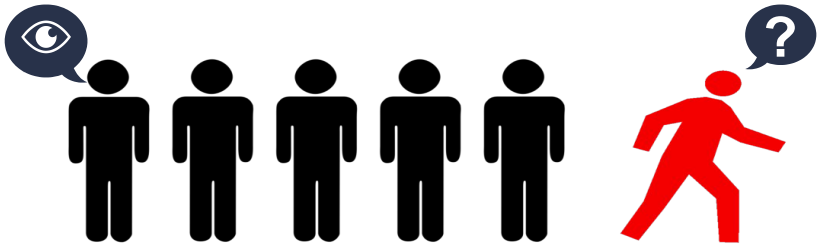
Statistical Analysis

Using Python

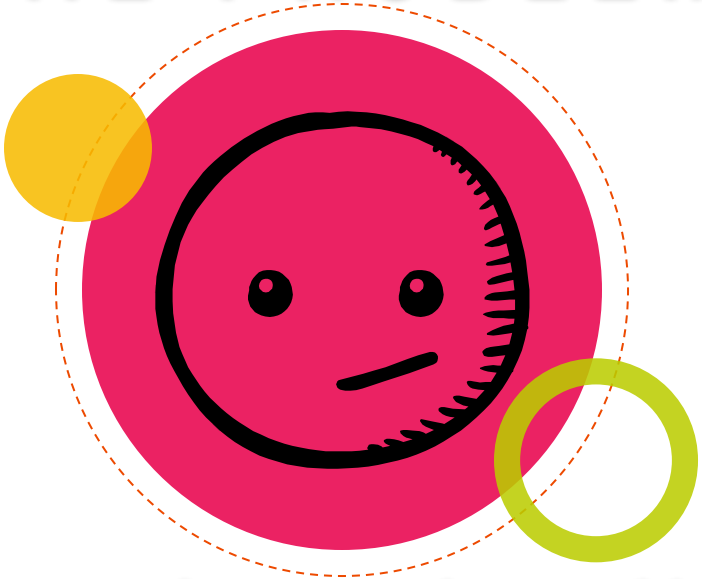
Telco Customer Churn



A telecommunications company is concerned about the number of customers leaving their land-line business for cable competitors.

They need to understand who is leaving.

UNDERSTANDING THE PROBLEM

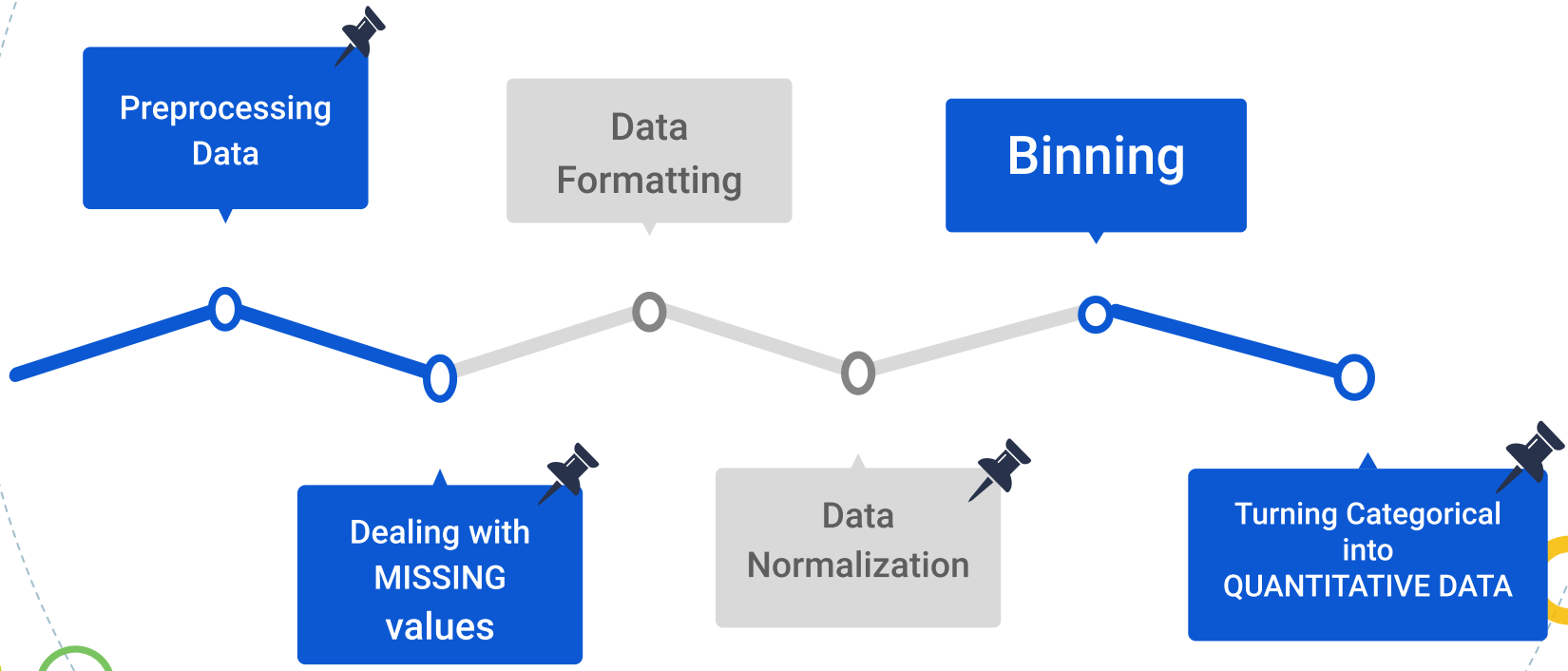


Imagine that you're an analyst at this company and you have to find out who is leaving and why.

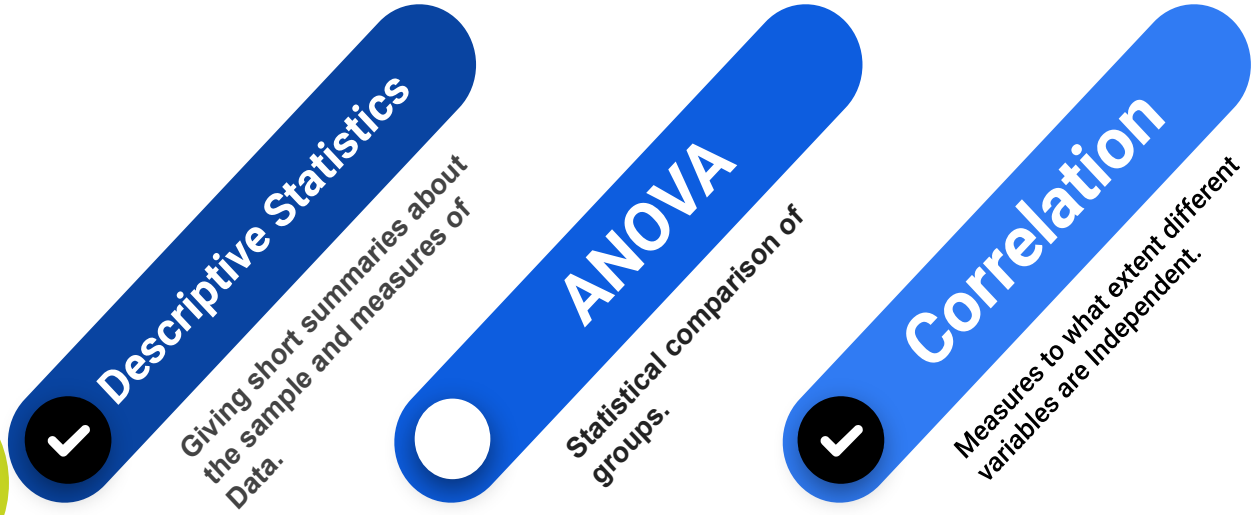
About dataset

- **Customers who left within the last month –** the column is called Churn.
- **Services that each customer has signed up for –** phone, multiple lines, internet, online security, online backup, device protection, tech support, and streaming TV and movies.
- **Customer account information –** how long they've been a customer, contract, payment method, paperless billing, monthly charges, and total charges.
- **Demographic info about customers –** gender, age range, and if they have partners and dependents.

DATA WRANGLING



Exploratory Data Analysis



Model Development

Training Dataset

- ➔ **The sample of data used to fit the model.**
- ➔ **The actual dataset that we use to train the model .**
- ➔ **The model sees and learns from this data.**

Testing Dataset

- ➔ **The sample of data used to provide an unbiased evaluation of a final model fit on the training dataset.**
- ➔ **The Test dataset provides the gold standard used to evaluate the model. It is only used once a model is completely trained.**

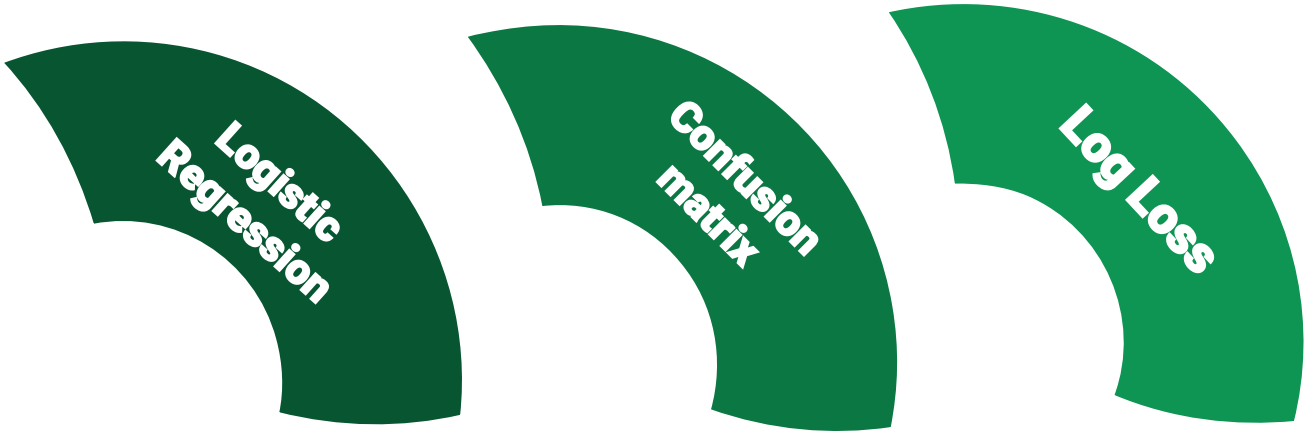
Model Development

Logistic Regression

It's a **classification** algorithm, that is used where the response variable is categorical.

The idea of **Logistic Regression** is to find a relationship between features and probability of particular outcome.

Model Evaluation



Thank You :)

Any Questions . . .