



# Business Analytics

Presented by Hasan Ali





# Instructor



**Hasan** is a **Senior Data Scientist** and **Deep Learning Researcher** with 5+ years of experience. He has worked with various fortune 500 companies like Indian Oil, GAIL (Gas Authority of India Ltd.) and startups like Doorstead ( Silicon Valley ). His areas of interest and research include image processing, signal processing, computer vision, image classification & segmentation, deep learning architectures and GAN's.

He is a Data Science instructor as well and helps professionals/students make a transformation into Data Science/ Artificial Intelligence. He has taught companies like Barclays, SHELL, PDO Oman etc.



# Introduction



**Analytics** is the use of data, information technology, statistical analysis, quantitative methods, and mathematical or computer-based models to help managers gain improved insight about their business operations and make better, fact-based decisions.



# Scope of Business Analytics

- ▣ **Descriptive analytics**
  - Use data to understand past and present
- ▣ **Predictive analytics**
  - Analyzes past performance
- ▣ **Prescriptive analytics**
  - Use optimization techniques





# Importance ?

- There is a strong relationship of BA with:
  - Profitability of businesses
  - Revenue of businesses
  - Shareholder return
- BA enhances understanding of data
- BA is vital for businesses to remain competitive
- BA enables creation of informative reports





# Example 1

- Most department stores clear seasonal inventory by reducing prices.
- The question is:
  - When to reduce the price and by how much?
- Descriptive analytics: examine historical data for similar products (prices, units sold, advertising, ...)
- Predictive analytics: predict sales based on price
- Prescriptive analytics: find the best sets of pricing and advertising to maximize sales revenue.





# Example 2

## Harrah's Entertainment

- Harrah's owns numerous hotels and casinos
- Uses analytics to:
  - Forecast demand for rooms
  - Segment customers by gaming activities
- Uses prescriptive models to:
  - set room rates
  - allocate rooms
  - offer perks and rewards to customers



# Data for BA

## ■ DATA

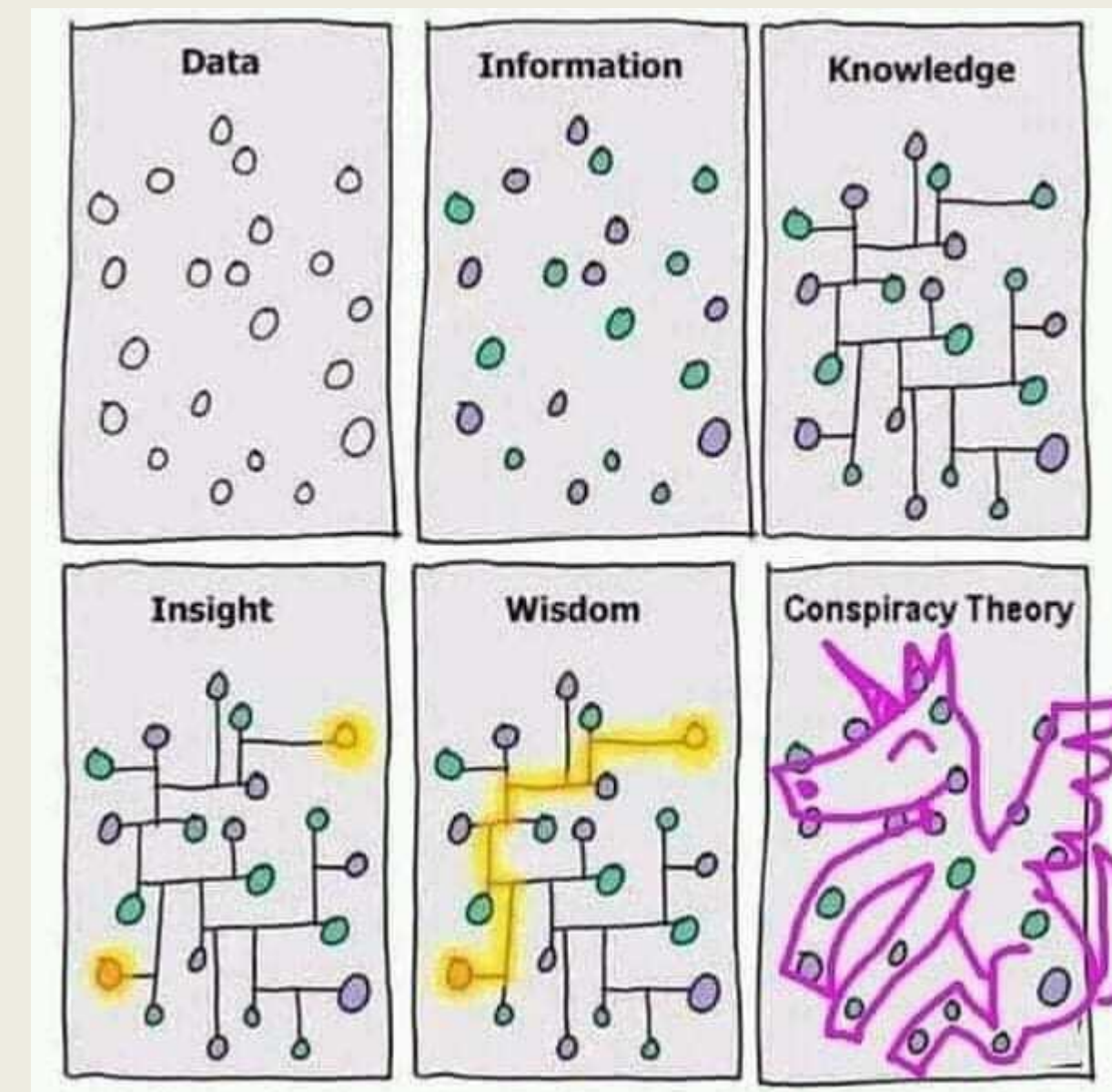
- Data are observations or measurements (unprocessed or processed) represented as text, numbers, or multimedia.

## ■ DATABASE

- organized collection of data stored as multiple datasets. Those datasets are generally stored and accessed electronically from a computer system that allows the data to be easily accessed, manipulated, and updated.

## ■ INFORMATION

- Comes from analyzing data







# BI vs BA

## What is **Business Intelligence**?

- Infrastructure that helps in the process of collecting, storing, and analyzing data from business operations.
- BI provides comprehensive business metrics, in near-real-time, to support better decision making. You can create performance benchmarks, spot market trends, increase compliance, and improve almost every aspect of your business with better business intelligence.

## What is **Business Analytics**?

- A subset of BI, [business analytics \(BA\)](#) refers to the process of taking your company's raw data and turning it into useful information, including identifying trends, predicting outcomes, and more. Some common methodologies in business analytics are:
  - Data mining: [sorting through large amounts of data to identify patterns and trends](#)
  - Aggregation: the process of gathering and organizing data prior to analysis
  - Forecasting: analyzing historical data estimate future outcomes
  - Predictive modeling: [extracting information from data sets to identify patterns and estimate future trends](#)
  - Data visualization: creating visual representations of data analysis, such as charts, tables, or graphs



# BI vs BA

#1. Definition		#2. Usage		#3. Ease of Operations	
<b>Business Intelligence</b>  Analyses past and present to drive current business needs.	<b>Business Analytics</b>  Analyses past data to drive current business.	<b>Business Intelligence</b>  To run current business operations.	<b>Business Analytics</b>  To change business operations and improve productivity.	<b>Business Intelligence</b>  For current business operations.	<b>Business Analytics</b>  For future business operations.
#4. Tools		#5. Applications		#6. Field	
<b>Business Intelligence</b>  SAP Business Objects, QlikSense, TIBCO, PowerBI etc.	<b>Business Analytics</b>  Word processing, Google docs, MS Visio, MS Office Tools etc.	<b>Business Intelligence</b>  Applies to all large scale companies to run current business operations.	<b>Business Analytics</b>  Applies to companies where future growth and productivity as its goal.	<b>Business Intelligence</b>  Comes under Business Analytics.	<b>Business Analytics</b>  Contains Data warehouse, information management etc.



# Decision Making

- BA represents only a portion of the overall problem solving and decision making process.
- 6 steps in the problem solving process:
  1. Recognizing the problem
  2. Defining the problem
  3. Structuring the problem
  4. Analyzing the problem
  5. Interpreting results and making a decision
  6. Implementing the solution





Q & A

Thank You

