SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)
COIMBATORE – 35

DEPARTMENT OF COMPUTER SIENCE AND ENGINEERING (UG & PG)

Subject Code & Name: 19ITE305-Big Data& Analytics

Big Data:

- Big data analytics refers to the systematic processing and analysis of large amounts of data and complex data sets, known as big data, to extract valuable insights.
- Big data analytics allows for the uncovering of trends, patterns and correlations in large amounts of raw data to help analysts make data-informed decisions.
- This process allows organizations to leverage the exponentially growing data generated from diverse sources, including internet-of-things (IoT) sensors, social media, financial transactions and smart devices

Difference between Traditional data and Big data:

The main difference between big data analytics and traditional data analytics is the type of data handled and the tools used to analyze it. **Traditional analytics** deals with structured data, typically stored in relational databases. This type of database helps ensure that data is well-organized and easy for a computer to understand. Traditional data analytics relies on statistical methods and tools like structured query language (SQL) for querying databases.

Big data analytics involves massive amounts of data in various formats, including structured, semi-structured and unstructured data. The complexity of this data requires more sophisticated analysis techniques. Big data analytics employs advanced techniques like machine learning and data mining to extract information from complex data sets.

Four main data analysis methods:

Descriptive analytics

The "what happened" stage of data analysis. Here, the focus is on summarizing and describing past data to

understand its basic characteristics.

Diagnostic analytics

The “why it happened” stage. By delving deep into the data, diagnostic analysis identifies the root patterns and trends observed in descriptive analytics.

Predictive analytics

The “what will happen” stage. It uses historical data, statistical modeling and machine learning to forecast trends.

Prescriptive analytics

Describes the “what to do” stage, which goes beyond prediction to provide recommendations for optimizing future actions based on insights derived from all previous.