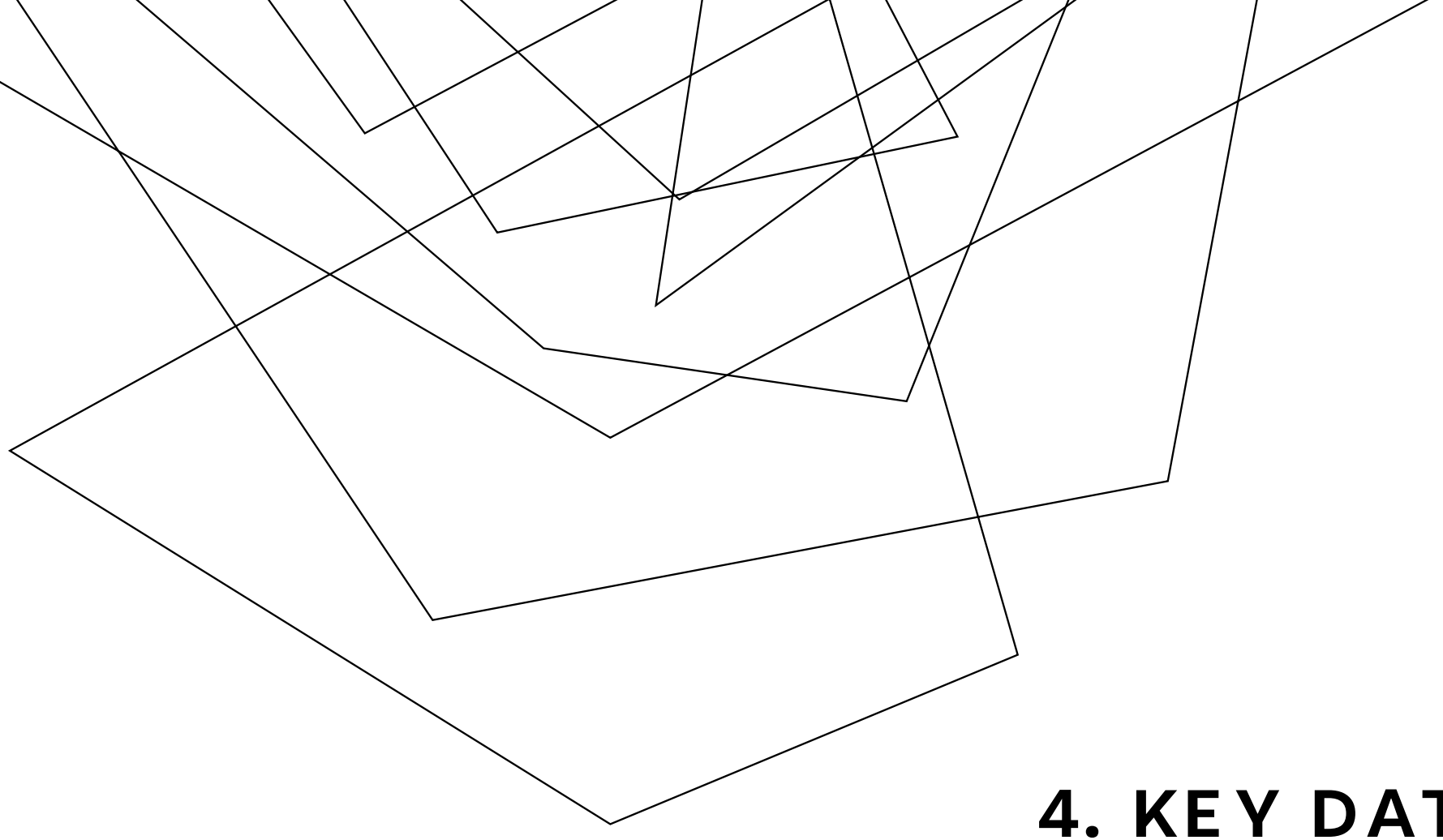
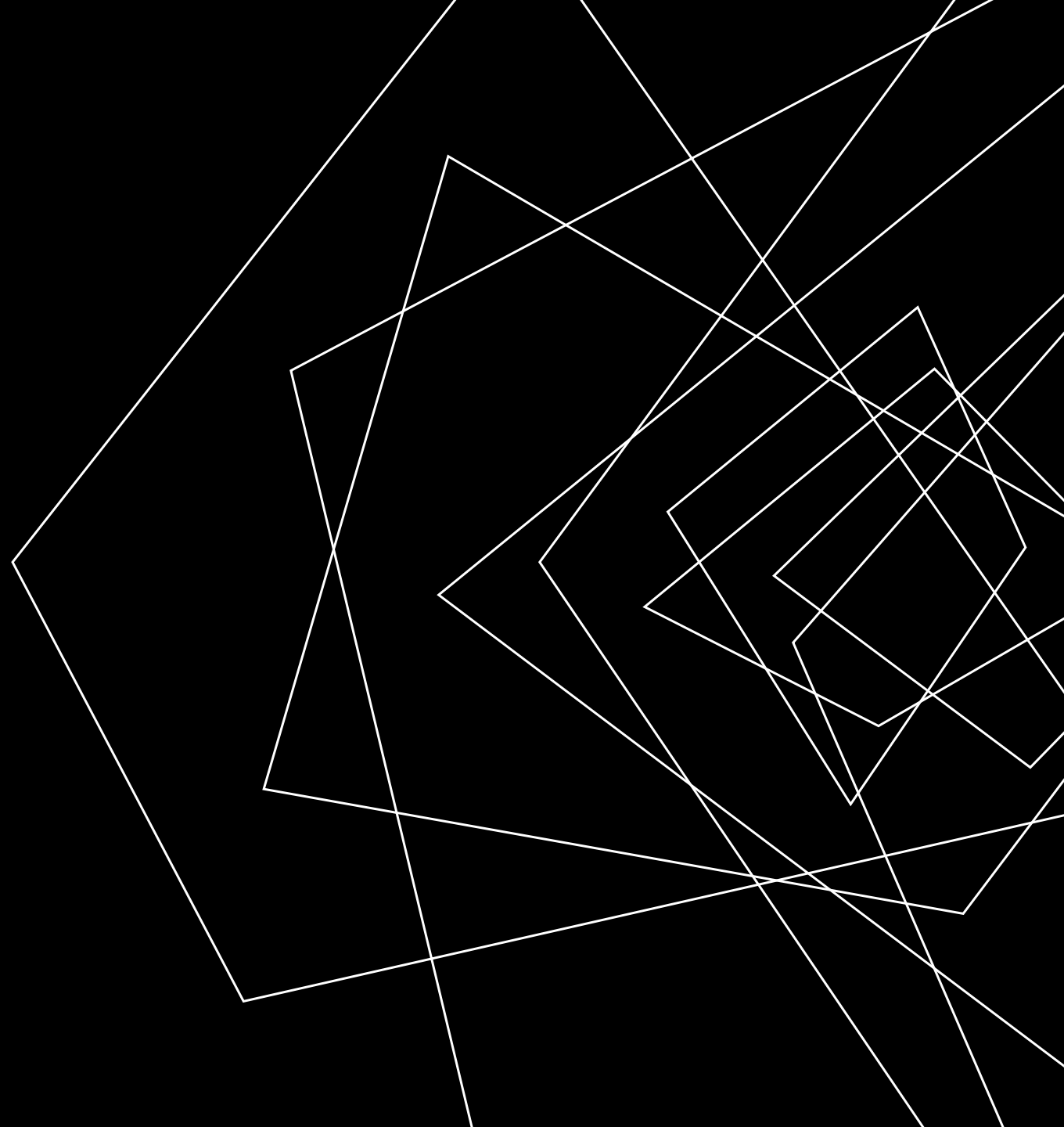


4. KEY DATA ANALYST TOOLS

By Pritey Mehta

OVERVIEW

the most common programs and solutions used by data analysts include spreadsheets, query languages, and visualization tools.



SPREADSHEETS

Data analysts rely on spreadsheets to collect and organize data. Two popular spreadsheet applications you will probably use a lot in your future role as a data analyst are Microsoft Excel and Google Sheets.

Spreadsheet structure data in a meaningful way by letting you

- Collect, store, organize, and sort information
- Identify patterns and piece the data together in a way that works for each specific data project
- Create excellent data visualizations, like graphs and charts.

DATABASES AND QUERY LANGUAGES

A database is a collection of structured data stored in a computer system. Some popular Structured Query Language (SQL) programs include MySQL, Microsoft SQL Server, and BigQuery.

Query languages

- Allow analysts to isolate specific information from a database(s)
- Make it easier for you to learn and understand the requests made to databases
- Allow analysts to select, create, add, or download data from a database for analysis

VISUALIZATION TOOLS

Data analysts use a number of visualization tools, like graphs, maps, tables, charts, and more. Two popular visualization tools are Tableau and Looker. These tools

- Turn complex numbers into a story that people can understand
- Help stakeholders come up with conclusions that lead to informed decisions and effective business strategies
- Have multiple features
  - **Tableau**'s simple drag-and-drop feature lets users create interactive graphs in dashboards and worksheets
  - **Looker** communicates directly with a database, allowing you to connect your data right to the visual tool you choose.

CHOOSING THE RIGHT TOOL FOR THE JOB

Depending on which phase of the data analysis process you're in, you will need to use different tools.

For example, if you are focusing on creating complex and eye-catching visualizations, then the visualization tools we discussed earlier are the best choice.

But if you are focusing on organizing, cleaning, and analyzing data, then you will probably be choosing between spreadsheets and databases using queries.

Spreadsheets and databases both offer ways to store, manage, and use data. The basic content for both tools are sets of values.

SOME KEY DIFFERENCES

Spreadsheets

Software applications

Structure data in a row and column format

Organize information in cells

Provide access to a limited amount of data

Manual data entry

Generally, one user at a time

Controlled by the user

Databases

Data stores - accessed using a query language (e.g. SQL)

Structure data using rules and relationships

Organize information in complex collections

Provide access to huge amounts of data

Strict and consistent data entry

Multiple users

Controlled by a database management system