**Customer Attrition:**

Customer attrition, also known as customer churn, customer turnover, or customer defection, is the loss of clients or customers.

Telephone service companies, Internet service providers, pay TV companies, insurance firms, and alarm monitoring services, often use customer attrition analysis and customer attrition rates as one of their key business metrics because the cost of retaining an existing customer is far less than acquiring a new one. Companies from these sectors often have customer service branches which attempt to win back defecting clients, because recovered long-term customers can be worth much more to a company than newly recruited clients.

Companies usually make a distinction between voluntary churn and involuntary churn. Voluntary churn occurs due to a decision by the customer to switch to another company or service provider, involuntary churn occurs due to circumstances such as a customer's relocation to a long-term care facility, death, or the relocation to a distant location. In most applications, involuntary reasons for churn are excluded from the analytical models.

Analysts tend to concentrate on voluntary churn, because it typically occurs due to factors of the company-customer relationship which companies control, such as how billing interactions are handled or how after-sales help is provided.

Predictive analytics use churn prediction models that predict customer churn by assessing their propensity of risk to churn. Since these models generate a small prioritized list of potential defectors, they are effective at focusing customer retention marketing programs on the subset of the customer base who are most vulnerable to churn.

**Data Dictionary:**

The target variable in this dataset is ‘churn’, which has two valid values:

1 – Customer will churn and 0 – Customer will not churn.

The raw data contains 7043 rows (customers) and 21 columns (features). To predict customer churn, we have the following information in the dataset:

**Customer ID**: Customer ID

**Gender**: Customer gender (female, male)

**Senior Citizen:** Whether the customer is a senior citizen or not (1, 0)

**Partner:** Whether the customer has a partner or not (Yes, No)

**Dependents**: Whether the customer has dependents or not (Yes, No)

**Tenure:** Number of months the customer has stayed with the company

**Phone Service**: Whether the customer has a phone service or not (Yes, No)

**Multiple Lines**: Whether the customer has multiple lines or not (Yes, No, No phone service)

**Internet Service**: Customer’s internet service provider (DSL, Fiber optic, No)

**Online Security:** Whether the customer has online security or not (Yes, No, No internet service)

**Online Backup**: Whether the customer has online backup or not (Yes, No, No internet service)

**Device Protection:** Whether the customer has device protection or not (Yes, No, No internet service)

**Tech Support:** Whether the customer has tech support or not (Yes, No, No internet service)

**Streaming TV**: Whether the customer has streaming TV or not (Yes, No, No internet service)

**Streaming Movies**: Whether the customer has streaming movies or not (Yes, No, No internet service)

**Contract**: The contract term of the customer (Month-to-month, One year, Two year)

**Paperless Billing**: Whether the customer has paperless billing or not (Yes, No)

**Payment Method**: The customer’s payment method (Electronic check, Mailed check, Bank transfer (automatic), Credit card (automatic))

**Monthly Charges:** The amount charged to the customer monthly

**Total Charges:** The total amount charged to the customer

**Churn:** Whether the customer churned or not (Yes or No)