✓ 100 XP ▶

Review tasks and tools for data visualization and reporting

3 minutes

Data analysts are responsible for understanding what data actually means. A skilled data analyst will explore the data and use it to determine trends, issues, and gain other insights that might be of benefit to the company.

A large part of the data analyst role is concerned with communication and visualization. Data visualization is key to presenting large amounts of information in ways that are universally understandable or easy to interpret and spot patterns, trends, and correlations. These representations include charts, graphs, infographics, and other pictorial diagrams. Data visualization analysts use visualization tools and software to communicate information in these ways, for clients or for their own company. A good data analyst requires experience and skills in reporting tools such as Microsoft Power BI and SQL Server Reporting Services.

Data Analyst tasks and responsibilities

The primary functions of a data analyst usually include the following:

- Making large or complex data more accessible, understandable, and usable.
- Creating charts and graphs, histograms, geographical maps, and other visual models that help to explain the meaning of large volumes of data, and isolate areas of interest.
- Transforming, improving, and integrating data from many sources, depending on the business requirements.
- Combining the data result sets across multiple sources. For example, combining sales data and weather data provides a useful insight into how weather influenced sales of certain products such as ice creams.
- Finding hidden patterns using data.
- Delivering information in a useful and appealing way to users by creating rich graphical dashboards and reports.

Common data visualization tools

Traditionally, many data analysts used Microsoft Office Apps such as Microsoft Excel for creating rich visual reports. Many analysts now use Microsoft Power BI, a powerful visualization platform, to create rich, graphical dashboards and reports over data that can vary dynamically.

Power BI is a collection of software services, apps, and connectors that work together to turn your unrelated sources of data into coherent, visually immersive, and interactive insights. Your data might be held somewhere local such as an Excel spreadsheet, or in a collection of cloud-based and on-premises databases, or some other set of data sources. Power BI lets you easily connect to your data sources, discover what's important in that data, and share your findings with others in the organization.

The image below shows an example of a dashboard created using Power BI. In this example, the analyst is using Power BI to examine retail sales data for items sold across multiple stores and districts. The metrics compare this year's performance to last year's for sales, units, gross margin, and variance, as well as new-store analysis.
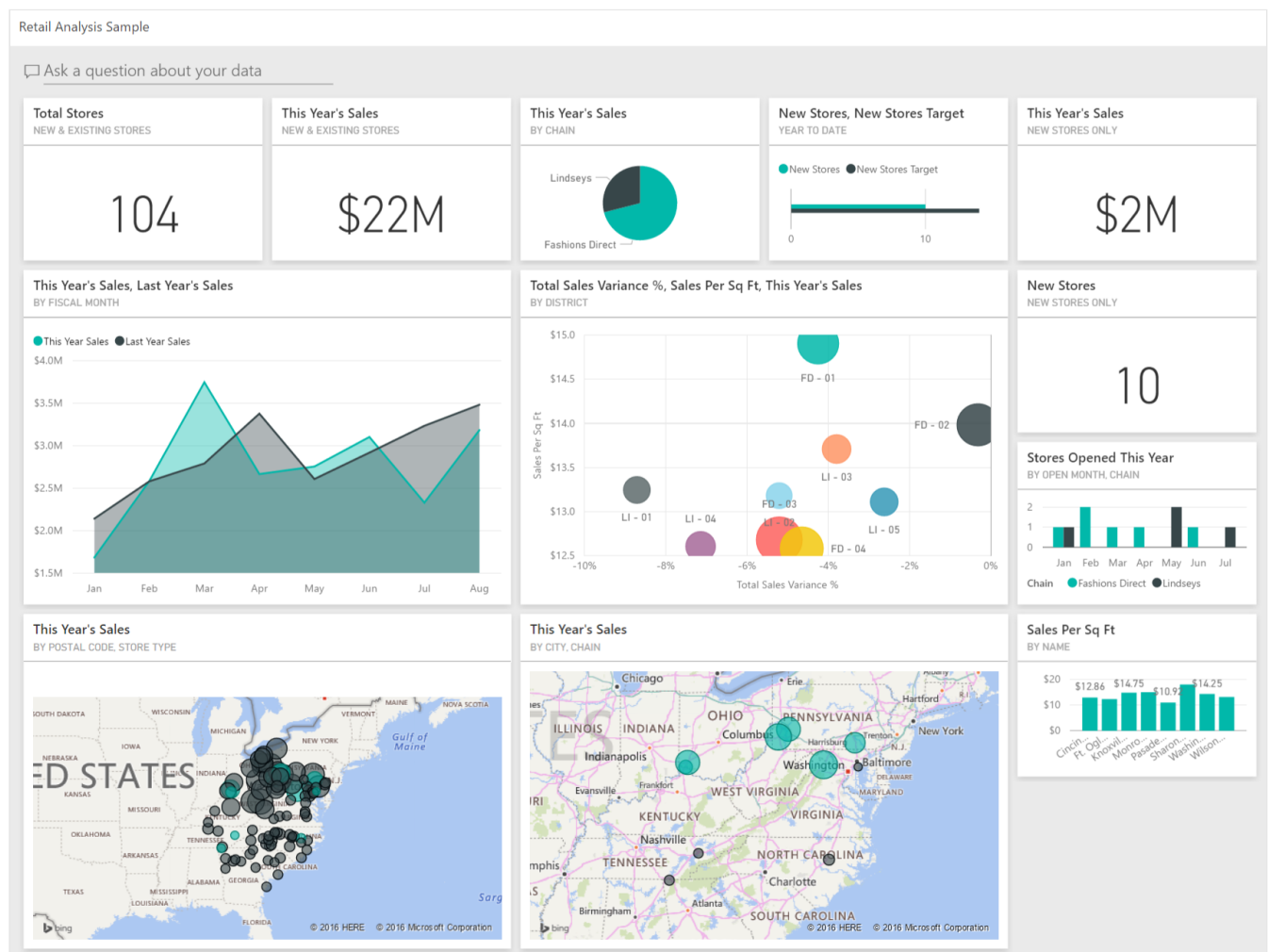
Next unit: Knowledge check

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