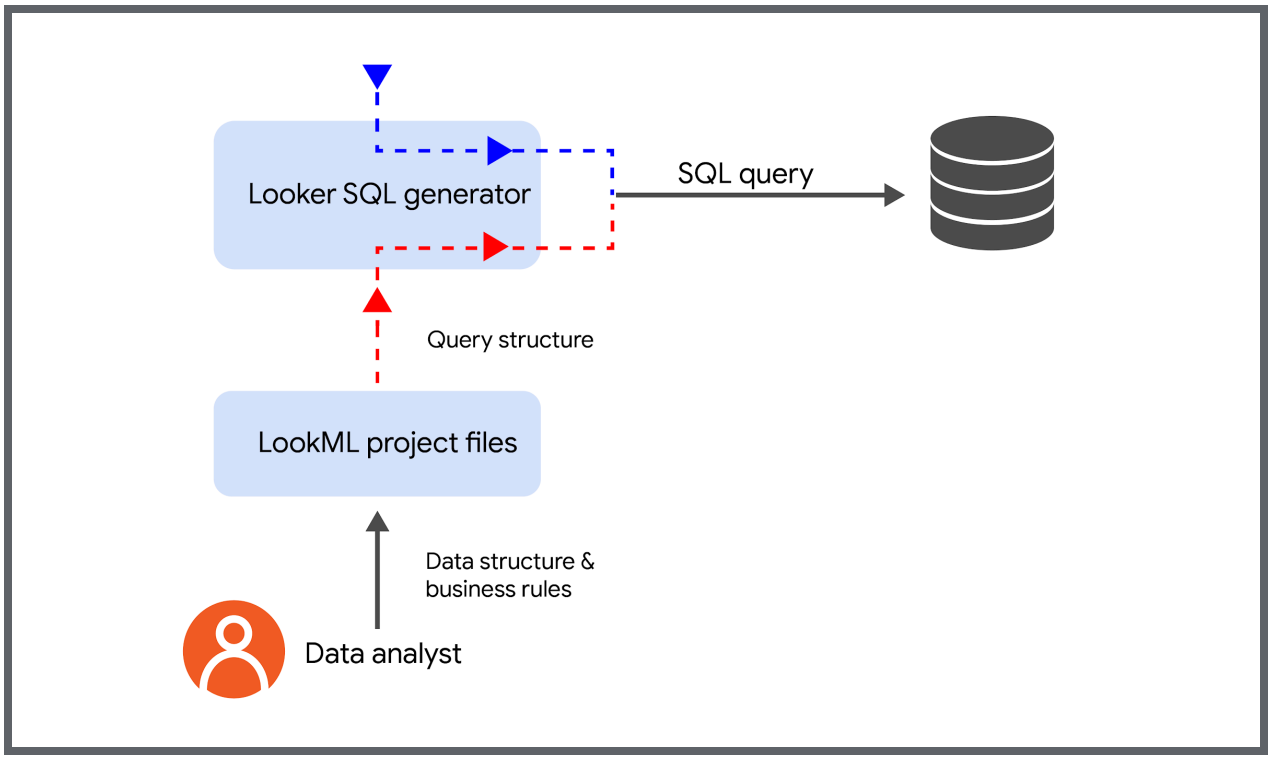
Guide to LookML

Looker Modeling Language, called LookML, is a data modeling language written for use with Looker Enterprise. Using predefined data types and syntax for data modeling, LookML allows you to define dimensions, measures, and data relationships without writing complex SQL queries.

In this reading, you'll learn the essentials of LookML that you'll need to define dimensions and measures in the lab and start exploring LookML on your own.

LookML

LookML is a data modeling language used in the Looker development environment to create semantic data models. A semantic data model is an approach to structuring data that emphasizes the meaning and relationships between data elements. Using LookML, you can describe how you want to organize, understand and explore the data in LookML project files. Looker uses this model to generate SQL queries to retrieve information from the database.



Access the Looker IDE

To write and manage LookML code in the Looker environment, use the integrated development environment (IDE). The IDE is a user-friendly way to work with LookML and develop your data models more efficiently.
To access Looker IDE:

1. Login to Looker Enterprise. The exact way you log into your organization's Looker Enterprise will depend on the specific setup and security configuration.
2. Click the **Develop** tab in the left-hand navigation panel of your Looker instance.
3. Within the **Develop** panel, you'll find a list of available LookML projects. Click the name of the project you want to work on.

Parts of a LookML project

A LookML project is a collection of files that define how Looker interacts with your database to explore and visualize data. Each LookML project contains at least one model file and view file. Manifest files are also often found, especially for larger projects.

A LookML project contains all the essential components needed to analyze and understand your data using Looker. Within each project, it's best practice for developers to organize each file type into its own folder. If not organized into folders, files will be listed alphabetically.

A LookML project can contain a variety of files. Common LookML files and extensions include:

Model Files (.model) define the underlying data structure, drawing from your database.

You'll use model files to establish connections to databases or data sources, define relationships between fields (joins), and set permissions for data access.

View Files (.view) define how users interact with and explore data. You'll use view files to specify fields to be displayed (dimensions and measures), create filters, calculations, and aggregations and customize data presentation.

Manifest Files (manifest.lkml) manage overall project settings and dependencies. Each project should have only one manifest file. You'll use manifest files to specify project name, version, and description and set up packages and other processes that will be used by the entire project.

Key-value pairs in LookML code

LookML files contain code that shapes how data is organized and explored within Looker. This code is written in a language that is easily readable by humans and machines using key-value pairs to structure information. Each element in LookML is defined by a unique key and a value that describes its properties. By modifying these values, you can change the attributes of each element to fit your specific needs.

Edit and validate LookML files

The code found in LookML files can be easily edited using the Looker IDE. Built-in syntax highlighting and code completion can help you write code faster and more accurately. Validation tools help you catch errors easily before the code is deployed. Validation can also make sure that your code follows best practices and consistency.

To edit a LookML file in the IDE:

1. Double-click individual LookML files within the project to open them in the editor.
2. Modify the LookML code within the editor as needed.
3. Save the modified files using the IDE's **Save** button.

To use syntax highlighting and code completion:

1. Enter the code into the IDE.
2. Syntax highlighting is automatically enabled. As you enter code, different elements such as dimensions and comments will be highlighted.
3. Code completion suggestions for keywords, fields, functions will also appear automatically.
4. Use the arrow keys to navigate suggestions.
5. Press **Tab** or **Enter** to accept a suggestion.

To validate LookML code:

1. Click the **Validate LookML** button located at the top-right corner of the IDE to use the built-in validation tool.
2. Review the results. Any issues that will prevent the code from running will be displayed as errors in the results. Issues that may prevent the code from running optimally or do not follow best practices will be displayed as Warnings.

3. Click the arrows next to each warning or error to expand the list and view detailed information about each issue.
4. Address the issues.
5. Save the modified files using the IDE's **Save** button.

Key takeaways

LookML is a human-readable data modeling language based on key-value pairs that makes it easier to create data models in Looker by reducing the need to write complex SQL code. Using LookML, you can define dimensions and measures, specify how data elements connect, and determine how users will interact with the data. To work with LookML in the Looker environment, use the Looker IDE to easily access, edit, and save your code.

Resources for more information

Here are some additional resources to help you get started with LookML:

- For more information on getting started with LookML, visit Introduction to LookML.
- For more information about the types of LookML files, review Types of files in a LookML project.
- For more information about LookML terminology, explore LookML terms and concepts.
- For more information about testing LookML changes, investigate LookML data tests.
- For more information about deploying and testing LookML changes, check out Using version control and deploying.