iNeuron

Tableau

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Course Overview

- Introduction
- About Tableau
- BI Tool and Comparison
- Pricing
- Tableau Desktop Tutorial
- Tableau Integration
- Projects
- Interview Questions

Broad Course View

- Tableau – Introduction
- Basic Data Visualization – Summary Tables, Bar Chart , Pie Chart, Scatterplot etc.
- Advance Data Viz – Dual Axis Chart, Customizing colours /labels/shapes etc.
- Data Management - Filters, Grouping, Hierarchies, Alias etc.
- Calculation – Formulas, Quick Table Calculations, LOD Calculations etc.
- Working with multiple data source – Joining, Blending etc.
- Advance Features – Parameters, Sets, Context Filters, Actions.
- Predictive Modelling- Regression/Time Series.
- Sharing your work – Dashboard, Stories, Tableau Server, User Security, Scheduling etc.

Business Intelligence

BI(Business Intelligence) is process of converting raw data into meaningful information. A set of process, architecture and technologies that drives profitable business actions.

BI(Business Intelligence) is a methods of collecting, storing and analysing data from business operations or activities to optimize performance.

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Methodologies & Tools - BI

- Data Visualization
- Data Mining
- Reporting
- Time-series Analysis
- On-line Analytical Processing (OLAP)
- Statistical Analysis

- Tableau
- Power BI
- Qlik Sense
- SAP BusinessObjects Business Intelligence (BI) Platform
- MicroStrategy Analytics
- Entrinsik Informer

Why Visualization ….?

3 Simple Reasons Why You Should First Visualize Data Before Doing Anything Else

- **Understand the Missingness Pattern** - Real-world data have the missingness problem for various reasons. Subjects refuse to answer specific questions due to privacy concerns like race and income. Subjects accidentally enter the incorrect data (e.g., missing a digit in the phone number).

- **Identify Outliers** - One early step in data pre-processing is to handle outliers, which are data values that are distinctly different from other data values in the dataset. They can happen at least for two reasons. First, the data are entered by mistake. For example, missing a decimal can make the value 100 times larger (10.24 vs. 1024).

- **Generate Meaningful Hypotheses** – As machine learning setting, it's always necessary to form some hypotheses and develop some meaningful models with the training dataset, which we hope hold when we run the models in the test dataset. Similar to the identification of outliers, specific data structures of given datasets will determine how we visualize the data before doing any testing. For example, if you're trying to identify a possible linear relationship between two continuous variables, you can start with the scatter plots, as shown in the last section.

Why Tableau…?

- First ultimate skill for Data Science
- User Friendly
- Apply to any Business
- Fast and Easy
- Even with Excel, Tableau will be your best partner
- No Coding Skills Required
- Community is Huge
- Leverage the Power of Data
- Makes easy to make your data reports to explain

Traditional Visualisation(Excel) vs Tableau

Organise, format and Calculate data

Store the data and manipulations

Manipulations and descriptive statistics

Quick on-off reports

Knowledge of VB and macros

Represents and visualize the insights from data

Data Representation

Quick interactive visualizations, user friendly

Self service functions that would pull the insights of the data

No coding skills Required

Tableau Intro

Excel

Row Labels	Sum of Population	Average of Literacy Rate
⊞ Andhra Pradesh	840000	172.6
⊞ Assam	580000	63.5
⊞ Bihar	940000	101.5
⊞ Chandigarh	1030000	42.4
⊞ Chhattisgarh	930000	102.8
⊞ Gujarat	1730000	87.93333333
⊞ Haryana	690000	84.9
⊞ Jammu and Kashmir	850000	258
⊞ Jharkhand	1570000	69.95
⊞ Karnataka	1300000	131.7
⊞ Madhya Pradesh	2480000	95.6
⊞ Maharashtra	3830000	199.8142857
⊞ Punjab	1140000	70.35
⊞ Rajasthan	1860000	106.0333333
⊞ Tamil Nadu	1870000	95.9
⊞ Telangana	1030000	54
⊞ Uttar Pradesh	5590000	72.42222222
⊞ West Bengal	1340000	38.3
Grand Total	29600000	108.572093

Tableau

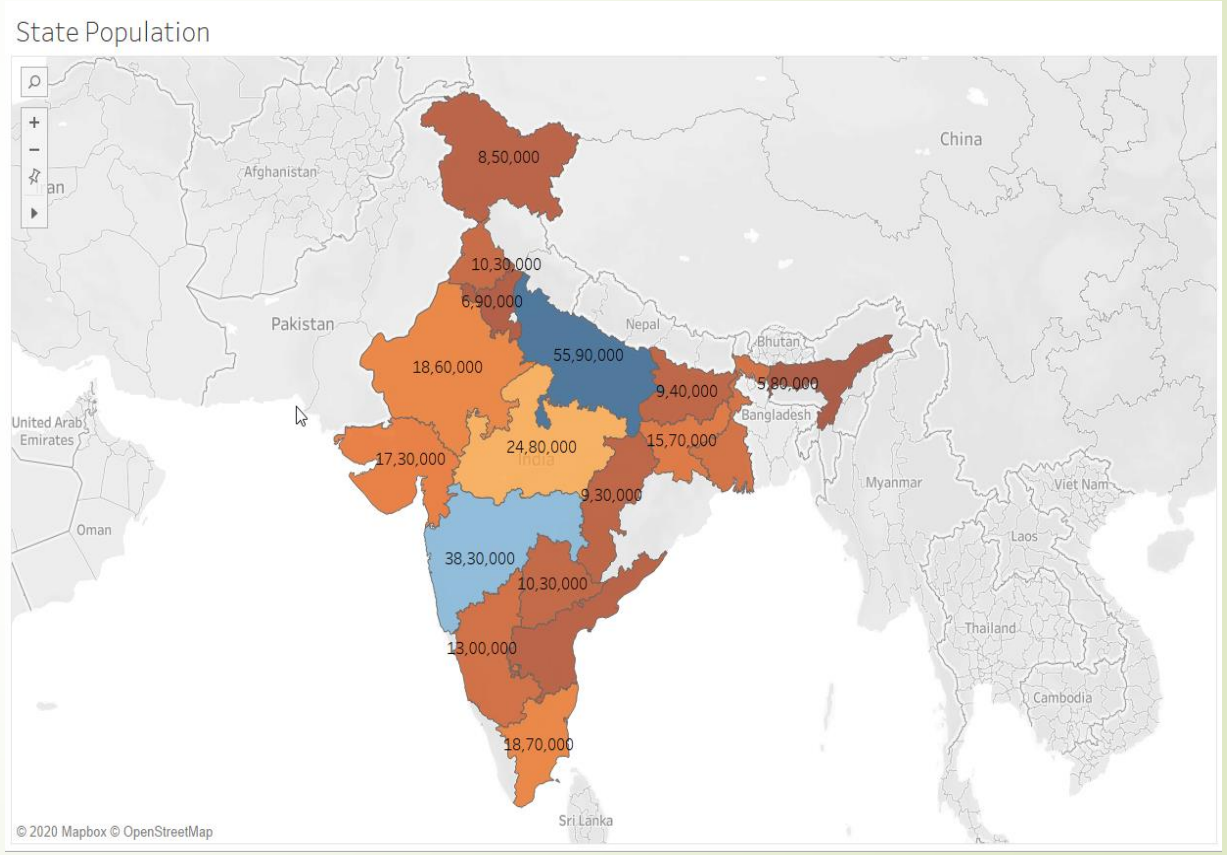


Tableau vs Excel

- Use **Demographic_Details** dataset
- Show total Population
- Avg. Literacy rate
- Allow drill down state by cities

Why Tableau?

Easy Powerful Fast

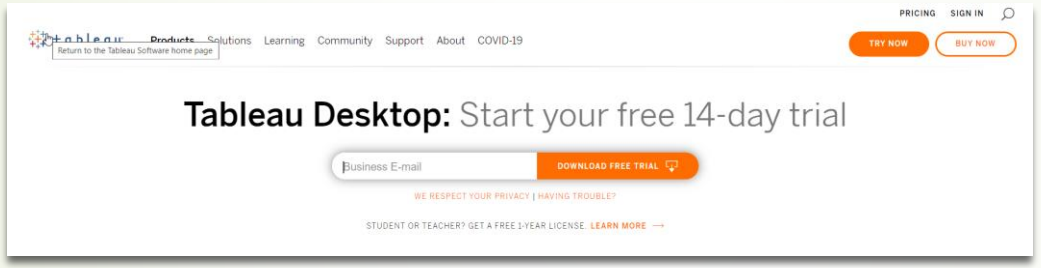
Future Impact of BI

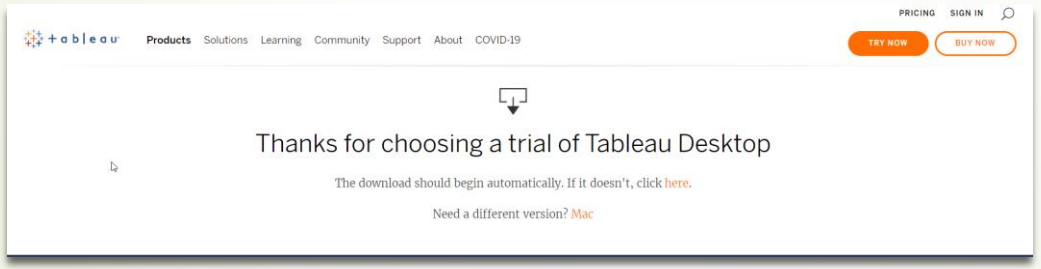
- **Collaborative Business Intelligence** – Facilitating team work
- **Increasingly Integrated BI Systems** – Third party systems will be increasingly intertwined with BI, simplifying data processing.
- **Machine Learning** – AI analyzes past data to provide insight and forecasting.
- **Data "Proactivity"** – Will respond automatically to inquires and bring relevant data to users
- **Network Advancements** – Tech infrastructure will expand to store large amount of data to support BI systems.
- **Data Driven Culture** – Adopting data driven culture by giving all employee to incorporate BI into everyday process.

Tableau Installation

- Tableau Desktop Installation - https://www.tableau.com/products/desktop

  - Click on " **TRY IT FOR FREE**"





- Trick - https://www.tableau.com/support/releases

Visual Segment

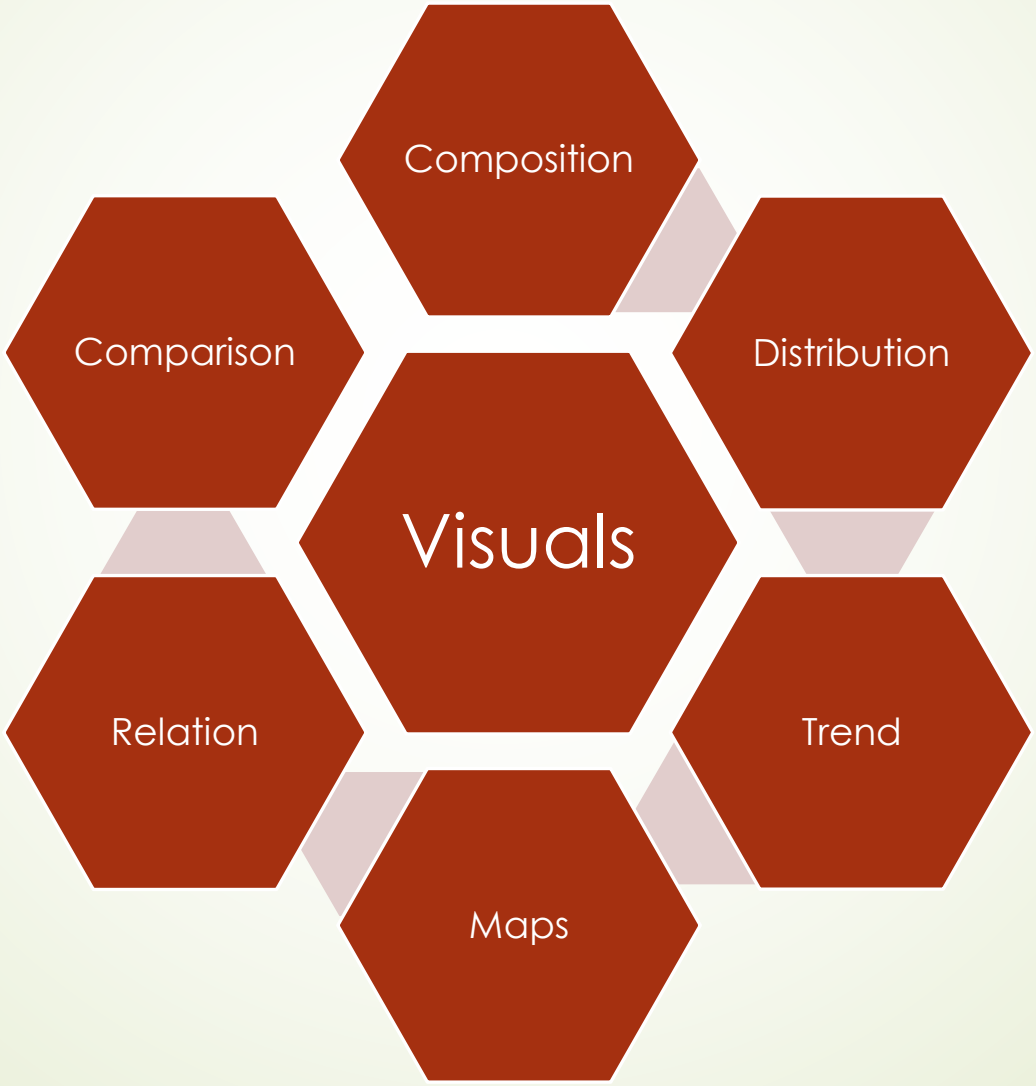


Tableau Architecture

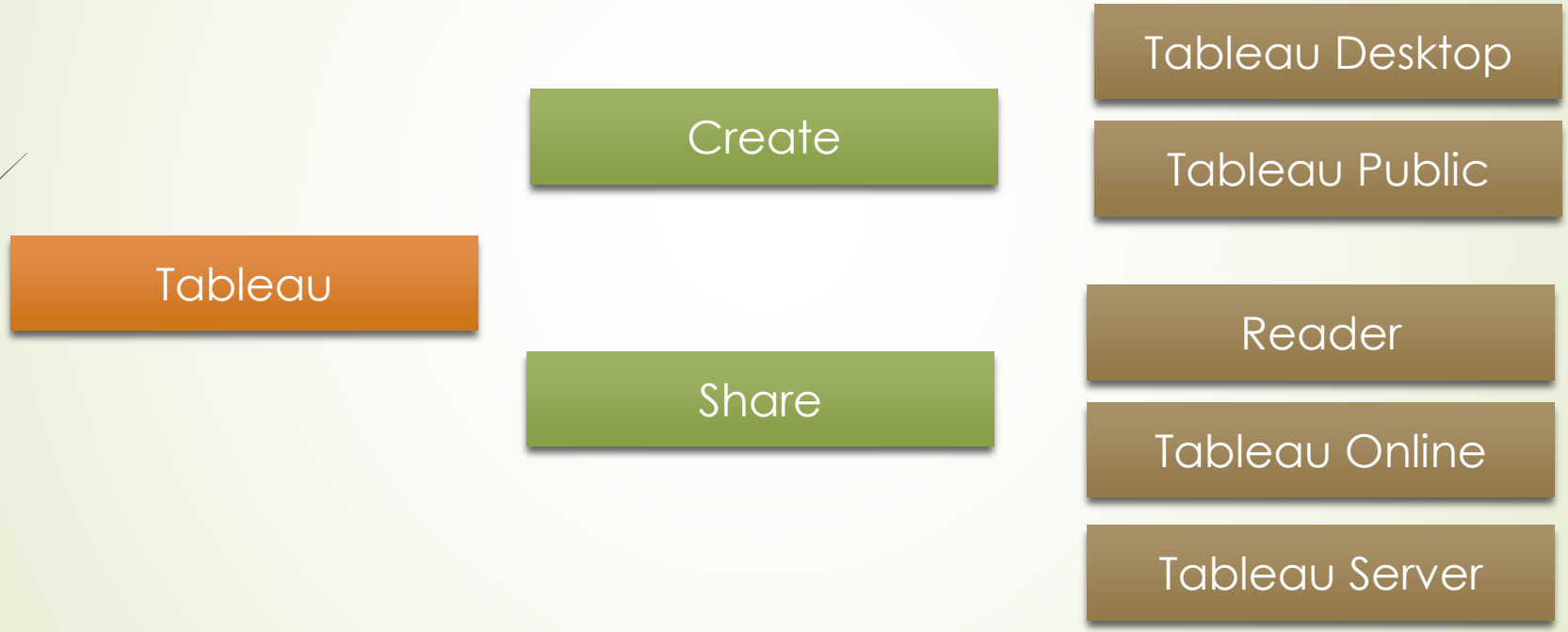
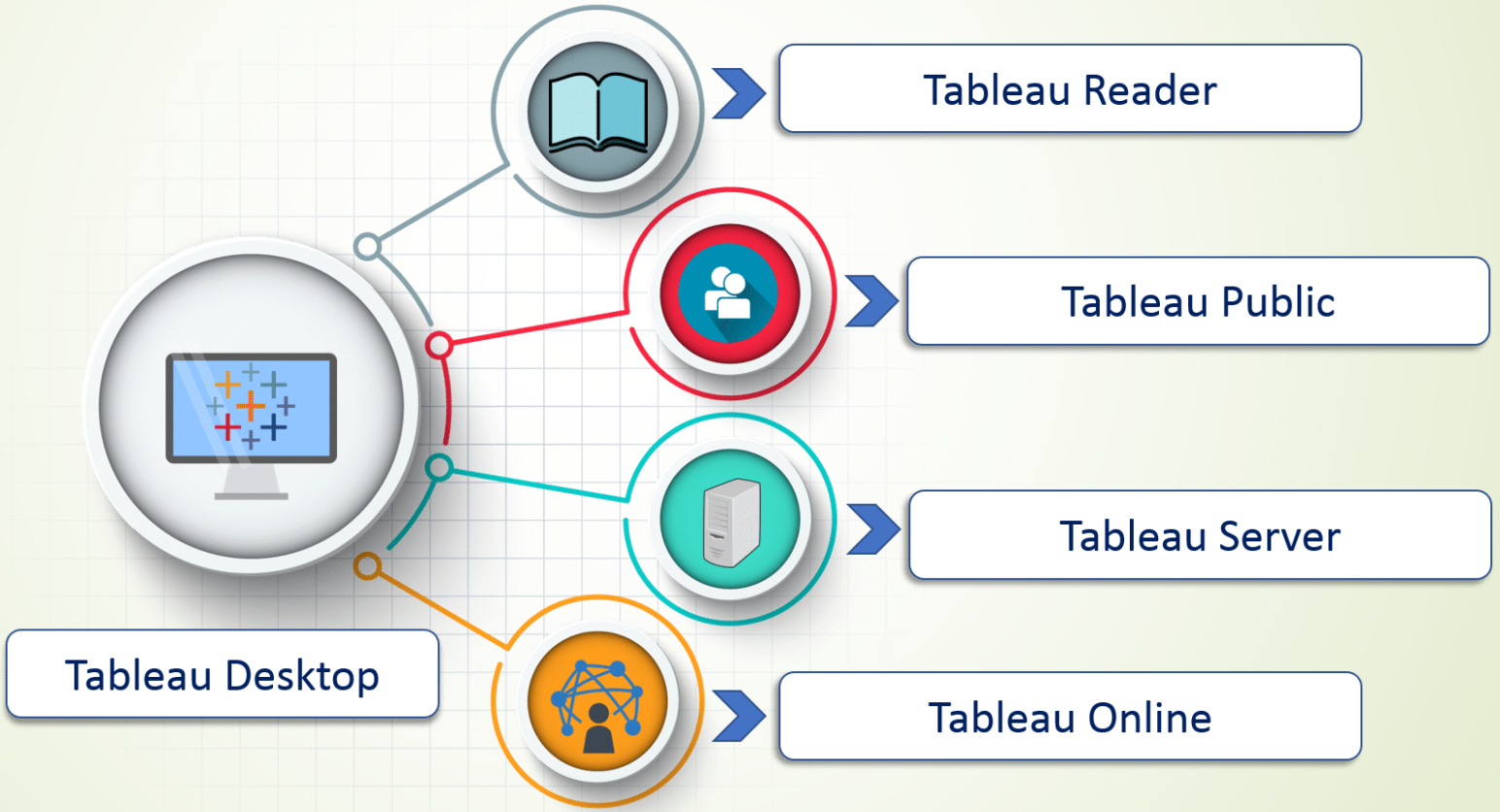
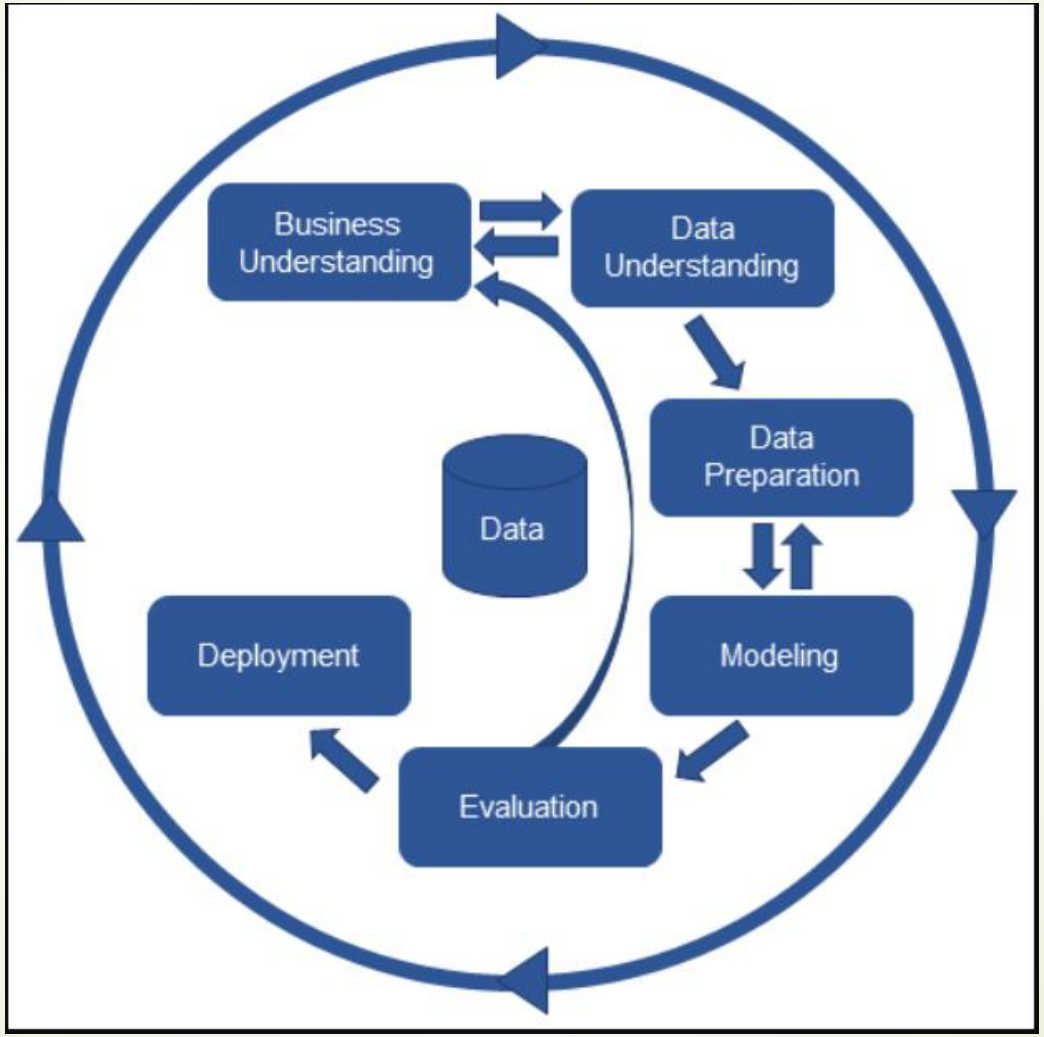


Tableau Products



Process Flow – BI Project



BI Tool and Comparison

		
ETL (Extract, Transform, Load	☺	☺
Forecasting	☺	☺
Multiple Categories Comparison	☺	☹
Offline Iteration	☺	☹
Missing Outliers	☹	☺

BI Tool and Comparison

OLAP (Online Analytical Processing)

ETL (Extract, Transform, Load

Data Warehousing

Tableau Pricing

- **Individuals**
  - $70 /User/Month billed annually

- **Teams & Organisations**
  - Deploy with Tableau Server : $70,$35,$12
  - Deploy with Tableau online : $70,$42,$15

Tableau Desktop

- Data Visualization Intro
- Visual Analytics
- Visual Analytics - 1
- Visual Analytics - 2
- Calculation
- LOD Problem Set
- Dashboard and Stories
- Advance Operations
- Advance Analysis
- Advance Analysis & Conclusion

Tableau - Intro

- Tableau – Introduction
- Why Tableau?
- Importing Data
- Understanding Tableau Interface
- Live vs Extract
- Measures vs Dimensions
- Understanding Shelves, Pills, Summary Tables
- Creating Basic Chart
- Changing Aggregations
- Changing Format
- Saving your work

Tableau Intro

What is Tableau? – Tableau is a BI (Business Intelligence) tool.

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Tableau – Data Types

Data type icons in Tableau

Icon	Data type
Abc	Text (string) values
	Date values
	Date & Time values
#	Numerical values
T|F	Boolean values (relational only)
	Geographic values (used with maps)
	Cluster Group (used with Find Clusters in Data)