INTRODUCTION WEEK 2 NOTES

Definition

DATA ANALYSIS

Data analysis is a comprehensive process of cleaning, analyzing, interpreting, and visualizing data using various techniques and business intelligence tools. The comprehensive process help you discover relevant insights that lead to smarter and more effective decision-making.

DATA ANALYTICS

Data analytics refers to the whole process of data management: data collecting, storing, organizing, and analyzing. It includes the tools and techniques used to deep-dive into data, as well as those used to communicate the results.

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| DATA ANALYSIS | DATA ANALYTICS |
| Data analysis process turns raw data into useful statistics, information and explanations. | Data analytics process involves collecting, storing, organizing and analyzing data. |

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| METHOD OF DATA ANALYSIS | | |
| 1 | Text Analysis | The goal of text analysis is to transform natural spoken or written human language into machine-readable data.  Context: “opinion polarity” (positive, negative, neutral, etc.). |
| 2 | Data Mining | Data mining aka knowledge discovery in data (KDD) is the process of detecting anomalies, patterns, and relationships to predict outcomes.  Context: Applications of data mining include predicting how markets will behave, allowing businesses to [anticipate customer needs](https://monkeylearn.com/blog/customer-needs-analysis/) and be proactive |
| 3 | Statistical Analysis | Statistical analysis, used on its own, involves exploring and presenting huge amounts of quantitative data to detect trends and patterns.   * Descriptive statistics   Descriptive statistics data analysis describes, summarizes, and visualizes the basic features of data, through charts and reports.   * Inferential statistics   Inferential data analysis is used to draw conclusions about an entire population (whether a class of students or the entire population of a country), based on samples that accurately represent the population. |
| 4 | Diagnostic Analysis | Diagnostic analysis aka *root cause analysis*, aims to answer the question: *“Why did something happen?”* It’s an exploratory type of analysis that identifies anomalies and uncovers patterns and stories in your data. |
| 5 | Predictive Analysis | Predictive analysis uses historical data to make inferences about future events. |
| 6 | Prescriptive Analysis | Prescriptive analysis combines all the data and insights that you have and turns them into actionable insights. In a nutshell, it shows the best course of action to follow in a given scenario. |

Importance of Data Analysis

* [Predict Behavior](https://monkeylearn.com/data-analysis/#predict-behavior)
* [Enhance Productivity](https://monkeylearn.com/data-analysis/#productivity)
* [Make Data-driven Decisions](https://monkeylearn.com/data-analysis/#decisions)
* [Gain a Competitive Advantage](https://monkeylearn.com/data-analysis/#competitive-advantage)