# The elements of LookML

Previously, you learned about Integrated Development Environments, or (IDE), applications that bring the tools needed for development together in a user-friendly environment. Developers working in the Looker IDE use the modeling language LookML. LookML can be used to describe dimensions, aggregate data, perform calculations, and define data relationships in a SQL database. In this reading, you'll explore some of the basic elements of LookML.

Project-driven development

LookML is a Looker-specific version of YAML, a data-oriented markup language that makes it easy for people to read and write. LookML is organized by projects. These projects are a collection of files that include model and View files, and any other important files users need to access. These files describe the objects, database connections and Views, like which tables are included, how those tables are joined, and how information about each table is calculated. They also determine the user interface elements that carry out SQL queries.
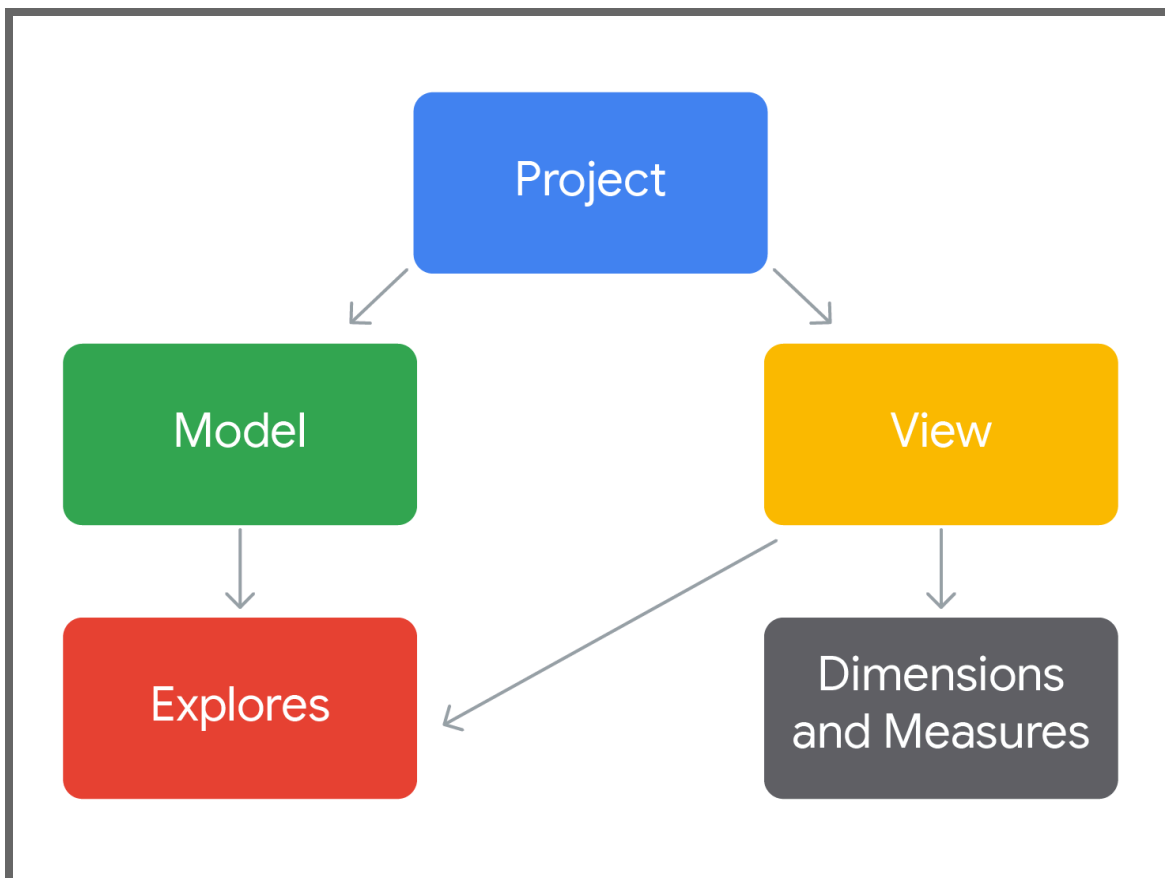
Basically, LookML defines how users interact with the database. How the backend of the project is set up, and which files are included determine the users' View.

These projects are version controlled using Git, a version control platform for tracking changes across a computer system.

Project structures

A project usually contains one or more Model files that define the major structures of the project, including the model itself, its Views, the groups of tables called Explores, and dimensions and measures.

Model

The model is like a portal into the database; it's designed to enable users the ability to explore data in an intuitive, easy-to-use environment by specifying a connection to a specific database. Projects can contain multiple models for the same database to enable different users the ability to access the data they need. This means each model can be designed for different users.

The model is also where Explores are defined and organized. Users will be able to find the models listed in the Explore menu of their environment.

Explores

Explores consist of one or more Views that are joined together. Explores define the relationships between Views, and enable the end user to freely query the underlying data model without having to code or recreate these data relationships. Explores are organized under their associated model in the Explore menu, where users can navigate to the Views they need to interact with.

Views

Views are logical representations of tables that are either directly linked to the database tables, or derived from those tables. The View declaration defines the list of fields, or the dimensions and measures, and how they're linked in the original database. Views are often joined with other Views; these relationships are defined in the Explores.

Dimensions and measures

Views contain dimensions and measures that can be used to build queries in the Looker environment. Dimensions are fields that can be grouped together to filter results, including attributes associated with columns in the underlying tables, facts and numerical values, or

derived values. Measures are fields that use mathematical functions like COUNT, SUM, AVG, MIN, or MAX to give users an aggregate view of the data.

Key takeaways

As you practice working in an IDE using Looker and LookML, it's important to understand these tools and how they work, starting with the most basic structures of a project. Then you can build on your knowledge and start creating Looker projects to explore data yourself!