# Summary and Highlights

In this lesson, you have learned the following information:

A modern data ecosystem includes a network of interconnected and continually evolving entities that include:

* Data that is available in a host of different formats, structure, and sources.
* Enterprise Data Environment in which raw data is staged so it can be organized, cleaned, and optimized for use by end-users.
* End-users such as business stakeholders, analysts, and programmers who consume data for various purposes.

Emerging technologies such as Cloud Computing, Machine Learning, and Big Data, are continually reshaping the data ecosystem and the possibilities it offers. Data Engineers, Data Analysts, Data Scientists, Business Analysts, and Business Intelligence Analysts, all play a vital role in the ecosystem for deriving insights and business results from data.

Based on the goals and outcomes that need to be achieved, there are four primary types of Data Analysis:

* Descriptive Analytics, that helps decode “What happened.”
* Diagnostic Analytics, that helps us understand “Why it happened.”
* Predictive Analytics, that analyzes historical data and trends to suggest “What will happen next.”
* Prescriptive Analytics, that prescribes “What should be done next.”

The Data Analysis process involves:

* Developing an understanding of the problem and the desired outcome.
* Setting a clear metric for evaluating outcomes.
* Gathering, cleaning, analyzing, and mining data to interpret results.
* Communicating the findings in ways that impact decision-making.

In this lesson, you have learned the following information:

The role of a Data Analyst spans across:

* Acquiring data that best serves the use case.
* Preparing and analyzing data to understand what it represents.
* Interpreting and effectively communicating the message to stakeholders who need to act on the findings.
* Ensuring that the process is documented for future reference and repeatability.

In order to play this role successfully, Data Analysts need a mix of technical, functional, and soft skills.

* Technical Skills include varying levels of proficiency in using spreadsheets, statistical tools, visualization tools, programming and querying languages, and the ability to work with different types of data repositories and big data platforms.
* An understanding of Statistics, Analytical techniques, problem-solving, the ability to probe a situation from multiple perspectives, data visualization, and project management skills – all of which come under Functional Skills a Data Analyst needs in order to play an effective role.
* Soft Skills include the ability to work collaboratively, communicate effectively, tell a compelling story with data, and garner support and buy-in from stakeholders. Curiosity to explore different pathways and intuition that helps to give a sense of the future based on past experiences are also essential skills for being a good Data Analyst.