



Telco Customer Churn Analysis Report

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Customer Churn



Churn is a phenomenon when customers **stop using a product** from a specific company.



Main Objective:

To **increase the retention period** of existing customers

Specific Objective:

To **predict which customers are more likely to churn.**

Dataset Overview (Source)

Target

- Churn (Yes/No)

Demographic Info

- customerID
- gender (M/F)
- SeniorCitizen (Yes/No)
- Partner (Yes/No)
- Dependent (Yes/No)

Main Services

- PhoneService (Yes/No)
- MultipleLines (No phone service/Yes/No)
- InternetService (DSL/Fiber Optic/No)

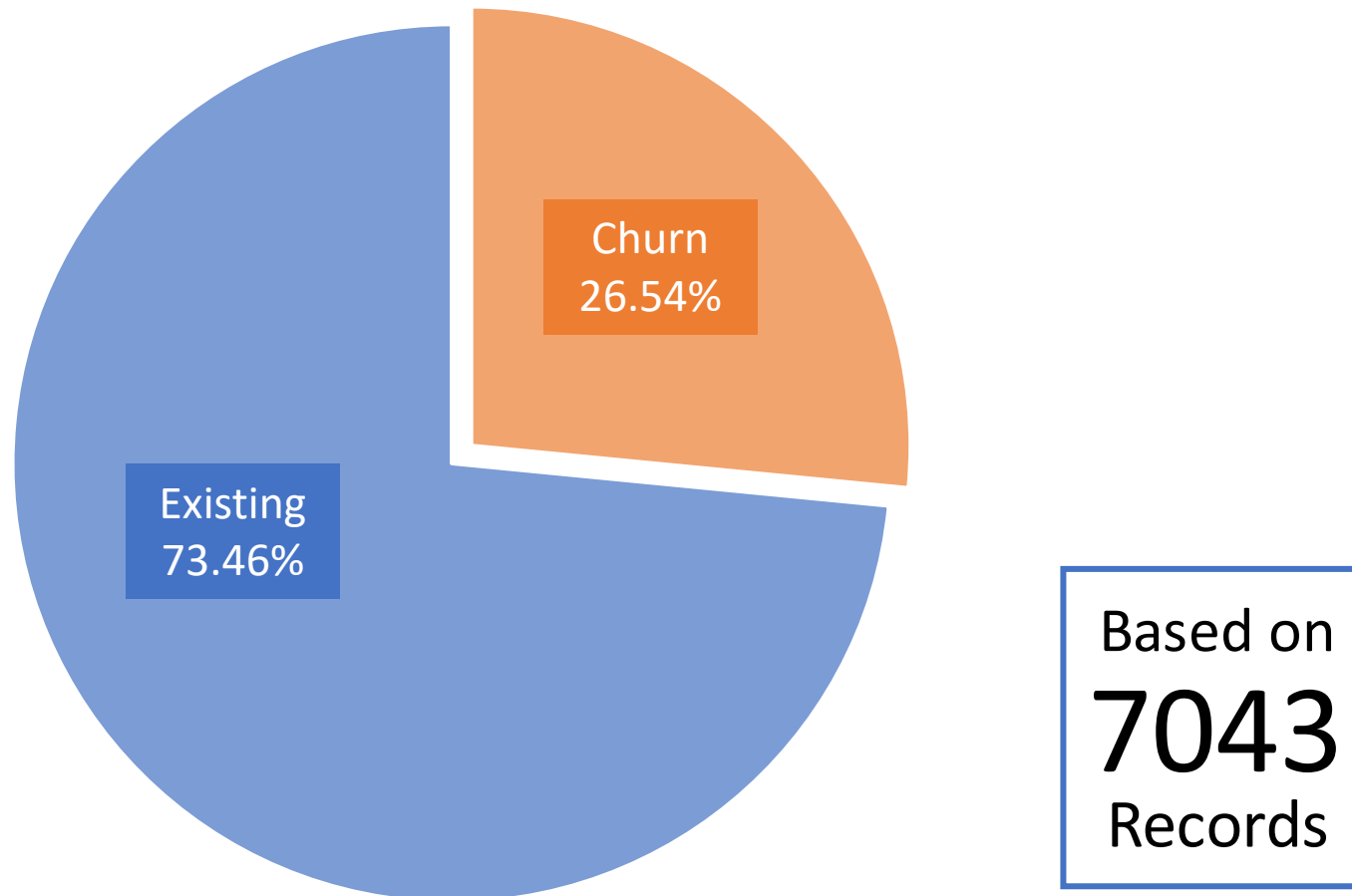
Account Info

- tenure (num. of month a customer has subscribed)
- PaperlessBilling (Yes/No)
- Contract (Month-to-month/One year/Two year)
- PaymentMethod (Various)
- MonthlyCharges (Latest monthly charge)
- TotalCharges

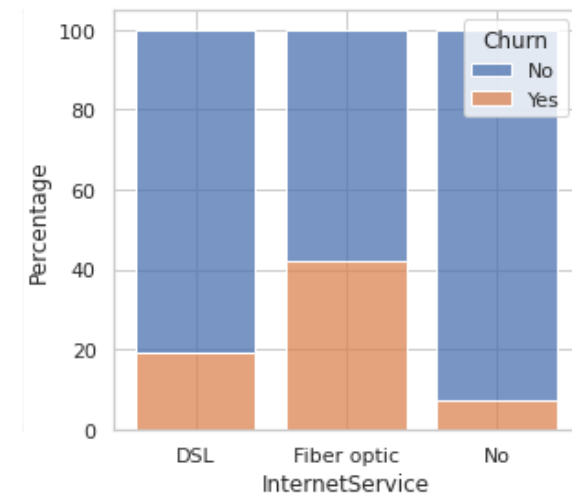
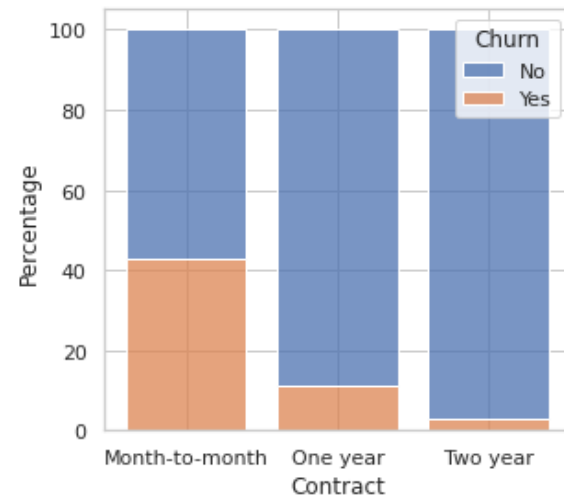
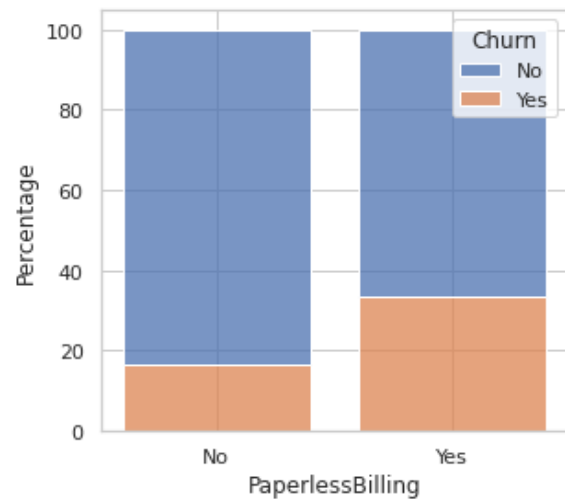
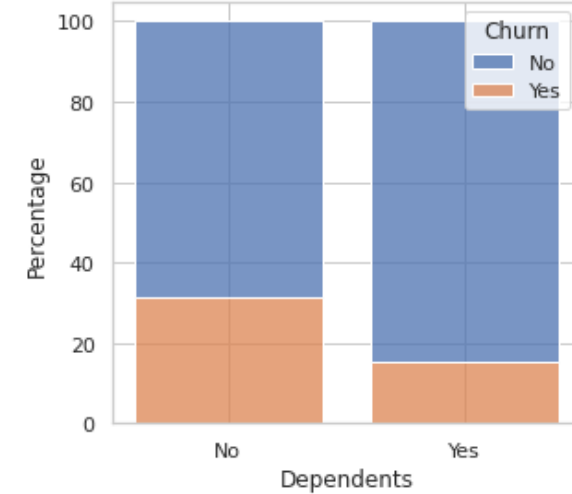
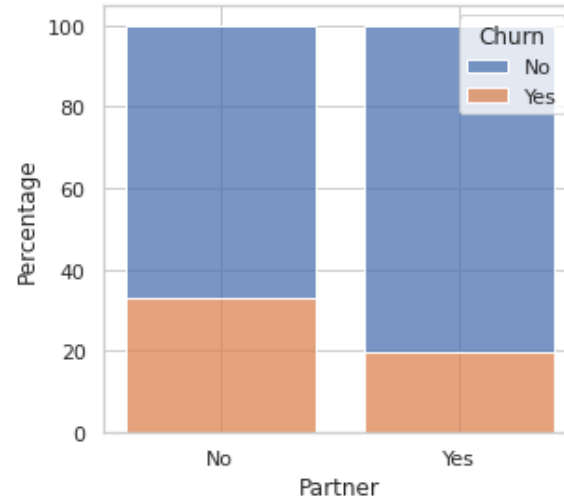
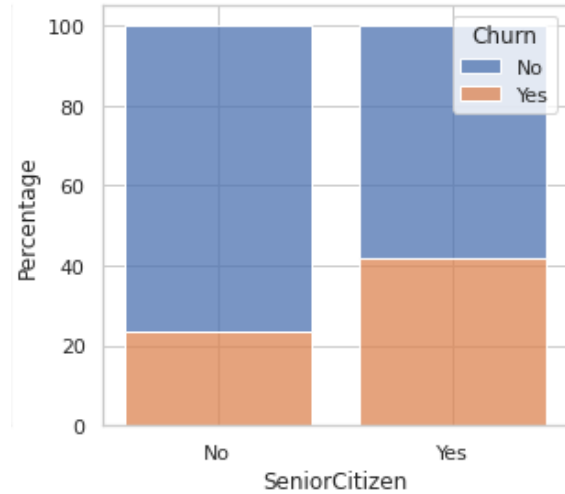
Additional Services

- OnlineSecurity (No internet service/Yes/No)
- OnlineBackup (No internet service/Yes/No)
- DeviceProtection (No internet service/Yes/No)
- TechSupport (No internet service/Yes/No)
- StreamingTV (No internet service/Yes/No)
- StreamingMovies (No internet service/Yes/No)

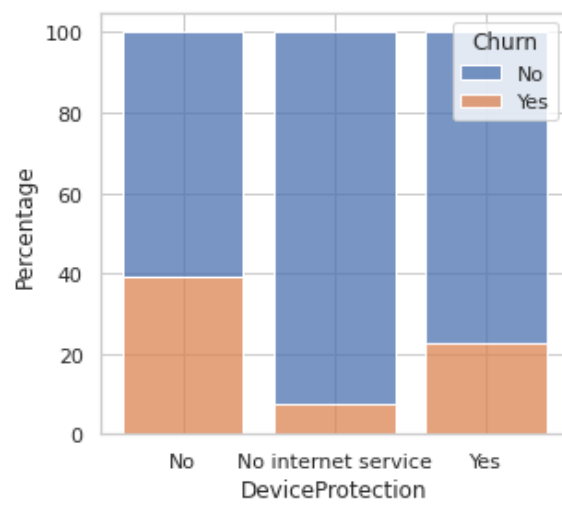
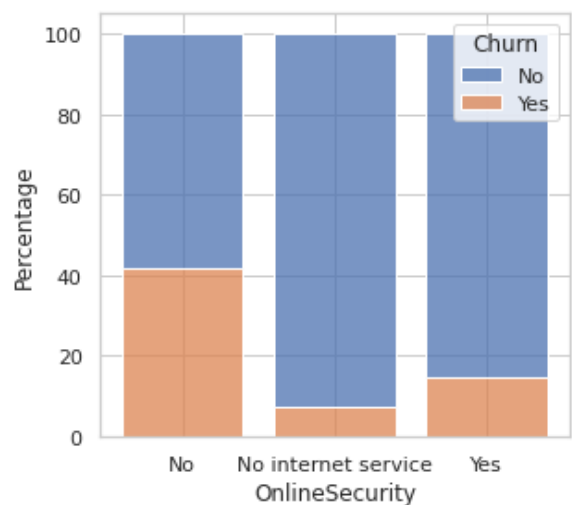
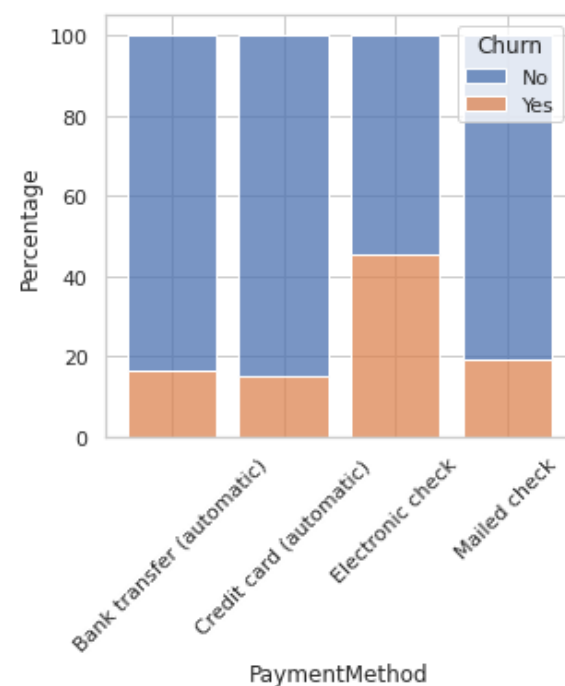
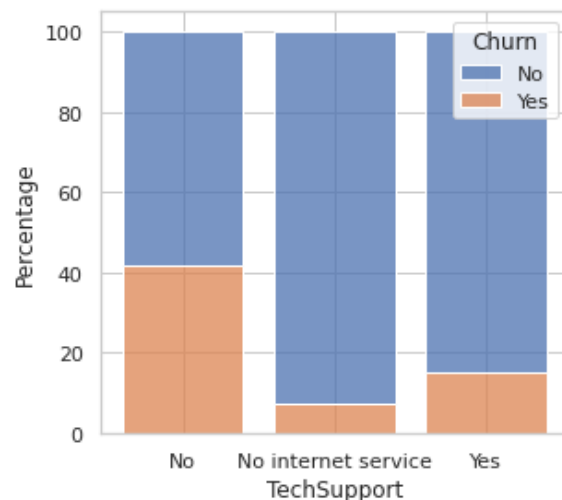
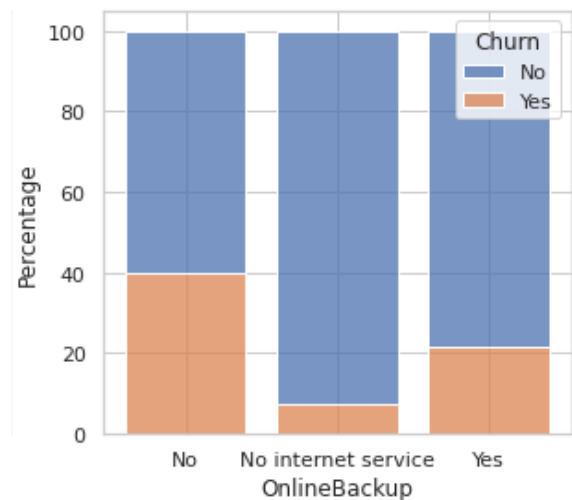
Churn vs Existing Customer Distribution



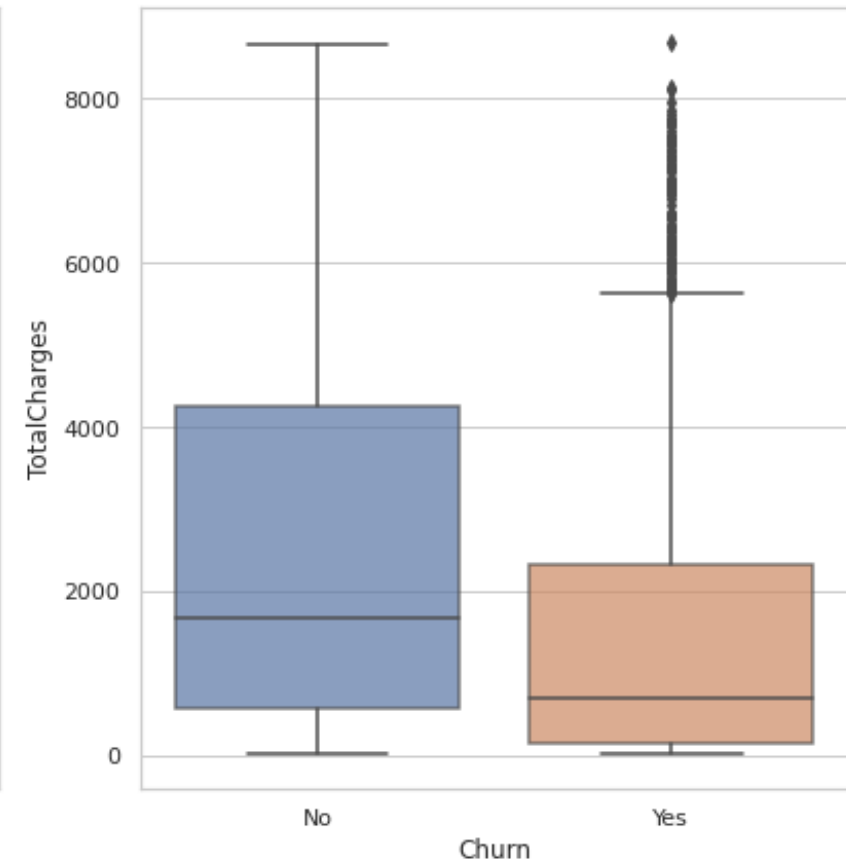
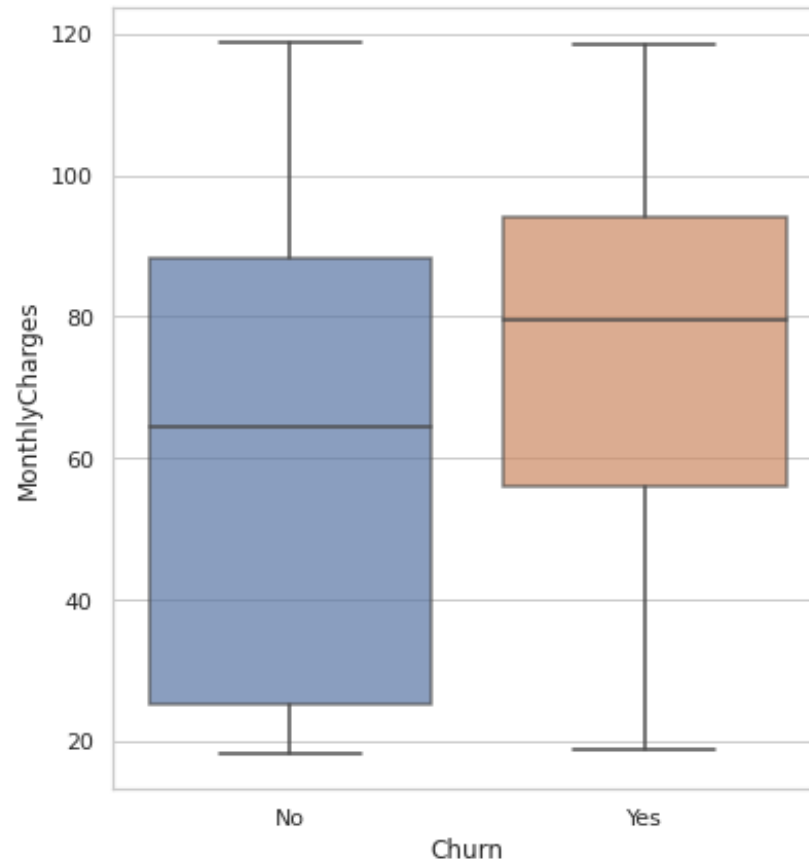
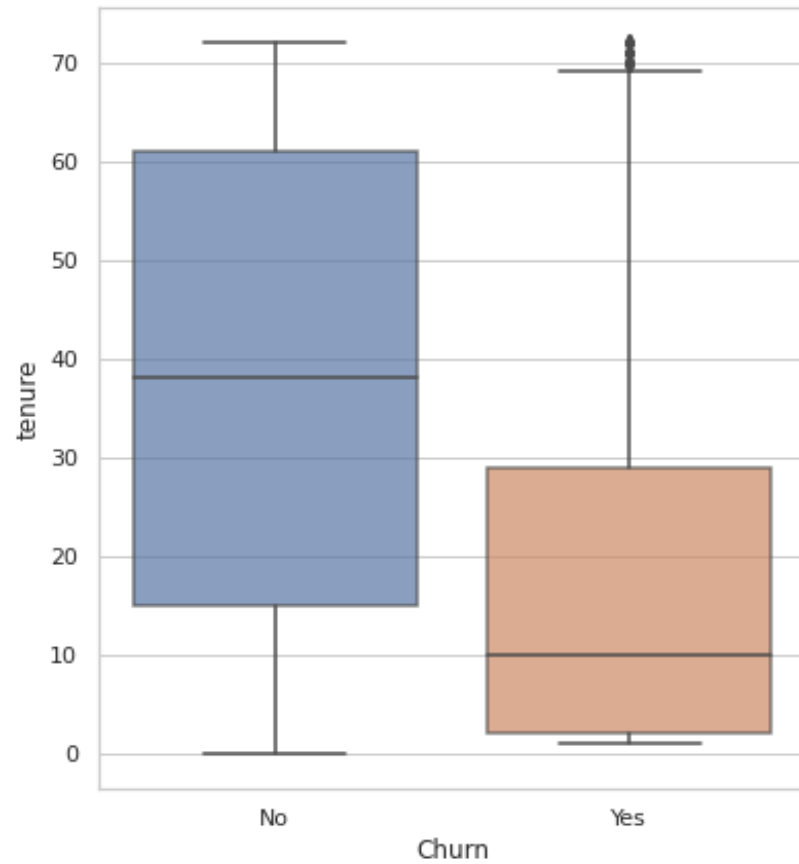
Churn Rate for Different Features



Churn Rate for Different Features



Data Distribution



Initial Ideas

Higher churn rate is observed within

- senior citizens
- customers who have *no* partner or *no* dependents
- customers who opt for paperless billing and electronic check
- customers with shorter contract term
- customers with less additional services

Most churned customers have

- shorter tenure
- shorter total charge (may due to short tenure)
- higher monthly charge

Predictive Modelling

Decision Tree Model

Prediction Power (F1 score)

0.7304

Recommendations

- Focus on existing customers who exhibit churning likelihood using the decision tree model
- Continue to collect more data
- Look for other features that can be included, such as location, data usage volume, call durations, satisfaction survey, and etc.



Refer to my notebook [HERE](#)
for the detailed work.