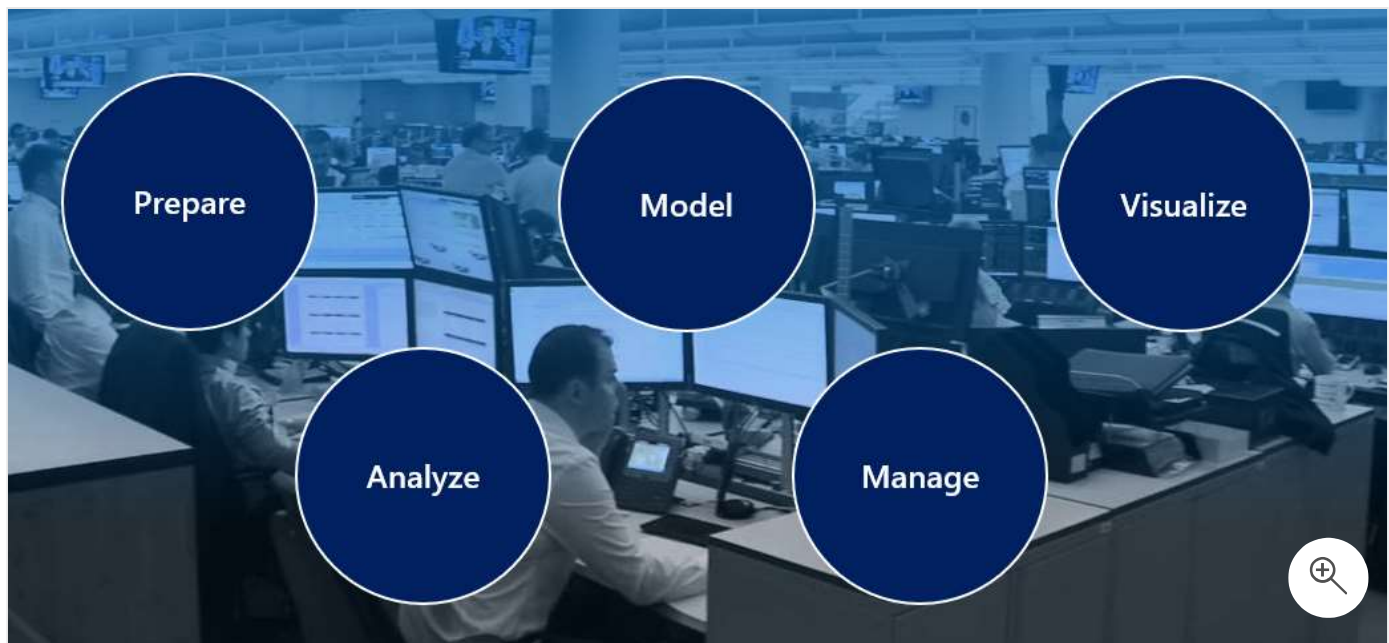


# Tasks of a data analyst

10 minutes

A data analyst is one of several critical roles in an organization, who help uncover and make sense of information to keep the company balanced and operating efficiently. Therefore, it's vital that a data analyst clearly understands their responsibilities and the tasks that are performed on a near-daily basis. Data analysts are essential in helping organizations gain valuable insights into the expanse of data that they have, and they work closely with others in the organization to help reveal valuable information.

The following figure shows the five key areas that you'll engage in during the data analysis process.



## Prepare

As a data analyst, you'll likely divide most of your time between the prepare and model tasks. Deficient or incorrect data can have a major impact that results in invalid reports, a loss of trust, and a negative effect on business decisions, which can lead to loss in revenue, a negative business impact, and more.

Before a report can be created, data must be prepared. Data preparation is the process of profiling, cleaning, and transforming your data to get it ready to model and visualize.

Data preparation is the process of taking raw data and turning it into information that is trusted and understandable. It involves, among other things, ensuring the integrity of the data, correcting wrong or inaccurate data, identifying missing data, converting data from one structure to another or from one type to another, or even a task as simple as making data more readable.

Data preparation also involves understanding *how* you're going to get and connect to the data and the performance implications of the decisions. When connecting to data, you need to make decisions to ensure that models and reports meet, and perform to, acknowledged requirements and expectations.

Privacy and security assurances are also important. These assurances can include anonymizing data to avoid oversharing or preventing people from seeing personally identifiable information when it isn't needed. Alternatively, helping to ensure privacy and security can involve removing that data completely if it doesn't fit in with the story that you're trying to shape.

Data preparation can often be a lengthy process. Data analysts follow a series of steps and methods to prepare data for placement into a proper context and state that eliminate poor data quality and allow it to be turned into valuable insights.

## Model

When the data is in a proper state, it's ready to be modeled. Data modeling is the process of determining how your tables are related to each other. This process is done by defining and creating relationships between the tables. From that point, you can enhance the model by defining metrics and adding custom calculations to enrich your data.

Creating an effective and proper data model is a critical step in helping organizations understand and gain valuable insights into the data. An effective data model makes reports more accurate, allows the data to be explored faster and more efficient, decreases time for the report writing process, and simplifies future report maintenance.

The model is another critical component that has a direct effect on the performance of your report and overall data analysis. A poorly designed model can have a drastically negative impact on the general accuracy and performance of your report. Conversely, a well-designed model with well-prepared data will ensure a properly efficient and trusted report. This notion is more prevalent when you are working with data at scale.

From a Power BI perspective, if your report is performing slowly, or your refreshes are taking a long time, you will likely need to revisit the data preparation and modeling tasks to optimize your report.

The process of preparing data and modeling data is an iterative process. Data preparation is the first task in data analysis. Understanding and preparing your data before you model it will make the modeling step much easier.

## Visualize

The visualization task is where you get to bring your data to life. The ultimate goal of the visualize task is to solve business problems. A well-designed report should tell a compelling story about that data, which will enable business decision makers to quickly gain needed insights. By using appropriate visualizations and interactions, you can provide an effective report that guides the reader through the content quickly and efficiently, therefore allowing the reader to follow a narrative into the data.

The reports that are created during the visualization task help businesses and decision makers understand what that data means so that accurate and vital decisions can be made. Reports drive the overall actions, decisions, and behaviors of an organization that is trusting and relying on the information that is discovered in the data.

The business might communicate that they need all data points on a given report to help them make decisions. As a data analyst, you should take the time to fully understand the problem that the business is trying to solve. Determine whether all their data points are necessary because too much data can make detecting key points difficult. Having a small and concise data story can help find insights quickly.

With the built-in AI capabilities in Power BI, data analysts can build powerful reports, without writing any code, that enable users to get insights and answers and find actionable objectives. The AI capabilities in Power BI, such as the built-in AI visuals, enable the discovering of data by asking questions, using the Quick Insights feature, or creating machine learning models directly within Power BI.

An important aspect of visualizing data is designing and creating reports for accessibility. As you build reports, it is important to think about people who will be accessing and reading the reports. Reports should be designed with accessibility in mind from the outset so that no special modifications are needed in the future.

Many components of your report will help with storytelling. From a color scheme that is complementary and accessible, to fonts and sizing, to picking the right visuals for what is being displayed, they all come together to tell that story.

# Analyze

The analyze task is the important step of understanding and interpreting the information that is displayed on the report. In your role as a data analyst, you should understand the analytical capabilities of Power BI and use those capabilities to find insights, identify patterns and trends, predict outcomes, and then communicate those insights in a way that everyone can understand.

Advanced analytics enables businesses and organizations to ultimately drive better decisions throughout the business and create actionable insights and meaningful results. With advanced analytics, organizations can drill into the data to predict future patterns and trends, identify activities and behaviors, and enable businesses to ask the appropriate questions about their data.

Previously, analyzing data was a difficult and intricate process that was typically performed by data engineers or data scientists. Today, Power BI makes data analysis accessible, which simplifies the data analysis process. Users can quickly gain insights into their data by using visuals and metrics directly from their desktop and then publish those insights to dashboards so that others can find needed information.

This feature is another area where AI integrations within Power BI can take your analysis to the next level. Integrations with Azure machine learning, cognitive services, and built-in AI visuals will help to enrich your data and analysis.

# Manage

Power BI consists of many components, including reports, dashboards, workspaces, datasets, and more. As a data analyst, you are responsible for the management of these Power BI assets, overseeing the sharing and distribution of items, such as reports and dashboards, and ensuring the security of Power BI assets.

Apps can be a valuable distribution method for your content and allow easier management for large audiences. This feature also allows you to have custom navigation experiences and link to other assets within your organization to complement your reports.

The management of your content helps to foster collaboration between teams and individuals. Sharing and discovery of your content is important for the right people to get the answers that they need. It is also important to help ensure that items are secure. You want to make sure that the right people have access and that you are not leaking data past the correct stakeholders.

Proper management can also help reduce data silos within your organization. Data duplication can make managing and introducing data latency difficult when resources are overused. Power BI

helps reduce data silos with the use of shared datasets, and it allows you to reuse data that you have prepared and modeled. For key business data, endorsing a dataset as certified can help to ensure trust in that data.

The management of Power BI assets helps reduce the duplication of efforts and helps ensure security of the data.

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## Next unit: Check your knowledge

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