Customer Churning Analysis

Swan Teleco provided a database of 7043 customers from the last quarter with the objective of obtaining the churn risk of each individual.

From the last quarter, there was 1869 churners with 5174 customers staying on.

We used the information provided and used predictive modelling techniques to help in understanding what makes the customers churn.

Aim

What factors make a person more likely to stay?

The aim of this analysis is to provide actionable information regarding characteristics indicative of churning intention.

Key Findings

The following make a client more likely to churn:

- No partner
- No dependant
- Uses paperless billing
- Has a month-to-month contract.

- Does not have one or more of:
  - Online security
  - Online backup
  - Device protection
  - Tech Support
  - Streaming TV
  - Streaming movies

Clients with no internet service are significantly less likely to churn.

Demographic Comparison

Clients who churn are more likely to exhibit certain characteristics.

Feature	Overall Breakdown	Breakdown for churners	Takeaway
Contract length (Fig. 1)	Month-to-month: 55.1% One year: 24.0% Two year: 20.9%	Month-to-month: 88.6% One year: 8.9% Two year: 2.6%	Roughly half of all clients have a month-to-month contract, but they make up nearly 9 in 10 of all churners. Clients on a two or one year contract are very unlikely to churn.
Online security & Internet service (Fig. 2)	Yes: 28.7% No: 49.7% No internet service: 21.6%	Yes: 15.8% No: 78.2% No internet service: 6.1%	Online secruity, like all other additions such as online backup and device protection, makes customers less likely to churn. Lack of internet service is a strong predictor for non-churners
Paperless billing (Fig. 3)	Yes: 59.3% No: 40.7%	Yes: 74.9% No: 25.1%	Use of paperless billing moderately increases the chances of churning.

Tenure and Charge Analysis

There is a clear relationship between client tenure and churn OUTCOME (Fig. 4, Fig. 5). Relatively new clients are more prone to churning - those who have been with the company for under 6 months are more likely to churn than to stay. "Loyal" customers, who have been with the company for over 5 years, are very unlikely to churn by comparison. It may be worthwhile to focus on retaining recent customers.
There is a pattern emerging between the churn rate and monthly charges, as well as tenure (Fig. 6). Clients with shorter tenures and increased charges are much more likely to turn, whereas clients that have been with the company for a longer period of time are unlikely to churn, even when paying higher prices.

Improving Churn Analysis

A limitation of this process was found with the lack of regional categories for the customers to group them in. The focus was on customers in California however there were too many cities and zip codes to conduct investigation into whether there was regional trends. We recommend implementing a regional split for large States like California and Texas so future data analysis can be improved in its accuracy and insights. As shown in Fig. 7, there is not sufficient correlation between Zip code and other features to warrant analysis in this case.

Note:
A churn value of 1 corresponds to a churned customer.

Figure 1

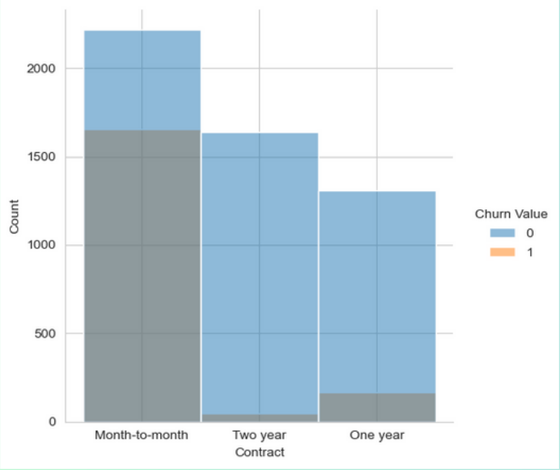
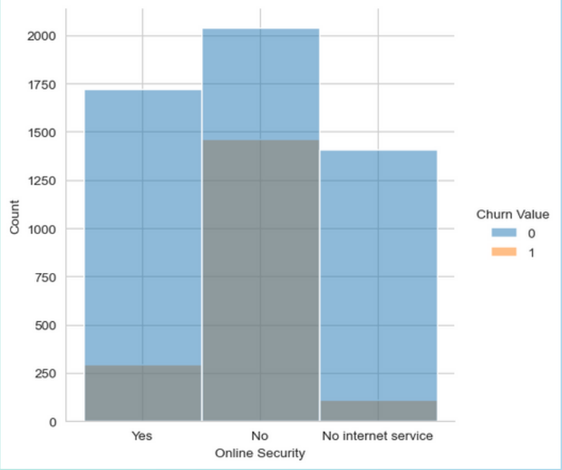


Figure 2



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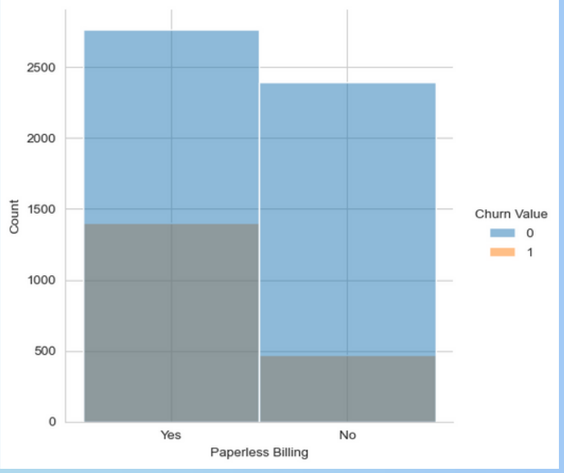
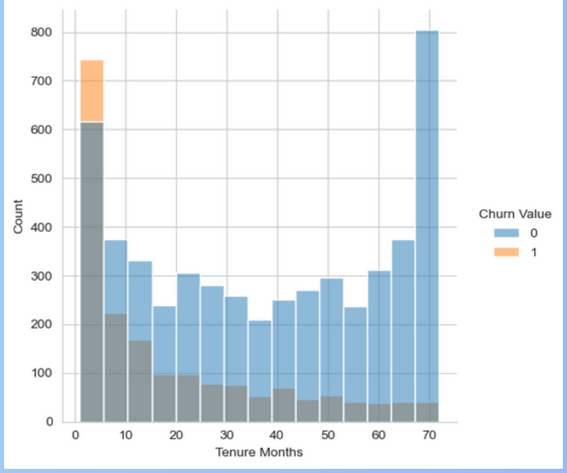


Figure 4



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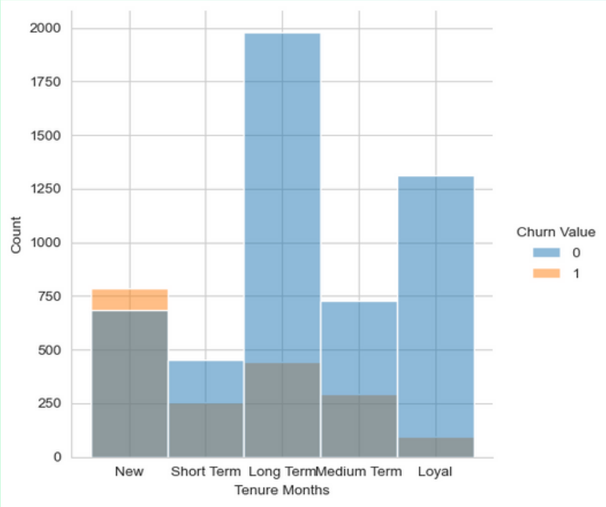

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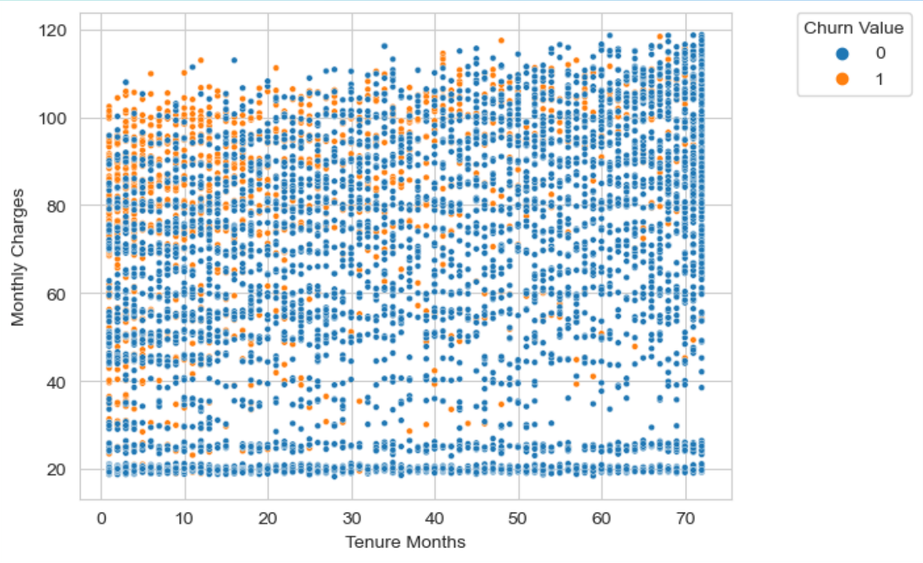
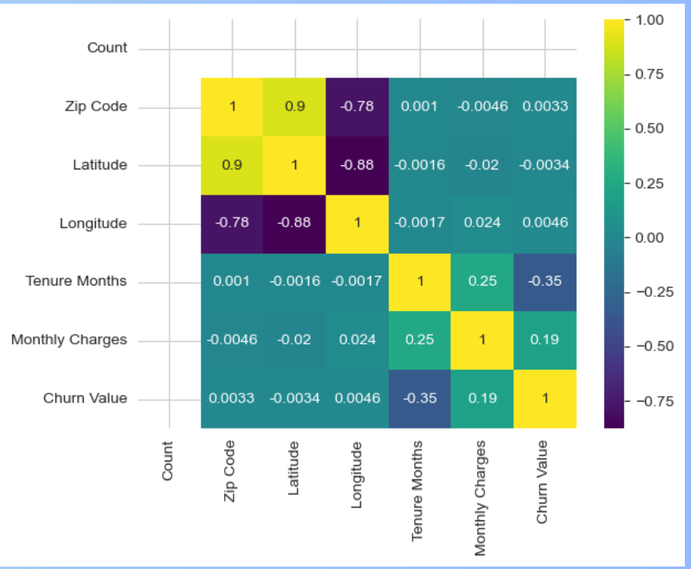
Figure 7