Data analyst tasks and responsibilities

A data analyst is a person whose job is to gather and interpret data in order to solve a specific problem. The role includes plenty of time spent with data but entails communicating findings too.

Here's what many data analysts do on a day-to-day basis:

- **Gather data:** Analysts often collect data themselves. This could include conducting surveys, tracking visitor characteristics on a company website, or buying datasets from data collection specialists.
- **Clean data:** Raw data might contain duplicates, errors, or outliers. Cleaning the data means maintaining the quality of data in a spreadsheet or through a programming language so that your interpretations won't be wrong or skewed.
- **Model data:** This entails creating and designing the structures of a database. You might choose what types of data to store and collect, establish how data categories are related to each other, and work through how the data actually appears.
- **Interpret data:** Interpreting data will involve finding patterns or trends in data that could answer the question at hand.
- **Present:** Communicating the results of your findings will be a key part of your job. You do this by putting together visualizations like charts and graphs, writing reports, and presenting information to interested parties.

What tools do data analysts use?

During the process of data analysis, analysts often use a wide variety of tools to make their work more accurate and efficient. Some of the most common tools in the data analytics industry include:

- Microsoft Excel
- Google Sheets
- SQL
- Tableau
- R or Python
- SAS
- Microsoft Power BI
- Jupyter Notebooks

Types of data analysts

As advancing technology has rapidly expanded the types and amount of information we can collect, knowing how to gather, sort, and analyze data has become a crucial part of almost any industry. You'll find data analysts in the criminal justice, fashion, food, technology, business, environment, and public sectors—among many others.

People who perform data analysis might have other titles such as:
- Medical and health care analyst
- [Market research analyst](#)
- [Business analyst](#)
- [Business intelligence analyst](#)
- Operations research analyst
- Intelligence analyst

How to become a data analyst

There's more than one path toward a career as a data analyst. Whether you're just graduating from school or looking to switch careers, the first step is often assessing what transferable skills you have and building the new skills you'll need in this new role.

Data analyst technical skills

- **Database tools:** Microsoft Excel and [SQL](#) should be mainstays in any data analyst's toolbox. While Excel is ubiquitous across industries, SQL can handle larger sets of data and is widely regarded as a necessity for data analysis.
- **Programming languages:** Learning a statistical programming language like [Python or R](#) will let you handle large sets of data and perform complex equations. Though Python and R are among the most common, it's a good idea to look at several job descriptions of a position you're interested in to determine which language will be most useful to your industry.
- **Data visualization:** Presenting your findings in a clear and compelling way is crucial to being a successful data analyst. Knowing how best to present information through charts and graphs will make sure colleagues, employers, and stakeholders

will understand your work. Tableau, Jupyter Notebook, and Excel are among the many tools used to create visuals.

- **Statistics and math:** Knowing the concepts behind what data tools are actually doing will help you tremendously in your work. Having a solid grasp of statistics and math will help you determine which tools are best to use to solve a particular problem, help you catch errors in your data, and have a better understanding of the results.

If that seems like a lot, don't worry—there are plenty of courses that will walk you through the basics of the hard skills you need as a data analyst. This [IBM Data Analyst Professional Certificate course](#) on Coursera can be a good place to start.

Data analyst workplace skills

- **Problem solving:** A data analyst needs to have a good understanding of the question being asked and the problem that needs to be solved. They also should be able to find patterns or trends that might reveal a story. Having the critical thinking skills will allow you to focus on the right types of data, recognize the most revealing methods of analysis, and catch gaps in your work.
- **Communication:** Being able to get your ideas across to other people will be crucial to your work as a data analyst. Strong written and speaking skills to communicate with colleagues and other stakeholders are good assets in data analysts.
- **Industry knowledge:** Knowing about the industry you work in—health care, business, finance, or otherwise—will give you an advantage in your work and in job applications. If you're trying to break into a specific industry, take some time to pay attention to the news in your industry, or read a book on the subject. This can familiarize you with the industry's main issues and trends.