

Data Analysis



<https://www.import.io/post/business-data-analysis-what-how-why/>

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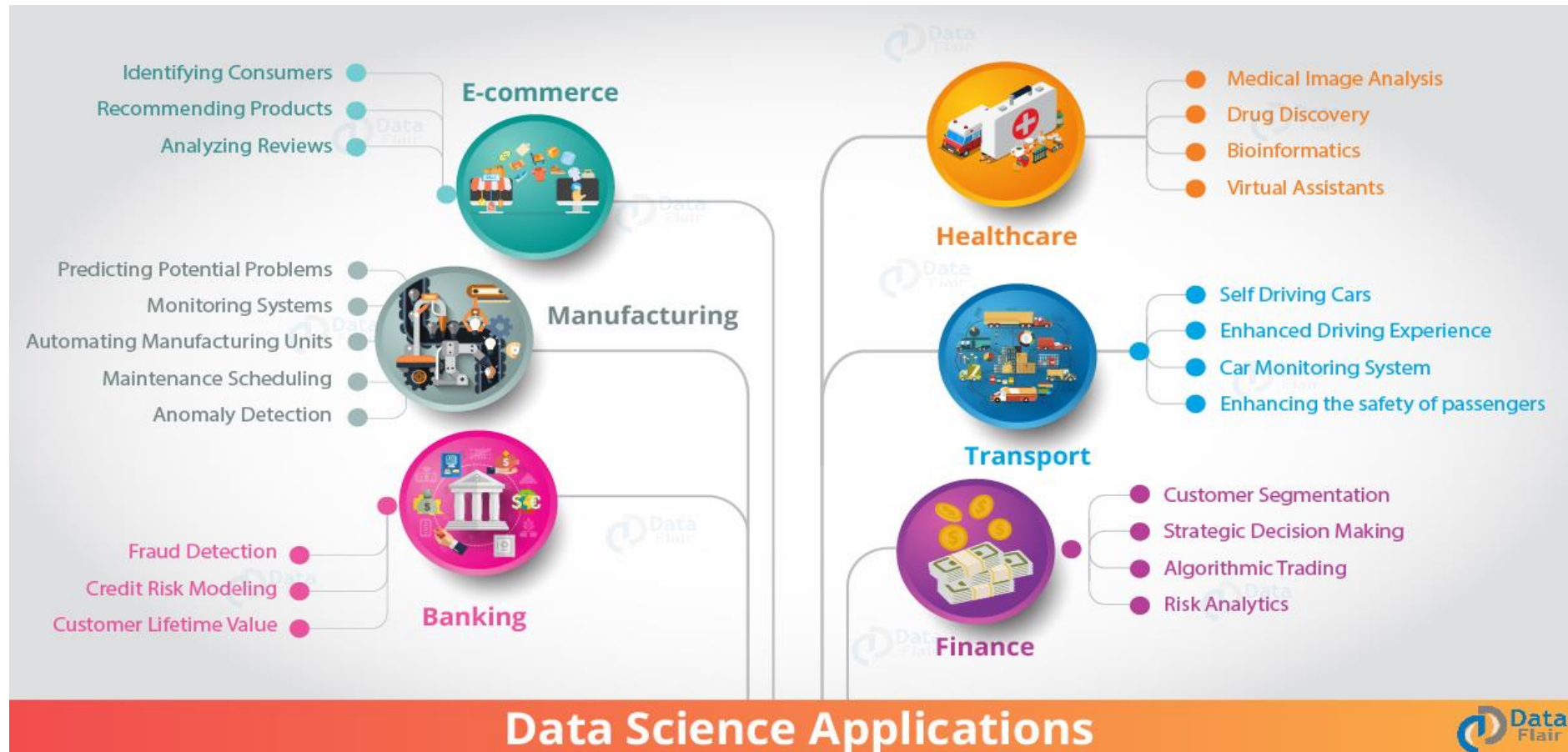
Topics to be covered

- Data Analysis Introduction
- Stages of Data Analytics
- Types of Data Analysis

What is Data Analysis ?

- The process of cleaning, analyzing, interpreting, and visualizing data to discover valuable insights that drive smarter and more effective business decisions
- It is the process of systematically applying statistical and/or logical techniques to describe and illustrate, condense and recap, and evaluate data

Some of the top applications for Data analysis:



<https://data-flair.training/blogs/data-science-applications/>

Data Analysis Tools

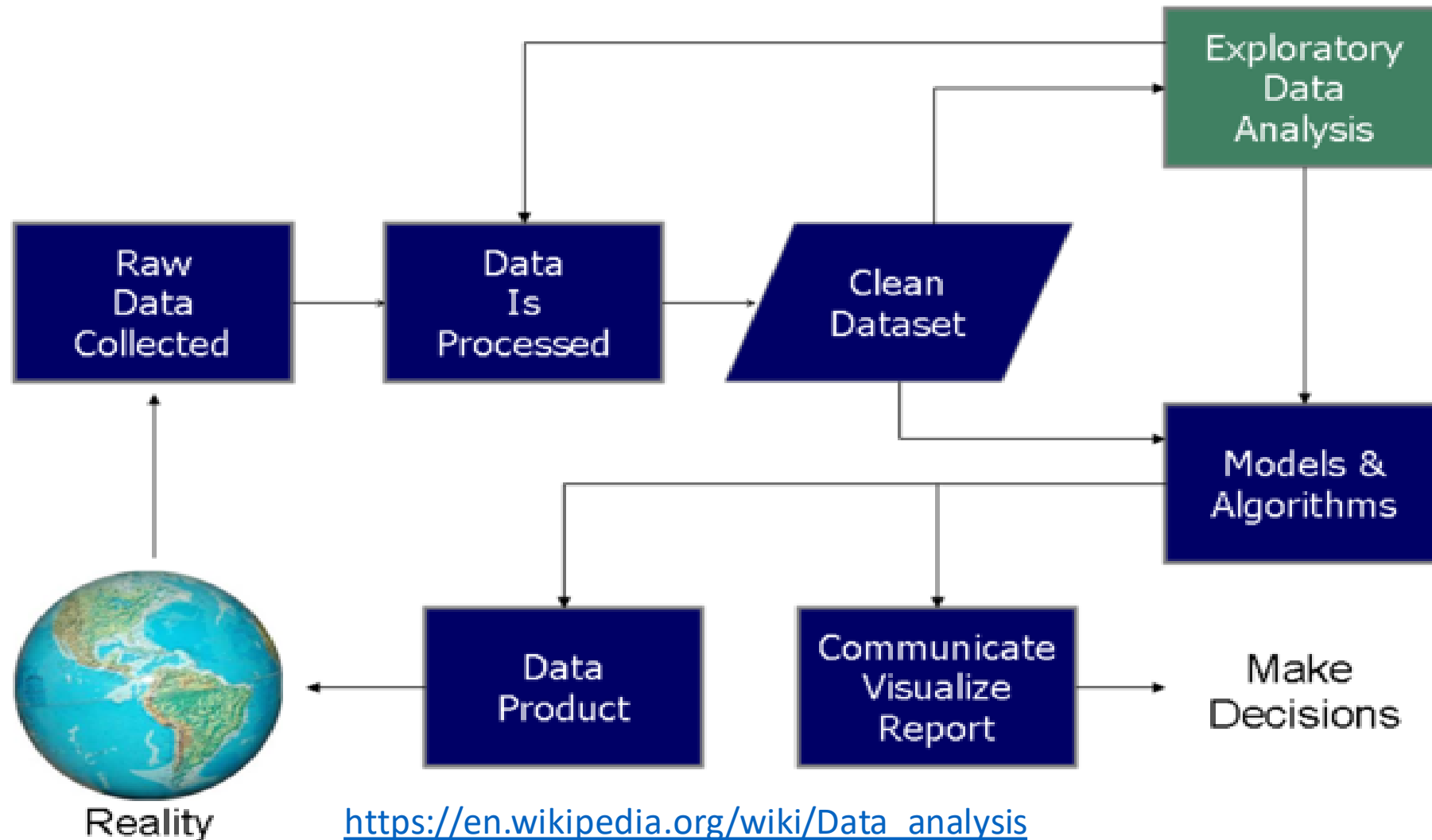
Many tools are available in the market, which make it easier for us :

- 1) To process and manipulate data
- 2) Analyze the relationships and correlations between data sets,
- 3) Helps to identify patterns and trends for interpretation



<https://www.guru99.com/what-is-data-analysis.html>

Data Science Process



https://en.wikipedia.org/wiki/Data_analysis

How to Analyze Data :

1. **Setting up Goals:** Setting clear objectives is the first step and this will determine the type of data we need to collect
2. **Collect Your Data:** Data is everywhere, and we need to collect it all in one place for our analysis
3. **Clean Your Data:** Before analysing, the data needs to be cleansed to get rid of noise like punctuation marks, special characters etc.
4. **Integrate Data Analysis Tools, Analyze Your Data:** Set up your favourite Data Analysis Tools and get ready to analyse the data with the required algorithm
5. **Visualize Your Data:** Data is shown graphically so that it will be easier to understand and process.
6. **Draw Conclusions:** It's finally time to interpret your results and gain actionable insights

Types of Data Analysis

- Descriptive Analysis: It tries to understand what happened in the past by analyzing the stored data. Addresses questions such as:
 - i. what happened?
 - ii. where is the problem?
 - iii. what is the frequency of this problem?
- Predictive Analysis: It tries to understand what could happen in the future using past data analysis. Addresses questions such as:
 - i. what would happen next?
 - ii. what would be the outcome if the trends continue?
 - iii. what actions need to be taken?

BASIS FOR COMPARISON	DESCRIPTIVE ANALYSIS	PREDICTIVE ANALYSIS
Basic	It identifies, what happened in the past by analyzing stored data	It describes, what can happen in the future with the help past data analysis.
Require	Data aggregation and data mining	Statistics and forecasting methods
Preciseness	Provides accurate data	Produces results does not ensure accuracy.
Type of approach	Reactive	Proactive
Practical analysis methods	Standard reporting, query/drill down and ad-hoc reporting.	Predictive modelling, forecasting, simulation and alerts.
https://techdifferences.com/difference-between-descriptive-and-predictive-data-mining.html		

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THANK YOU