# Learn Something Every Day

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# Implementation of DS

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# Data Science in Search Engine

# Data Science in Finance

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# Data Science in Transport

# Data Science in E-Commerce

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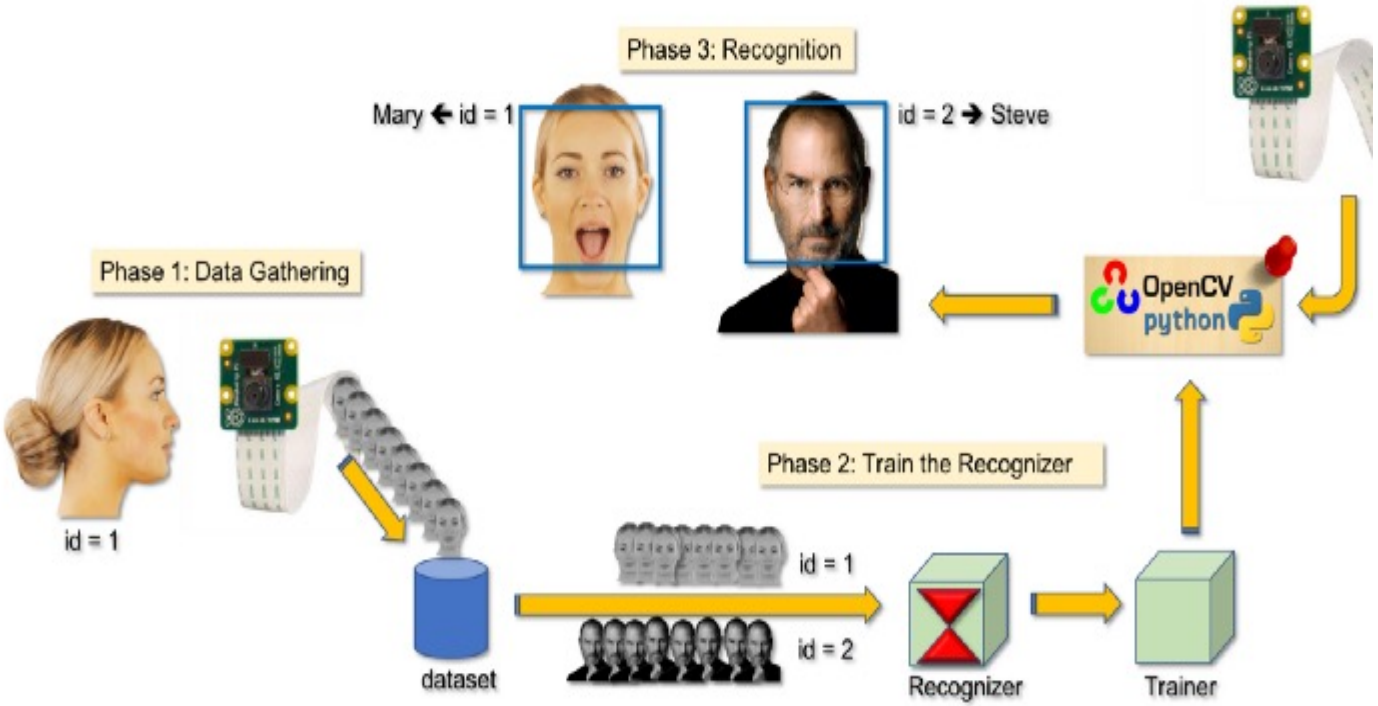
# Data Science in Health Care

# Data Science in Image recognition

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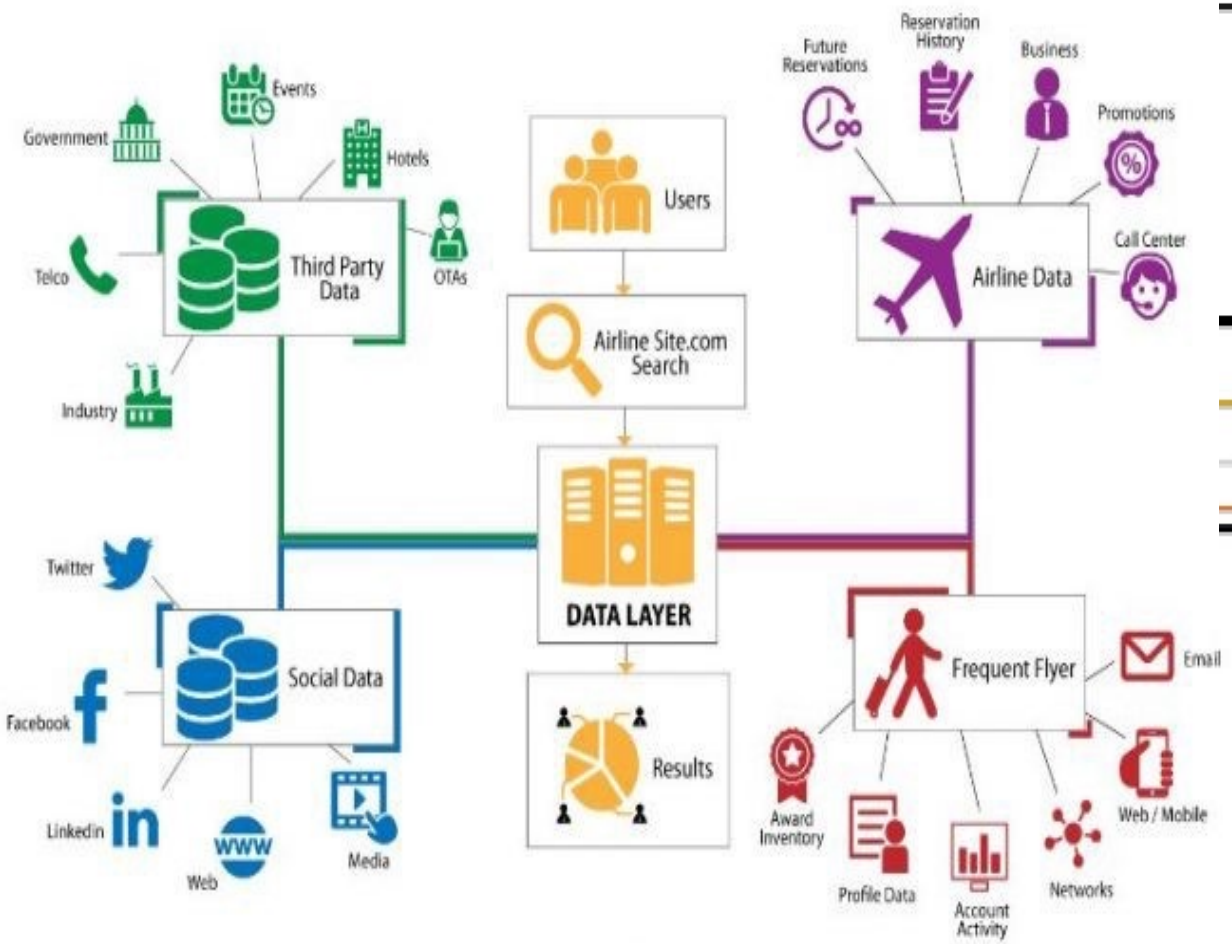
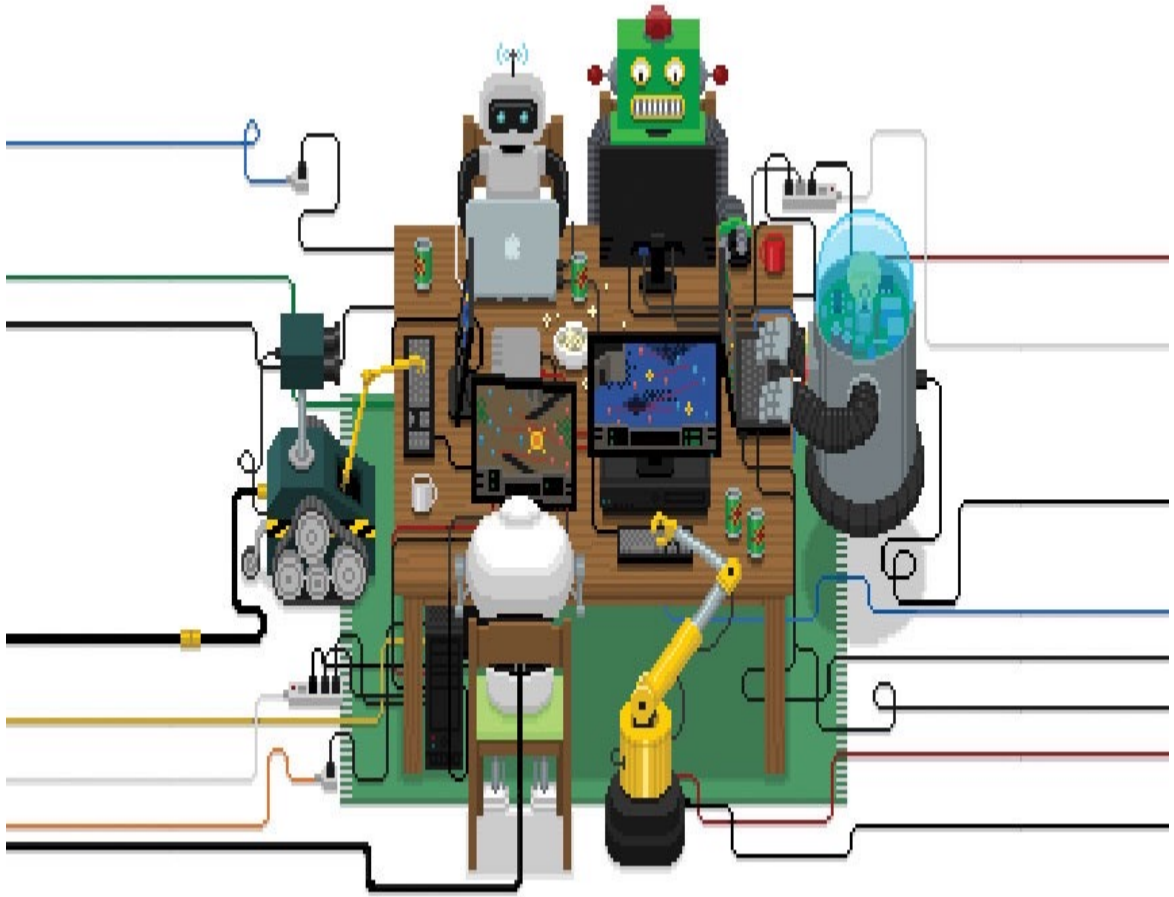
# Data Science in Airline Routing Planning



# Data Science in Gaming

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# Introduction to DS

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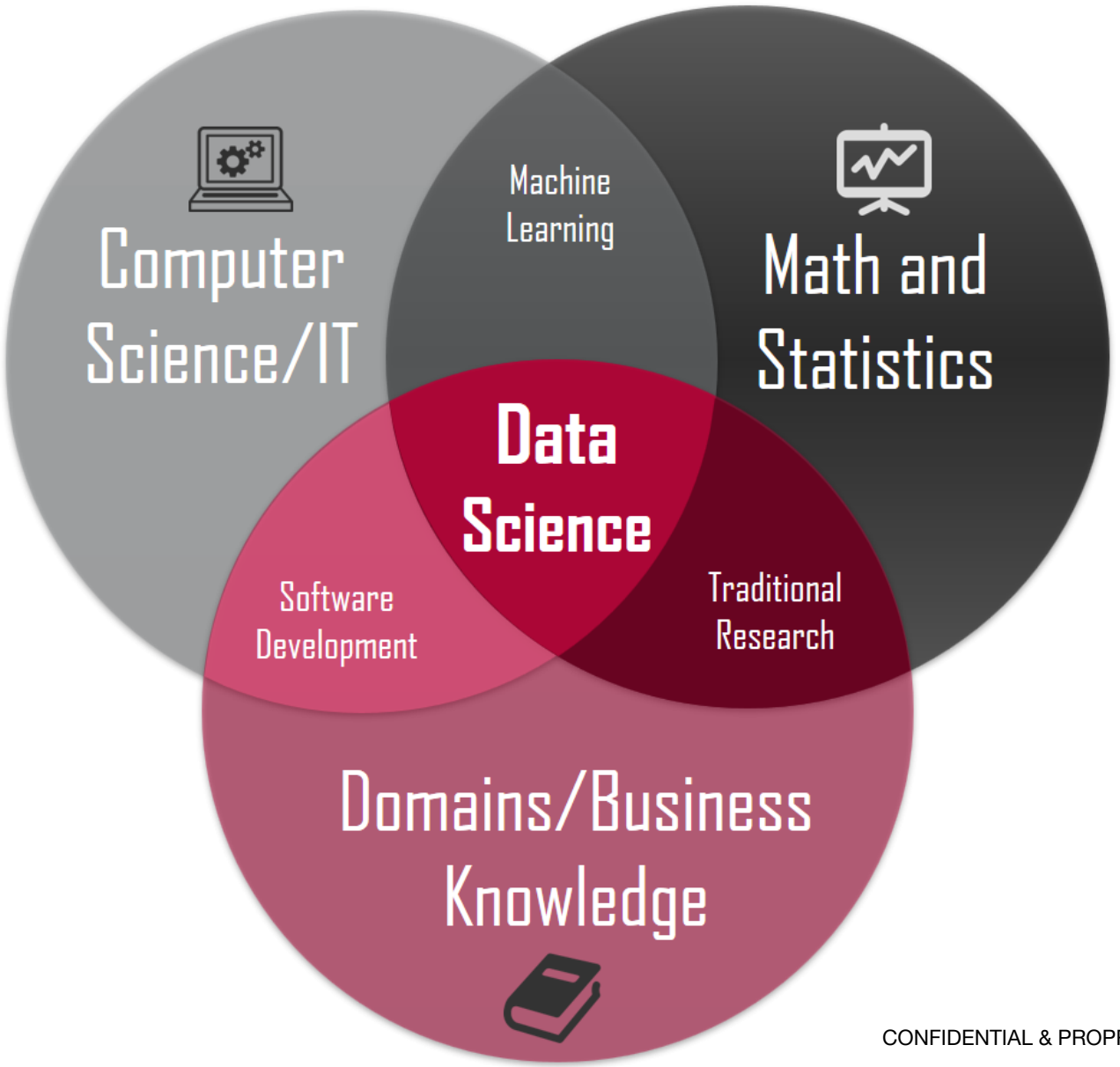


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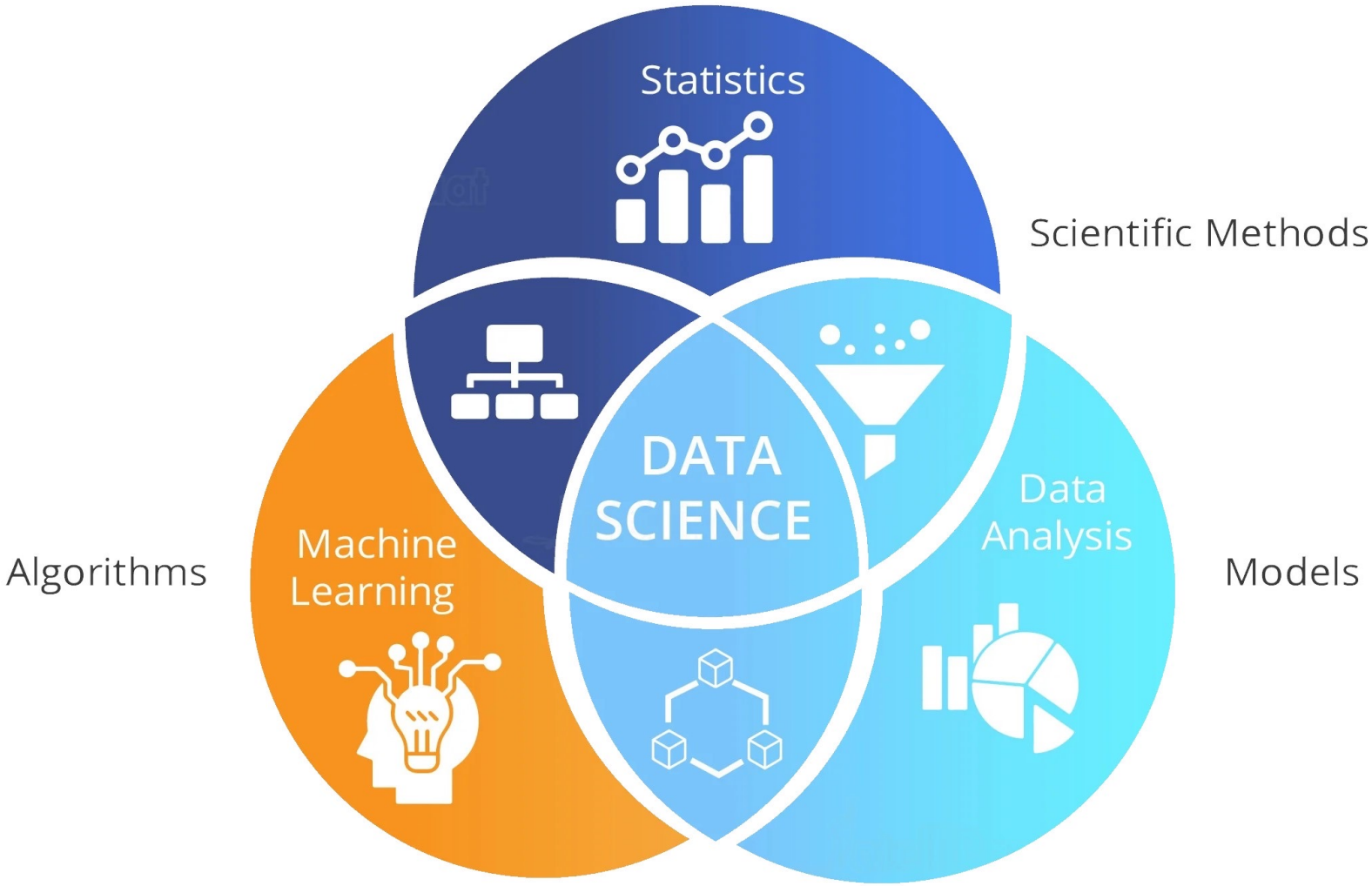


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# Data Science Basic

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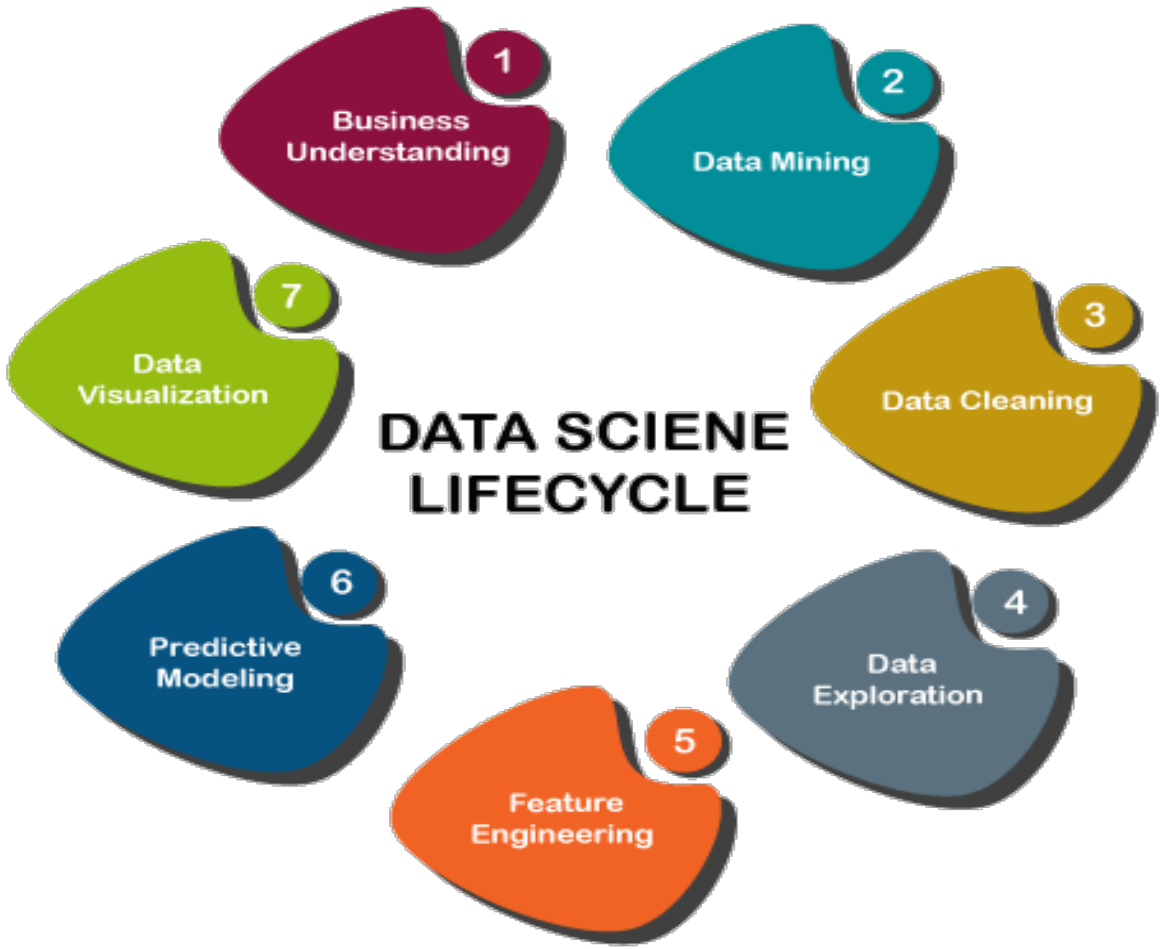
1. Understand the project objectives and requirements from a business perspective, and then convert this knowledge into a data mining problem definition and a preliminary plan designed to achieve the objectives.

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2. Data mining is the process of sorting through large data sets to identify patterns and relationships that can help solve business problems through data analysis

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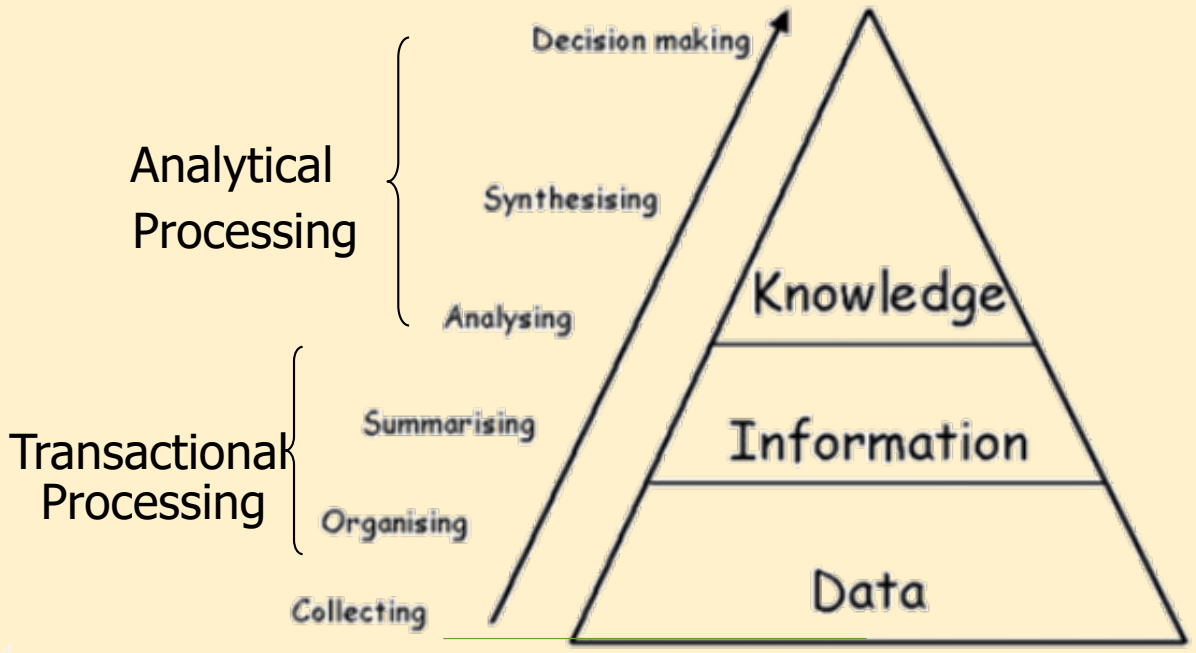


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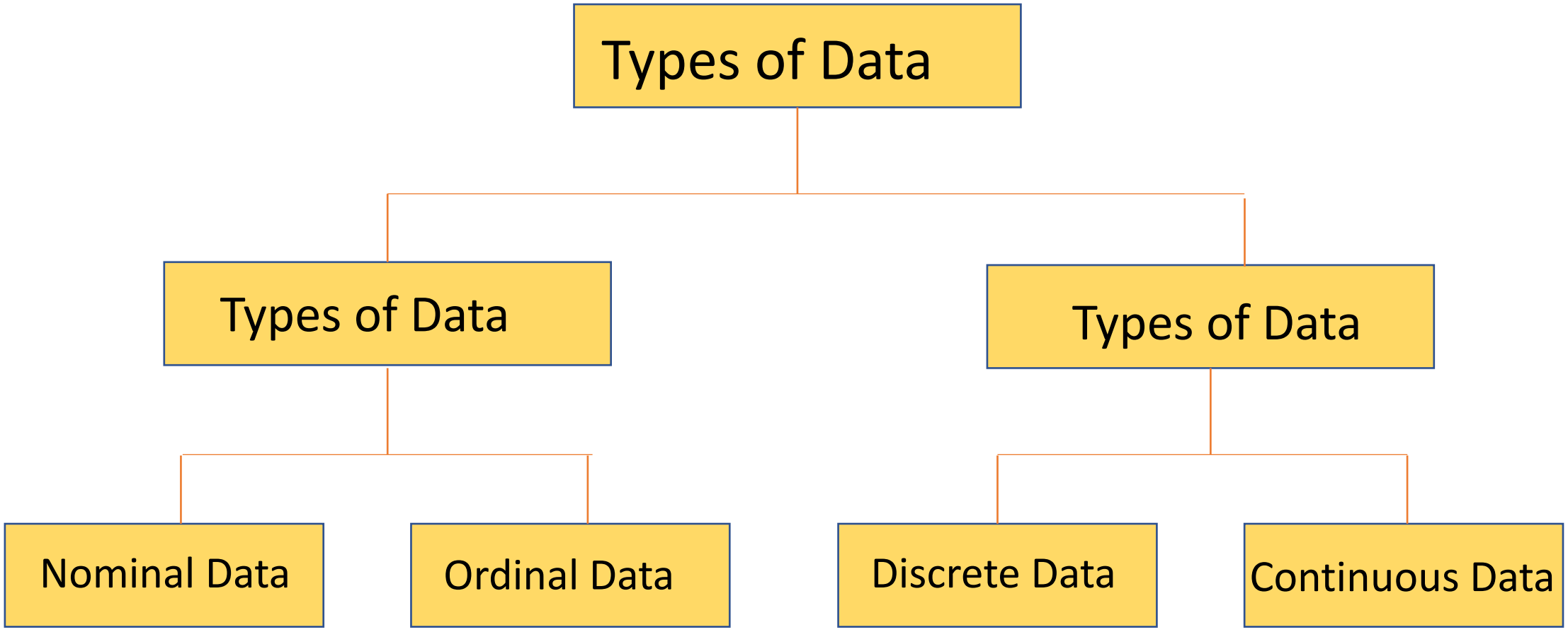


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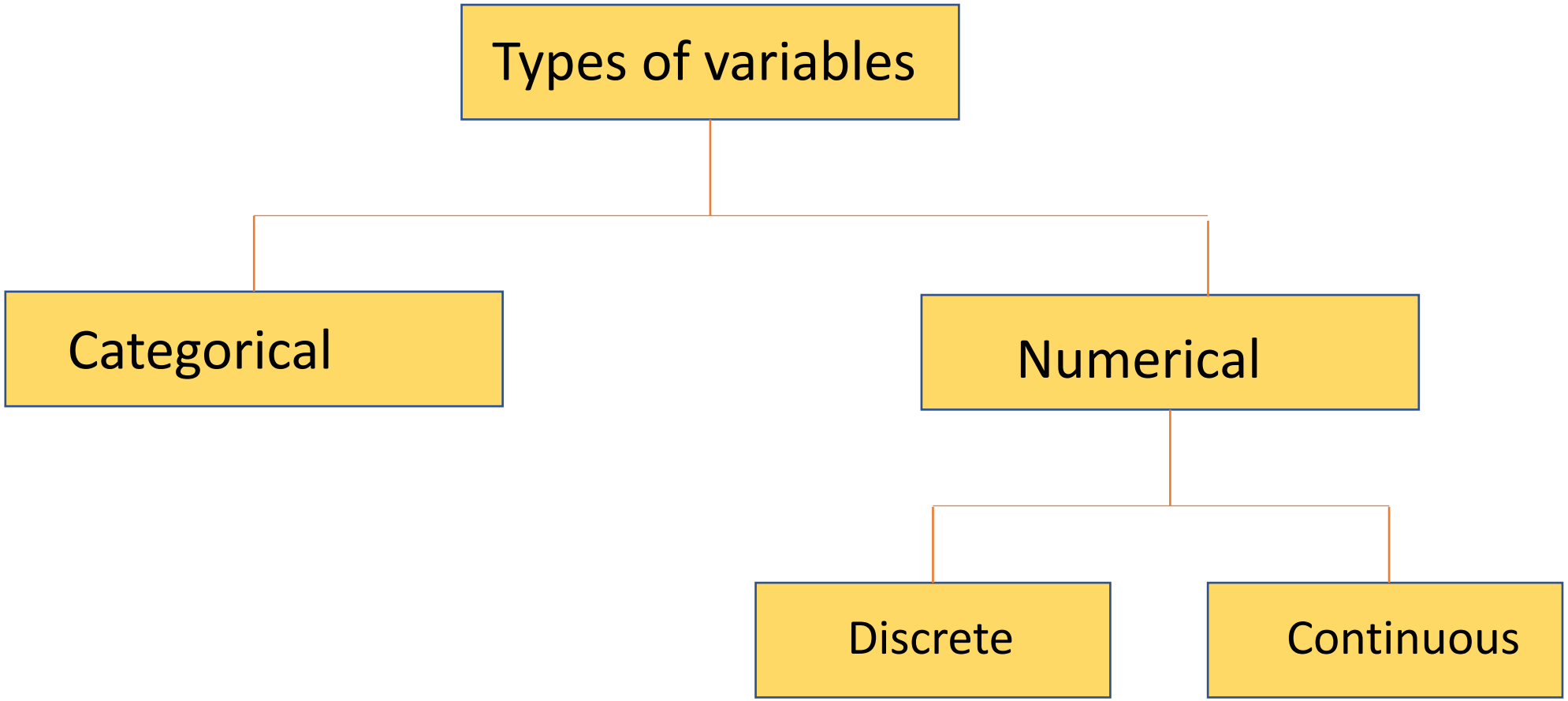


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3. Data cleaning is the process of fixing or removing incorrect, corrupted, incorrectly formatted, duplicate, or incomplete data within a dataset

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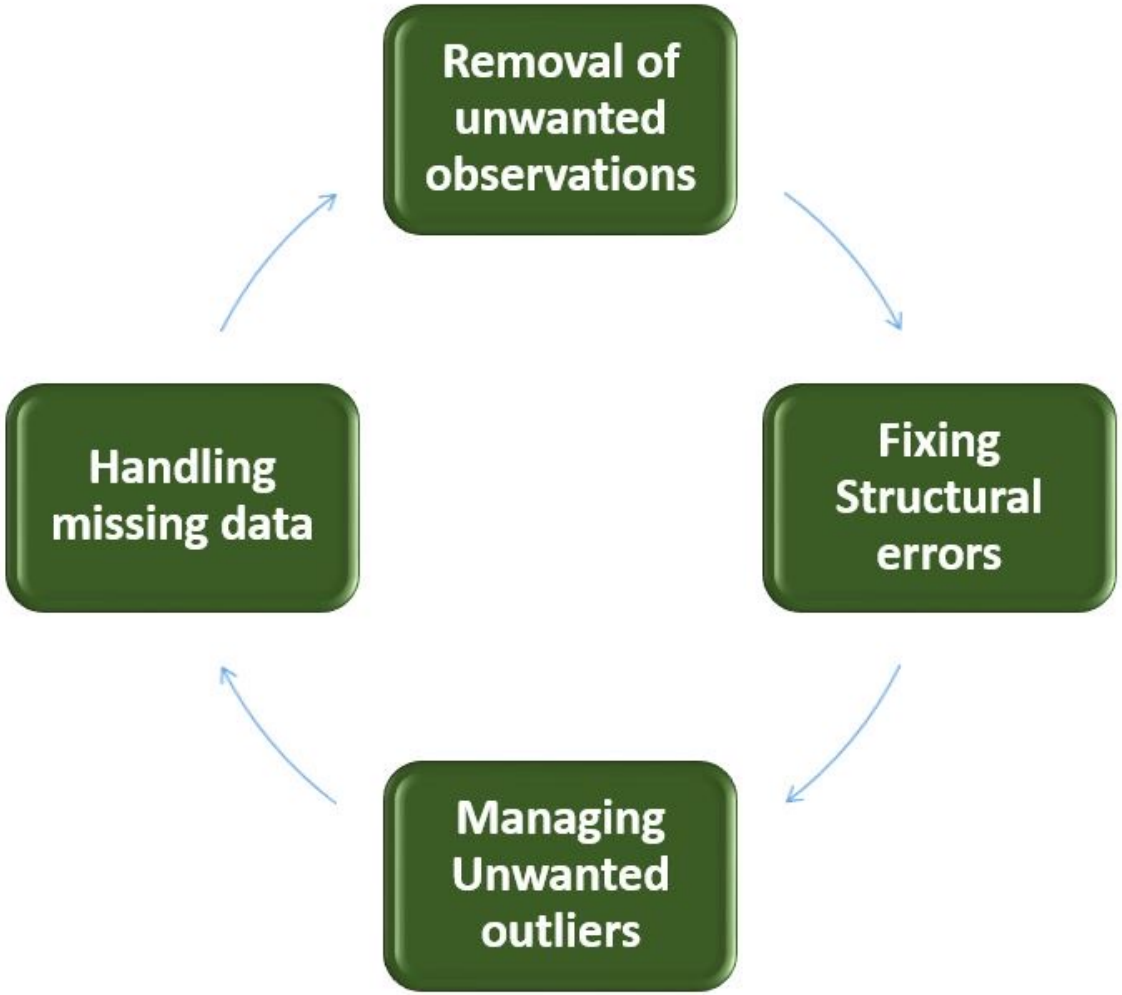
# Data Cleaning

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# DATA CLEANING STEPS

| | |
|---|---|
| **Removing unwanted observations** | • Duplicate/ redundant or irrelevant values deletion . |
| **Missing Data handling** | • Fixing issue of unknown missing values |
| **Structural error solving** | • Fixing problems with mislabeled classes, typesin names of features, same attribute with different name etc. |
| **Outliers Management** | • Unwanted values which are not fiting in datasets. |

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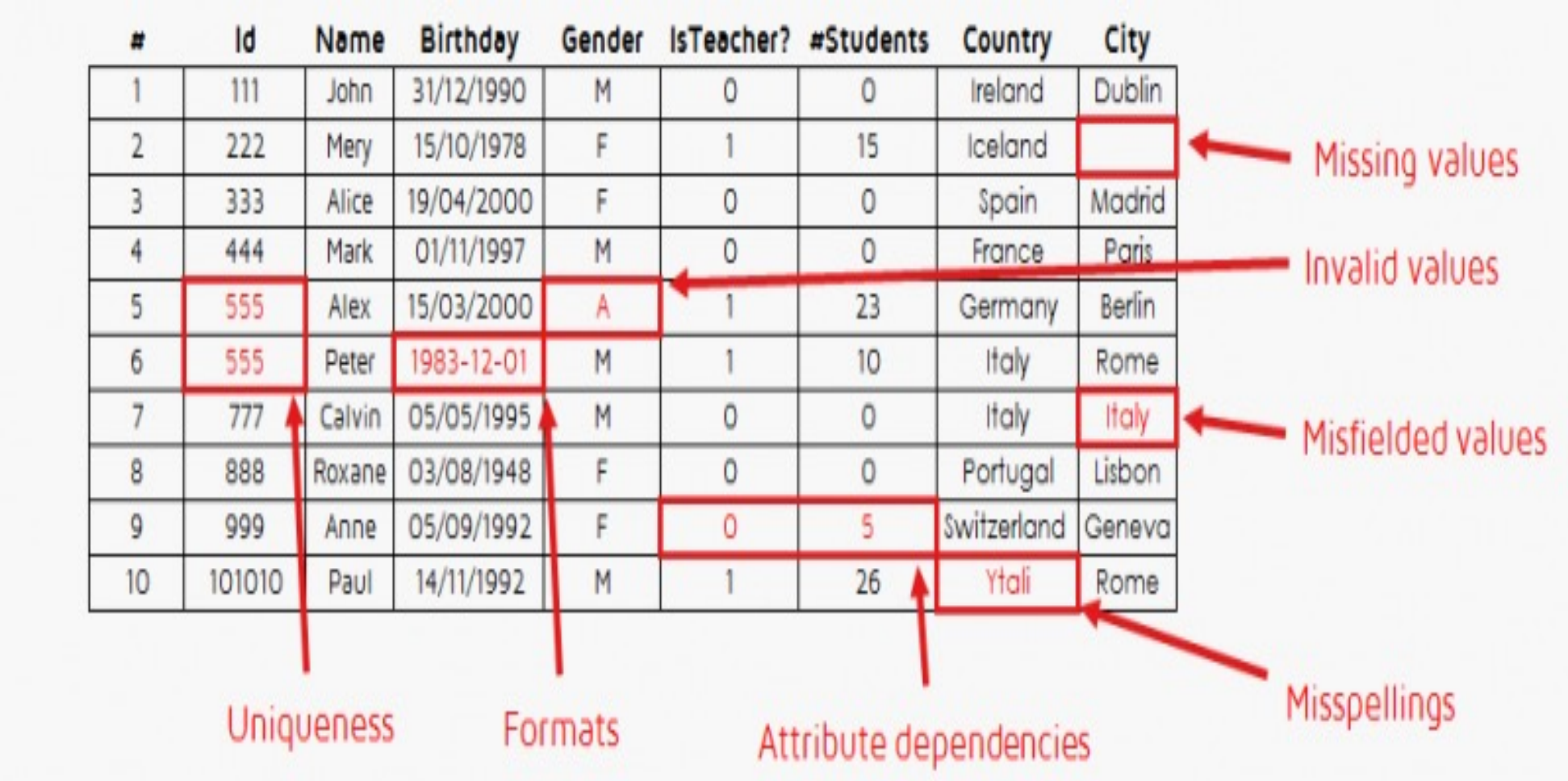


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4. Data exploration refers to the initial step in data analysis in which data analysts use data visualization and statistical techniques to describe dataset characterizations, such as size, quantity, and accuracy, in order to better understand the nature of the data.

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# Steps in the Data Analysis Process

Step 1: Decide on the objectives or Pose a Question

Step 2: What to Measure and How to Measures

Step 3: Data Collection

Step 4: Summarizing and Visualizing Data

Step 5: Data Modelling

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5. Feature engineering is a machine learning technique that leverages data to create new variables that aren't in the training set.

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6. Predictive modeling is a mathematical process used to predict future events or outcomes by analyzing patterns in a given set of input data.

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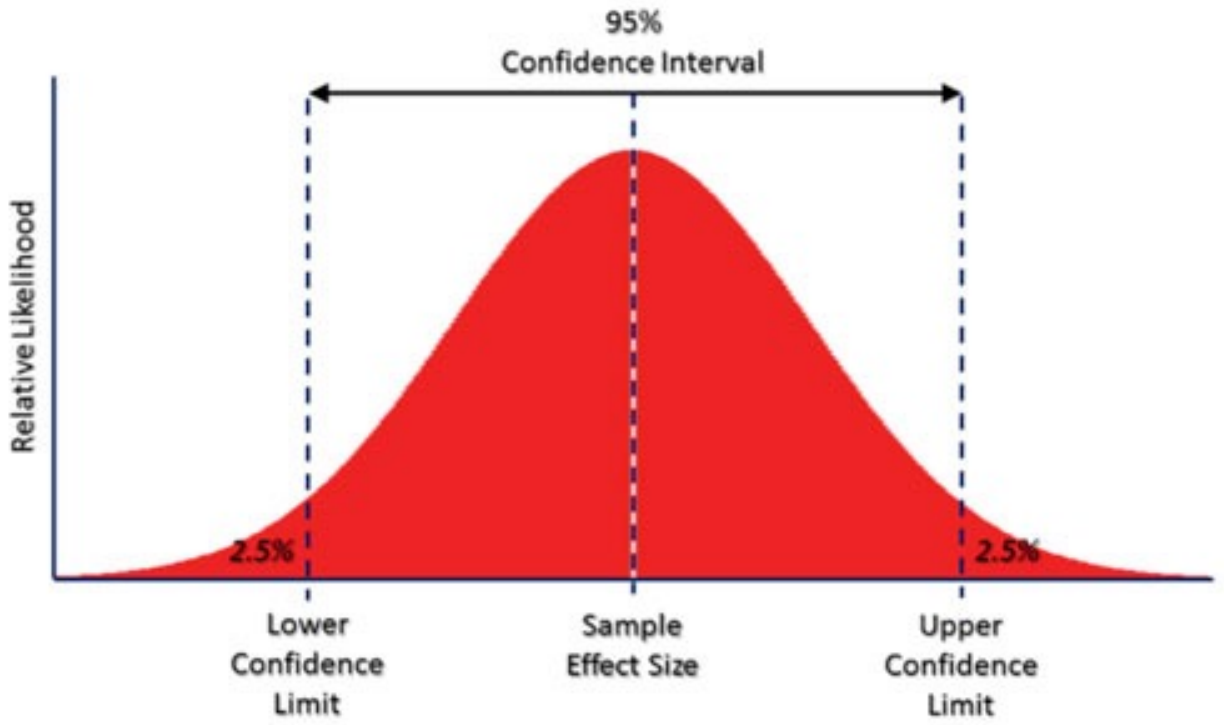
A Confidence Score is a number between 0 and 1 that represents the likelihood that the output of a Machine Learning model is correct and will satisfy a user's request.

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7. Data visualization is the practice of translating information into a visual context, such as a map or graph, to make data easier for the human brain to understand and pull insights.

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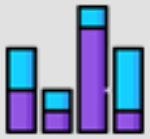
| Chart | Visual | X axis | Y axis | Analysis | Example |
|---|---|---|---|---|---|
| Scatter plot/Line Plot | | Continuous | Continuous | - Understanding linear, non-linear relationship between two variables<br>- Trend analysis, change in KPI over time | - How does heart rate change with age?<br>- How sales of a company varied over a period of time? |
| Bar Graph | | Categorical /Discrete Continuous | Continuous | - How Y (can be any performance indicator) varies across different categories? | - How sales in 2019 varied for different mobile phone brands? i.e. mobile phone brand is the category and sales is the KPI |
| Stack Bar Graph |  | Categorical | Continuous | - Relative comparison of multiple categories within a category | - Comparison of revenue generated by Apple, Samsung & Xiaomi across different products like mobile phone, laptops, television, and headsets |
| Box Plot | | Continuous | | - Outlier detection<br>- Analysing data distribution across Median and Inter Quartile Range | - How different sales figures across a year is distributed? |
| Pie Chart | | Categorical& Continuous | | - Relative comparison of different categories for one single entity in terms of proportion/percentages | - What percentage of Sales in 2019 is constituted by different products under Apple? |
| Histogram Plot | | Continuous | - | - How distribution of values of x varies across different range buckets? | - Distribution of income across income buckets for developing countries |

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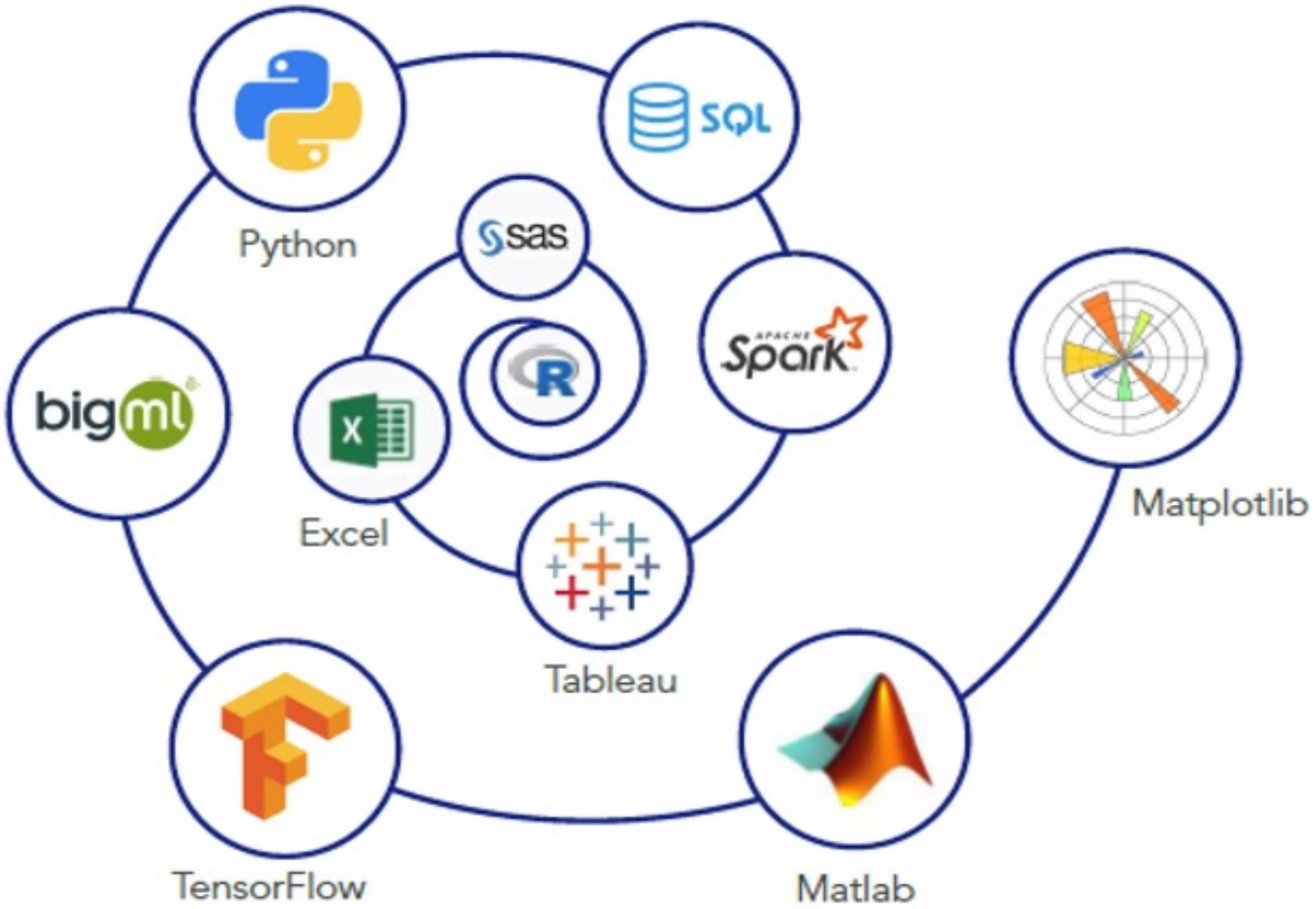
# Data Science Tools

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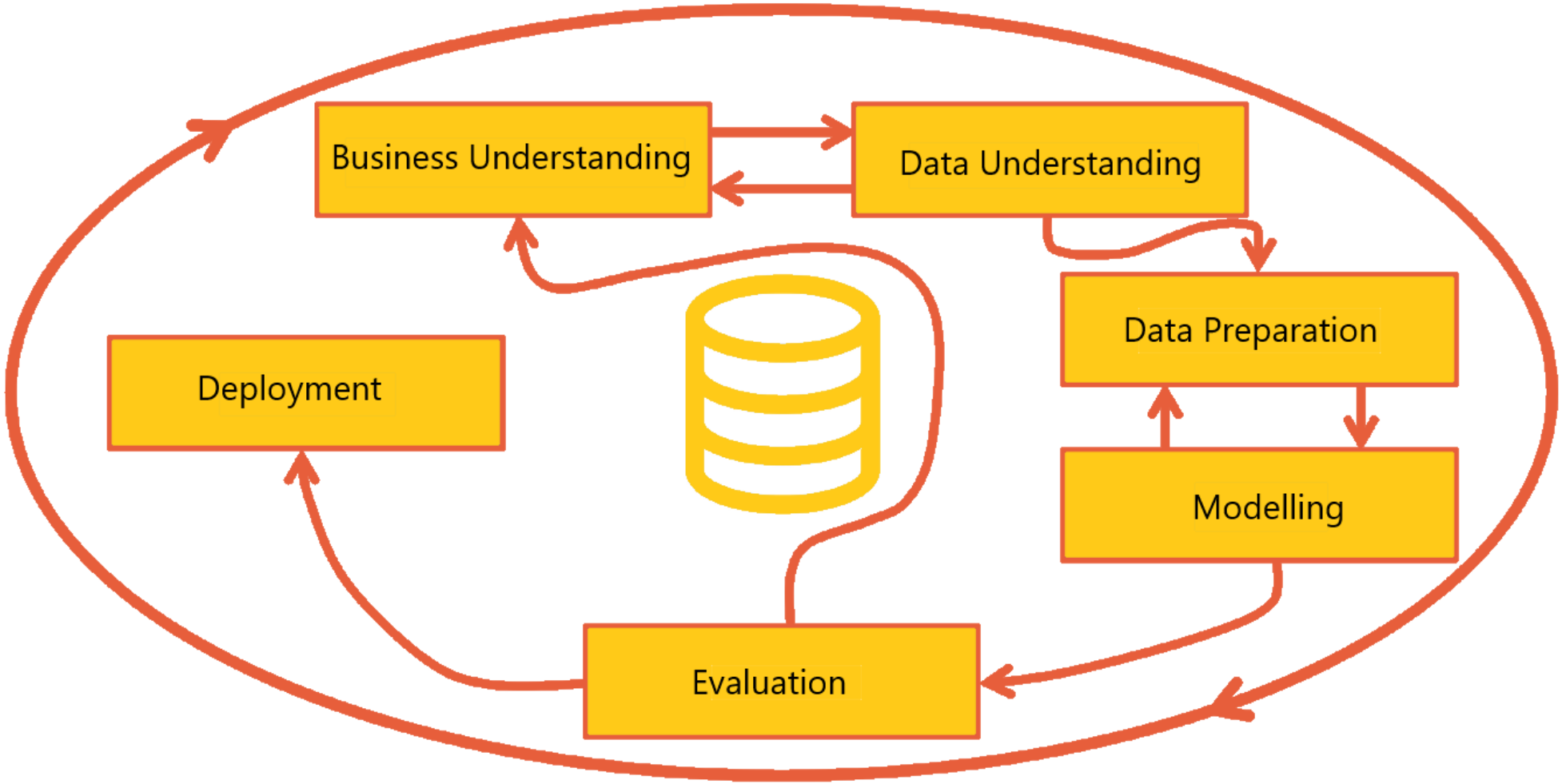
# Data Science Basics

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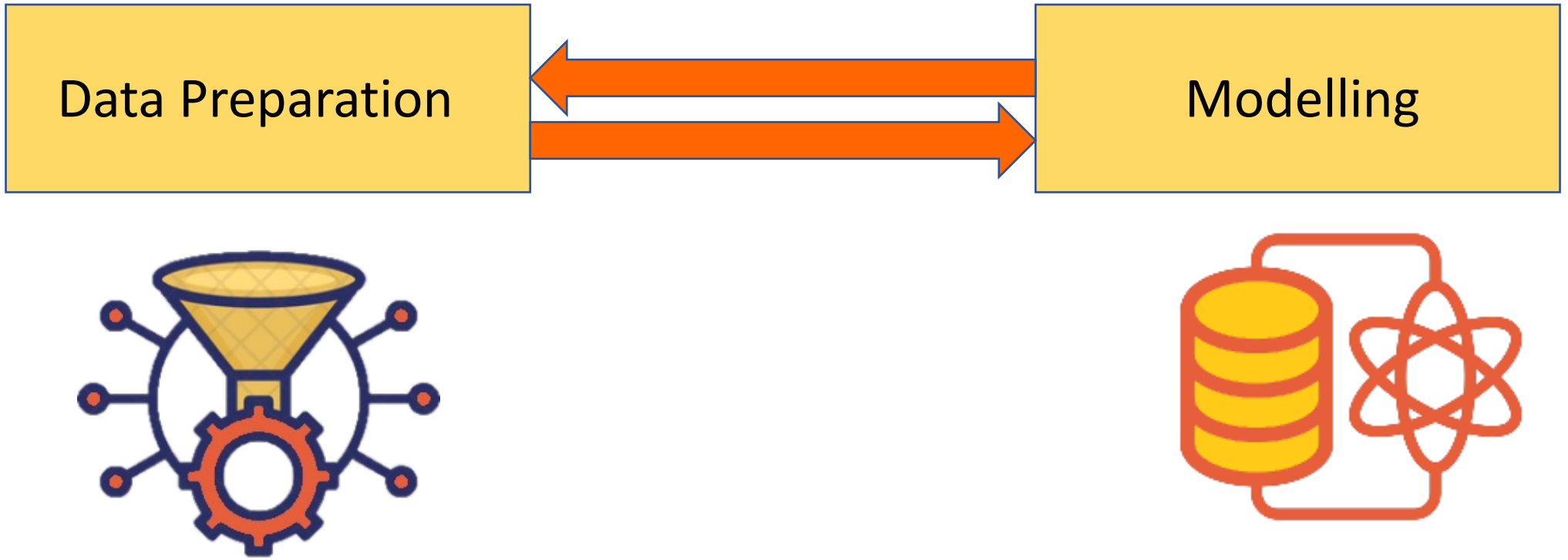
# Modelling in Data Science

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# Data Science Task

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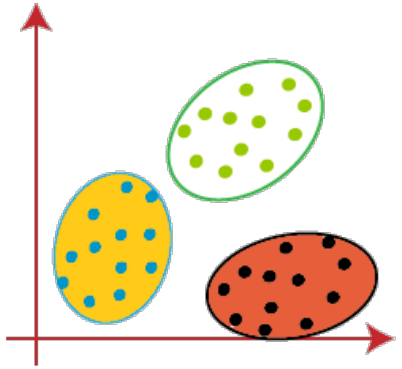
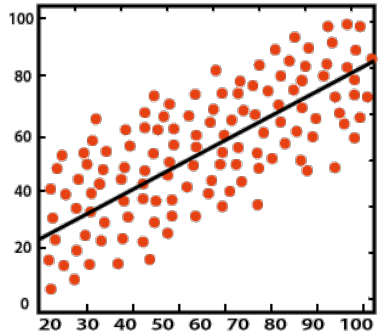
## ML Algorithms

- Classification

- Clustering



- Regression




- Association

(A, B) ⟶ C
(D, E) ⟶ F
(A, E) ⟶ G

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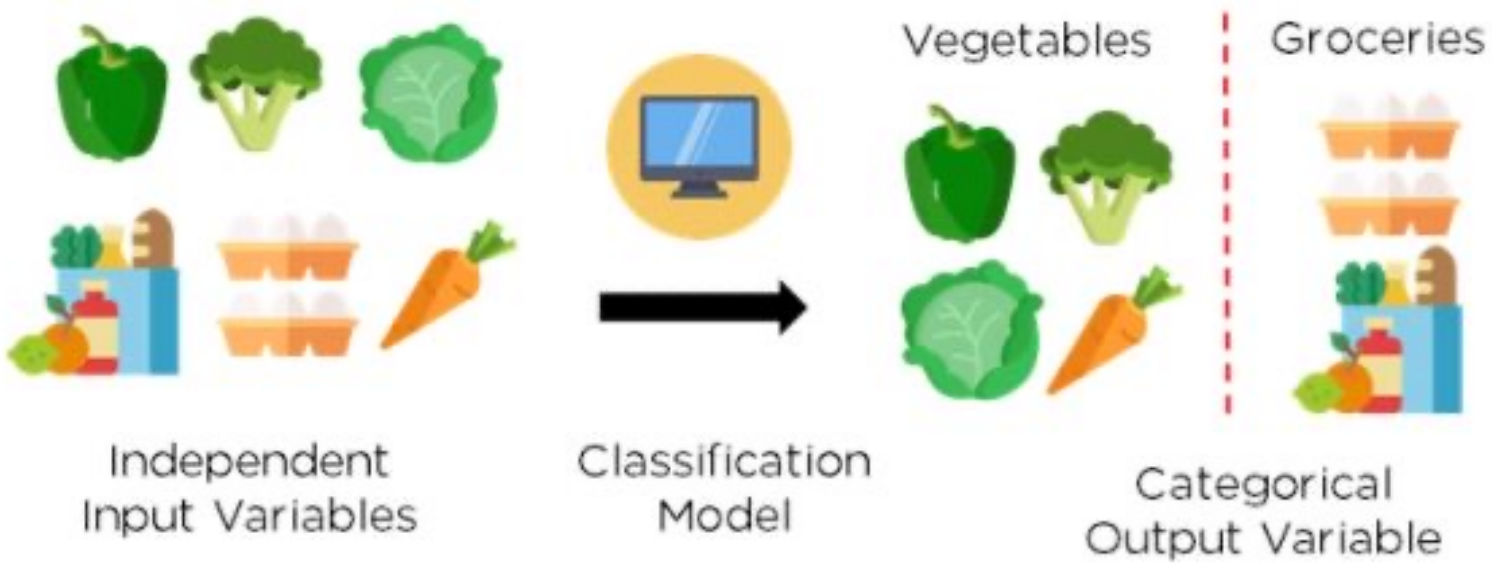
# Classification

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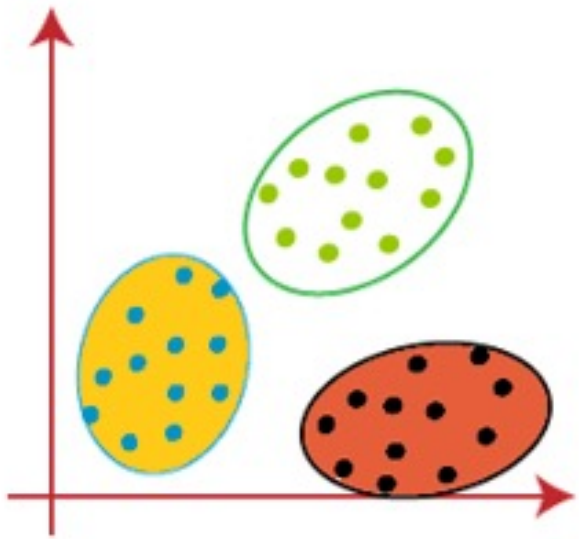
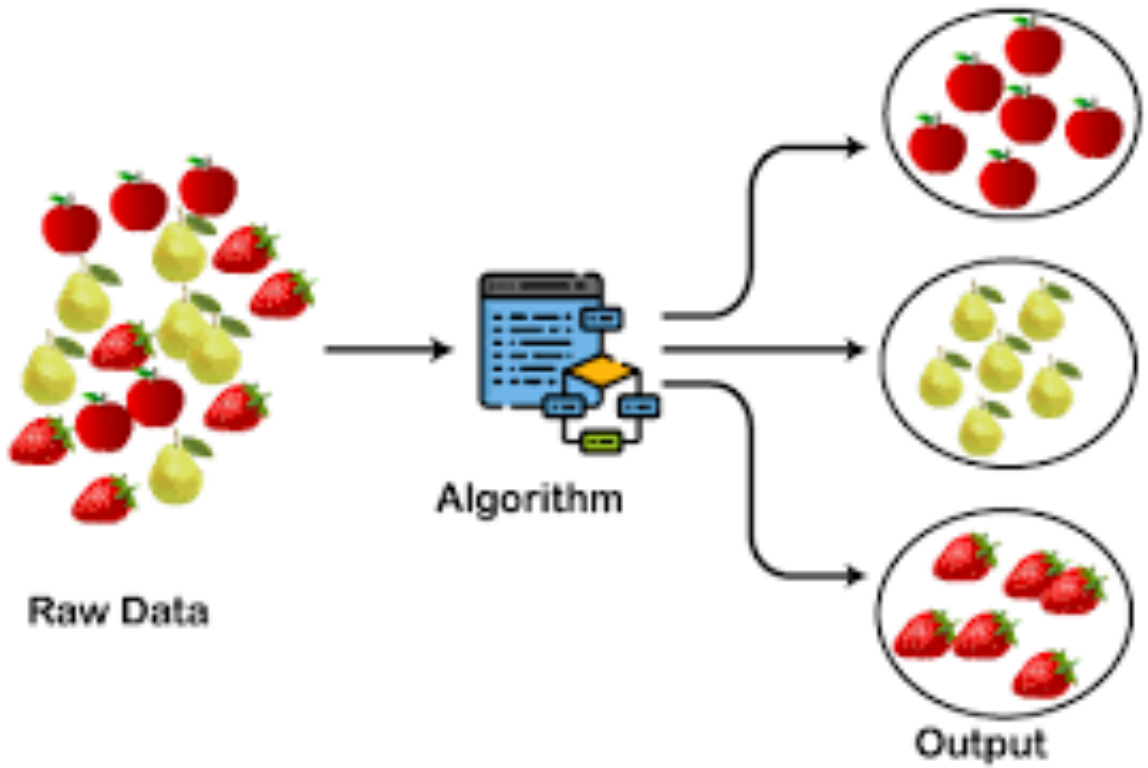
# Clustering



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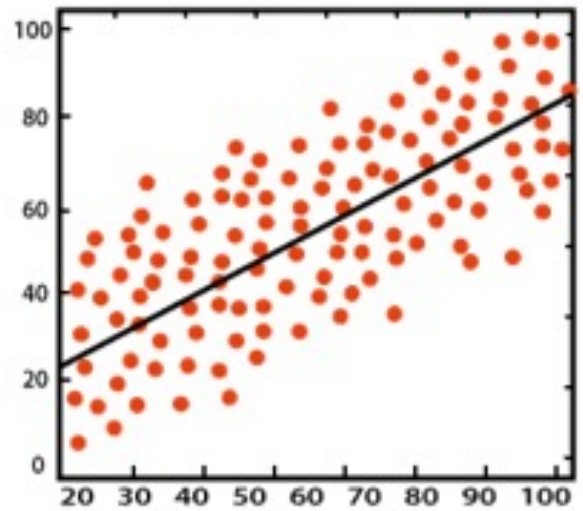
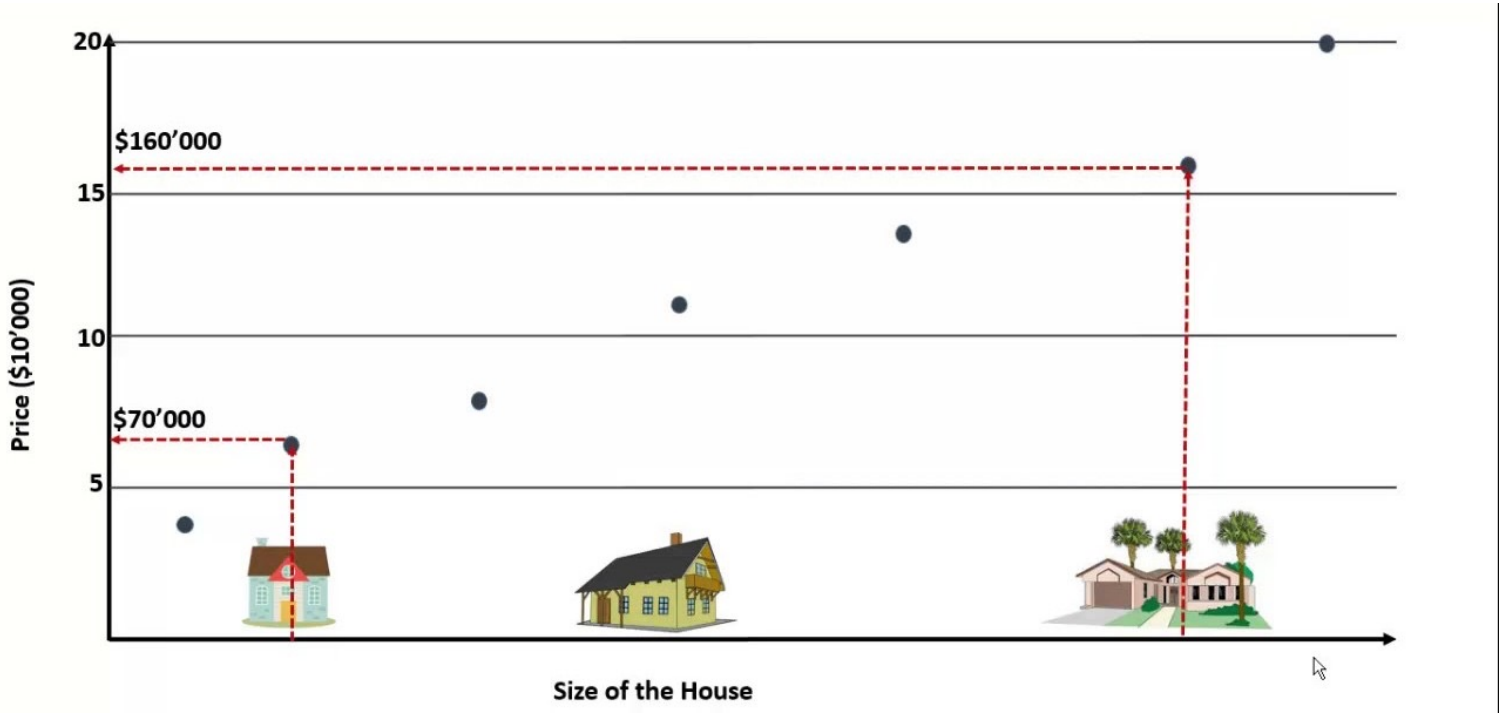
# Regression

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# Association

(A, B) ⟶ C

(D, E) ⟶ F

(A, E) ⟶ G

Customer 1

Customer 2

Customer 3

Customer n

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# THANK YOU!

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