DATA ANALYSIS

VISHAL A

Agenda

What is Data Analysis ?

Types of data analysis applications

Process of Data Analysis

What is data analysis ?

- Data analysis is a procedure of investigating, cleaning, transforming, and training of the data
- aim of finding some useful information, recommend conclusions and helps in decision making
- data analysis allows for the evaluation of data through analytical and logical reasoning to lead to some sort of outcome or conclusion in some context
- Data analytics is a subcomponent of data analysis that involvesthe use of technical
- tools and data analysis techniques.
- multi-faceted process that involves a number of steps, approaches, and diverse techniques.

Types of data analysis

Exploratory Data Analysis (EDA):

Confirmatory Data Analysis (CDA):

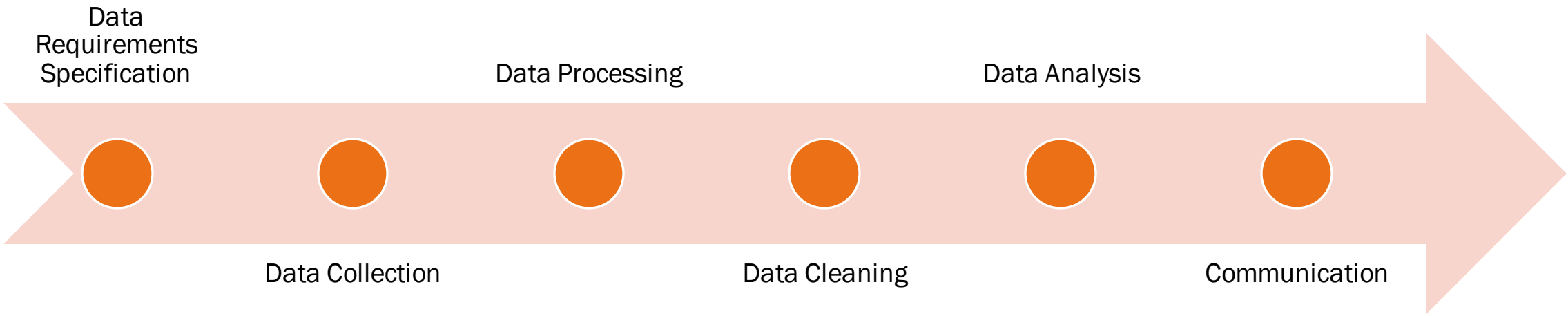
Continue

- Exploratory Data Analysis (EDA):
  - Exploratory Data Analysis refers to the critical process of performing initial investigations on data so as to discover patterns,to spot anomalies,to test hypothesis and to check assumptions with the help of summary statistics and graphical representations.
  - which aims to find patterns and relationships in data,

- Confirmatory Data Analysis (CDA):
  - CDA is the process used to evaluate evidence by challenging their assumptions about the data. This part of the process is where they work backward from their conclusions and weigh the merits of the results of their work.
  - It's like examining evidence and questioning witnesses in a trial, trying to determine the guilt or innocence of the defendant.which aims to find patterns and relationships in data,
  - which applies statistical techniques to determine whether hypotheses about a data set are true or false

EDA is often compared to detective work, while CDA is akin to the work of a judge or jury during a court trial

Process of data analysis



Data requirements

- The data is necessary as inputs to the analysis,
- The general type of entity upon which the data will be collected is referred to as an experimental unit
- Data may be numerical or categorical

Data collection

- Data is collected from a variety of sources.
- The data may also be collected from sensors in the environment

Data processing

- Data initially obtained must be processed or organised for analysis.
- For instance, these may involve placing data into rows and columns in a table format

Data cleaning

- Once processed and organised, the data may be incomplete, contain duplicates or contain errors.
- Data cleaning is the process of preventing and correcting these errors

Data Analysis

- Data that is processed, organized and cleaned would be ready for the analysis. Various data analysis techniques are available
- Data Visualization may also be used to examine the data in graphical format, to obtain additional insight regarding the messages within the data.

Communication

- Once the data is analyzed, it may be reported in many formats to the users of the analysis to support their requirements.
- The users may have feedback, which results in additional analysis. As such, much of the analytical cycle is iterative

THANK YOU