CHURN PREDICTION

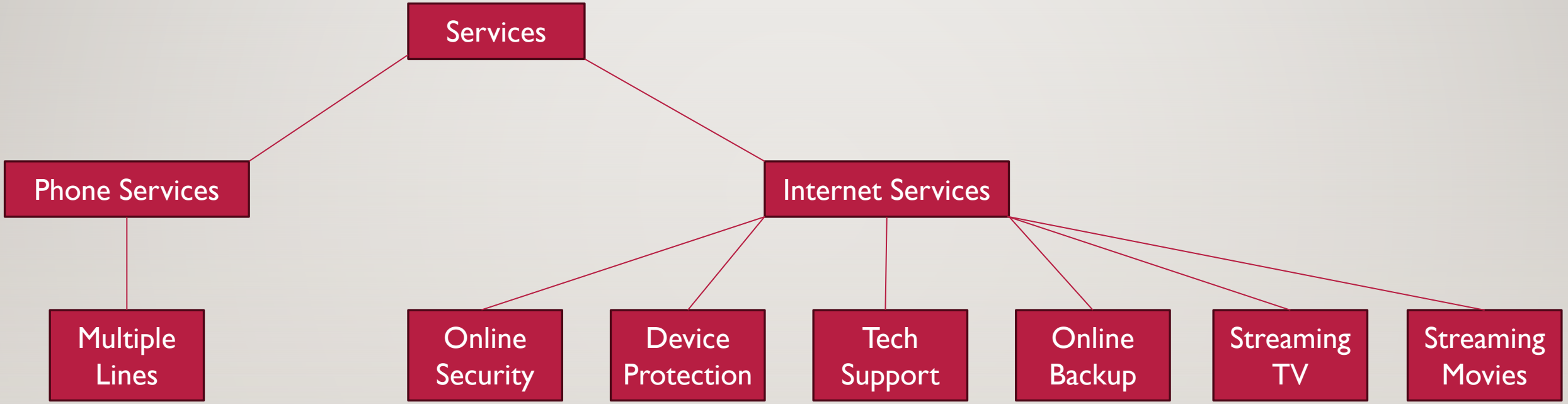
CONTENT

- 1- What is Churn?
- 2- What are Churn Segments?

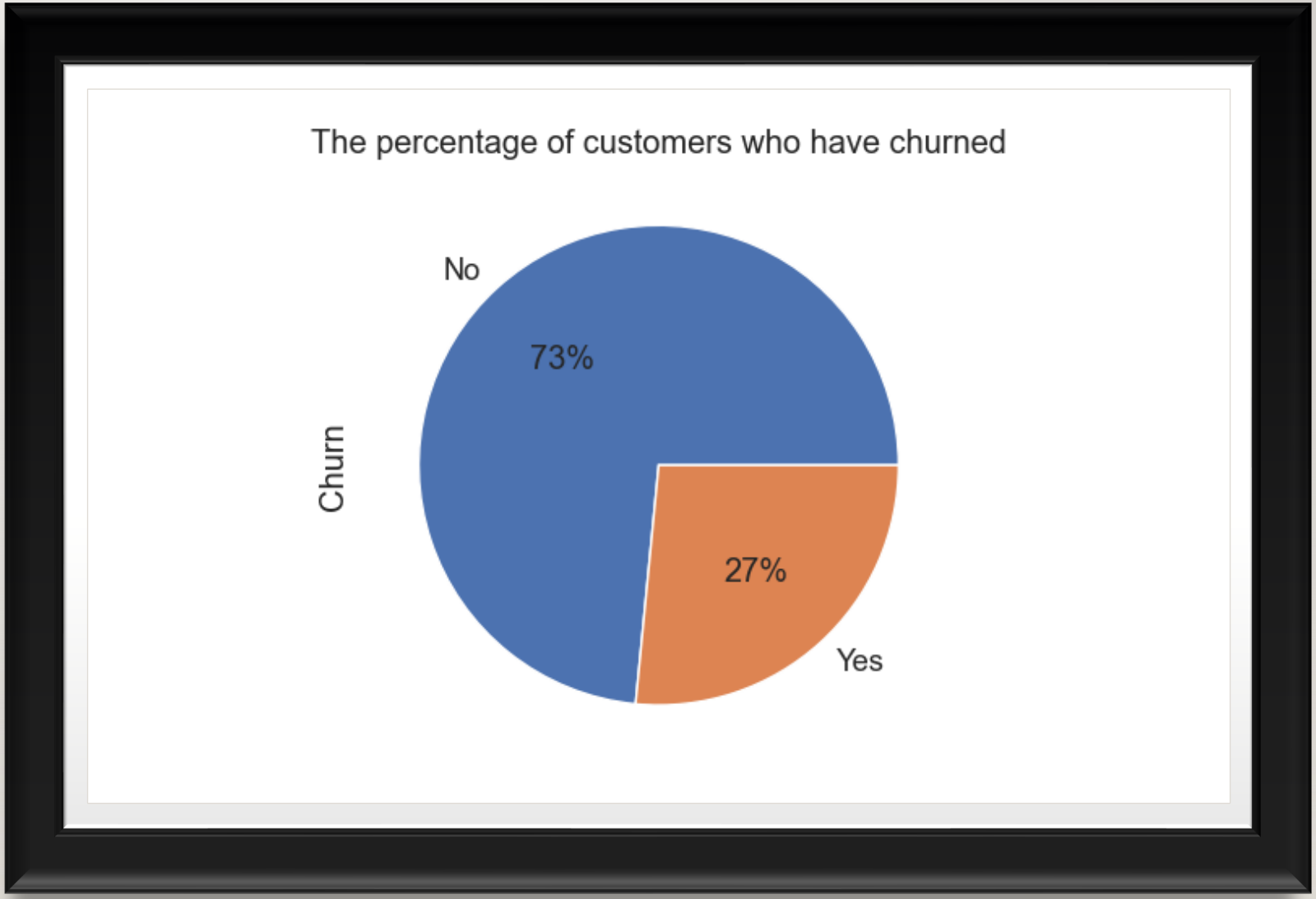
ABOUT THE DATA SET

- 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

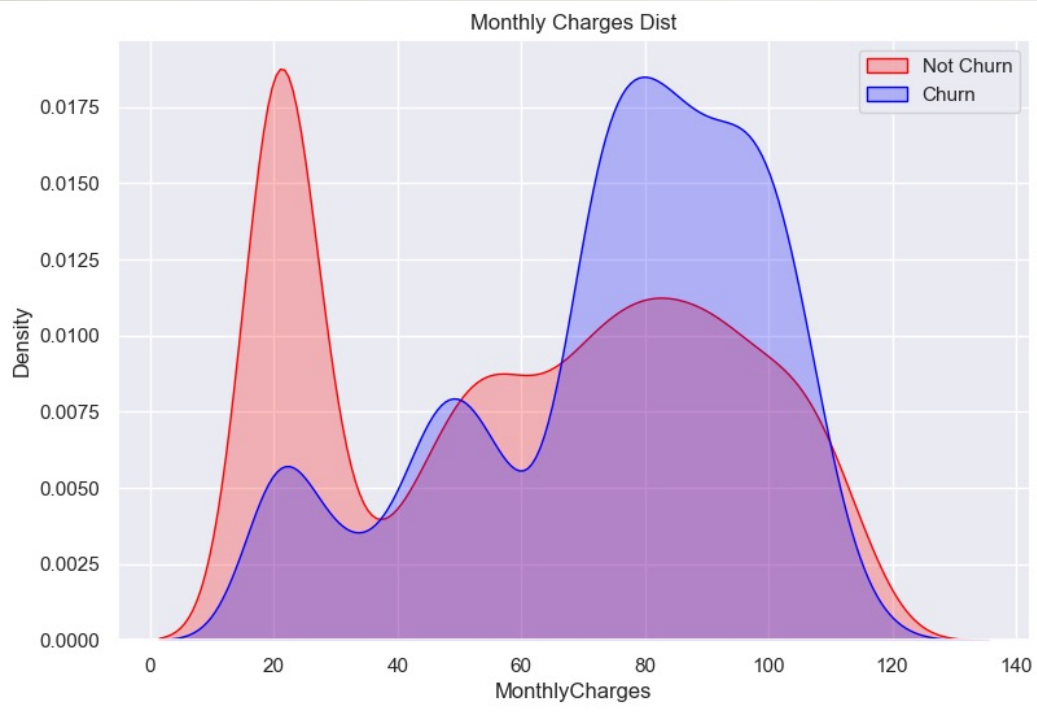
TYPES OF SERVICES

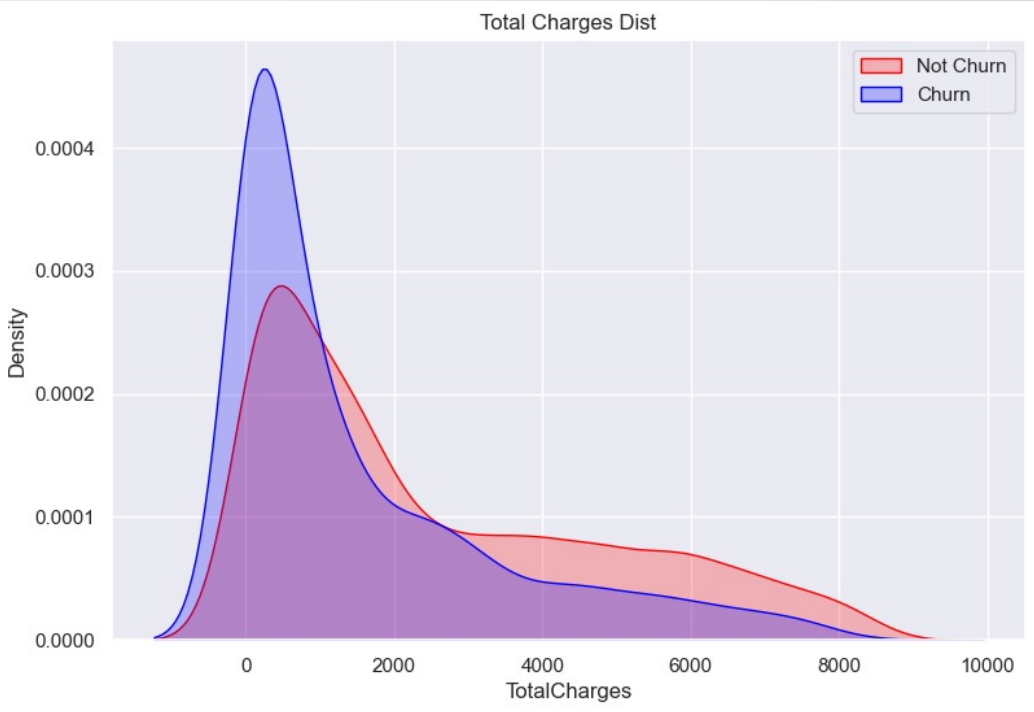


THE CHURN PRECENTAGE



MONTHLY CHARGERS AND TOTAL CHARGES



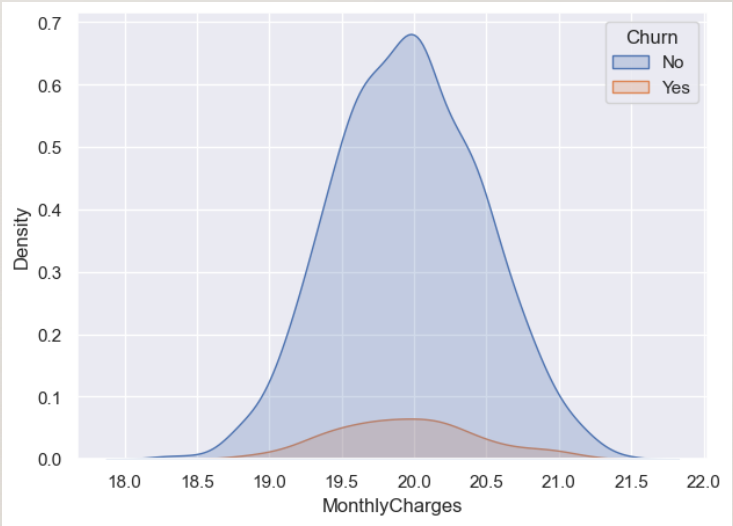


MONTHLY CHARGES FOR NO SERVICE CUSTOMERS

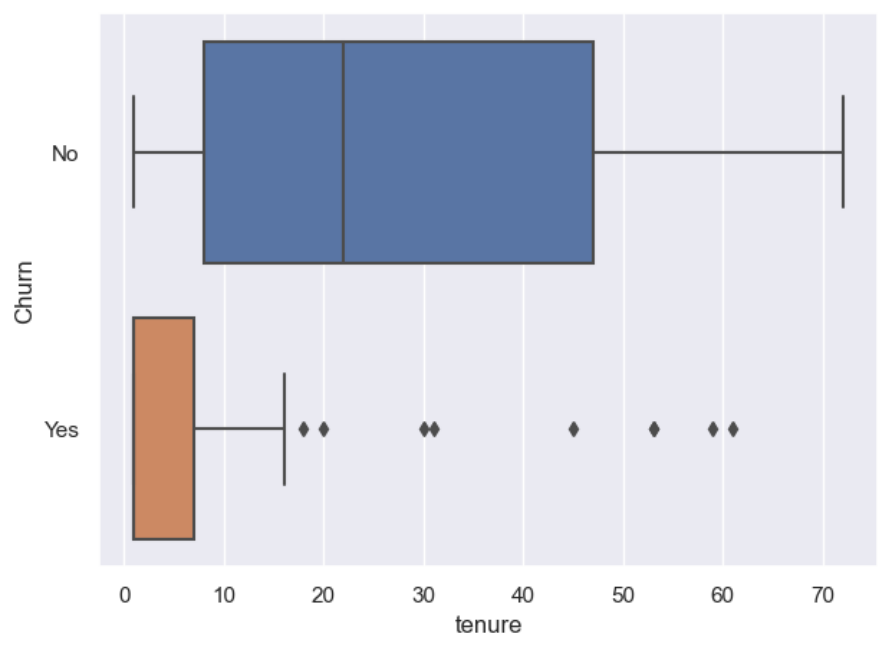
- The people who are doesn't have internet services and no MultipleLines, just have Phone services

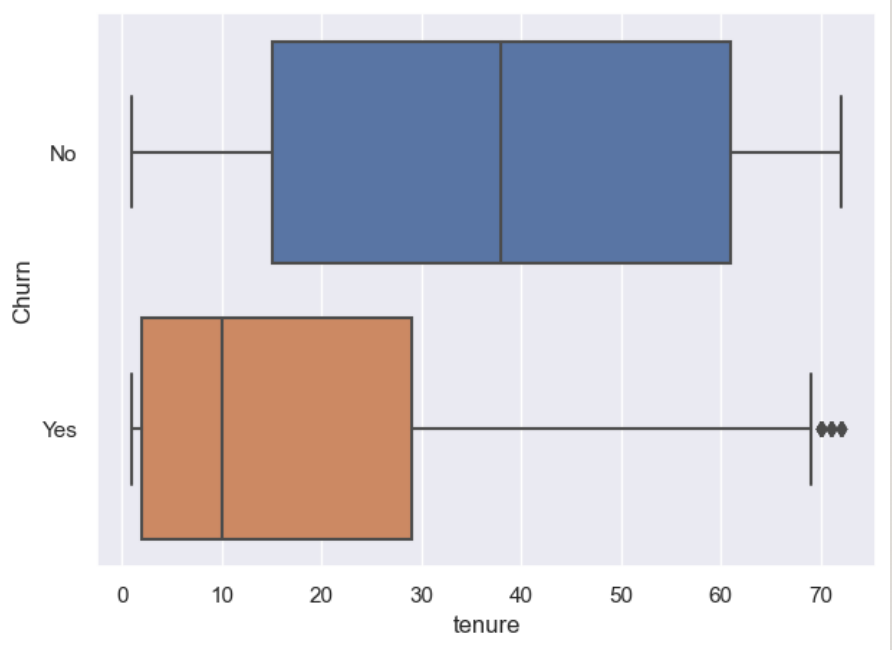
Customers have multiple lines

Customers have only Phone Services



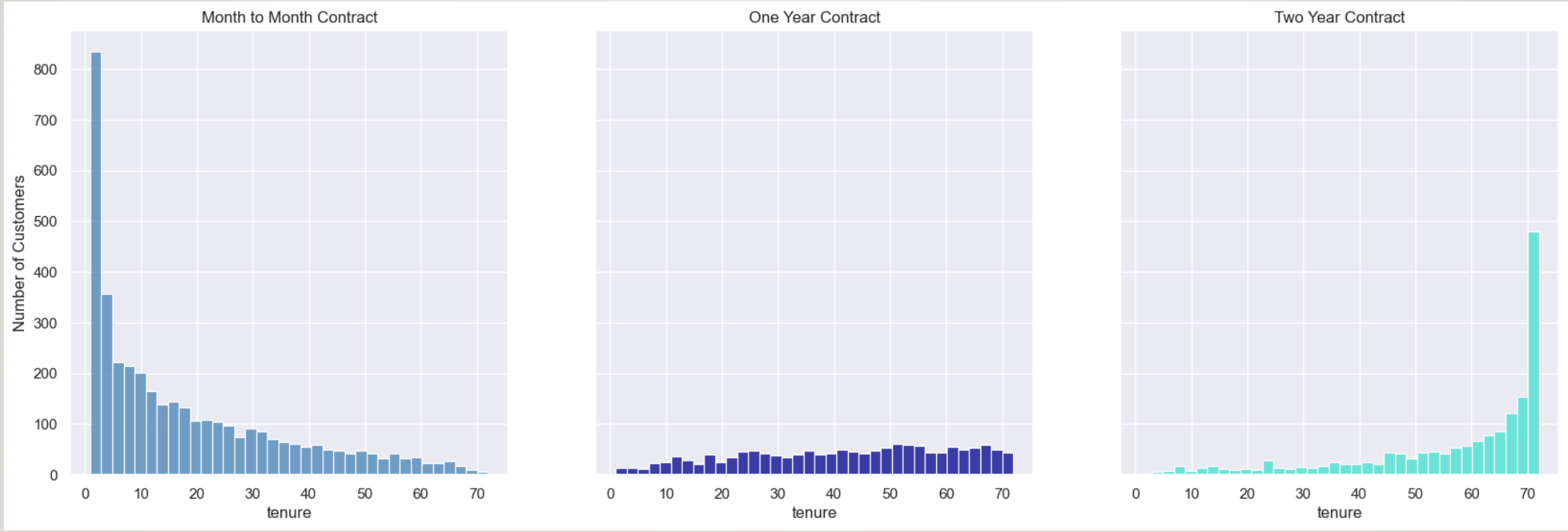
Customers have only Phone Services



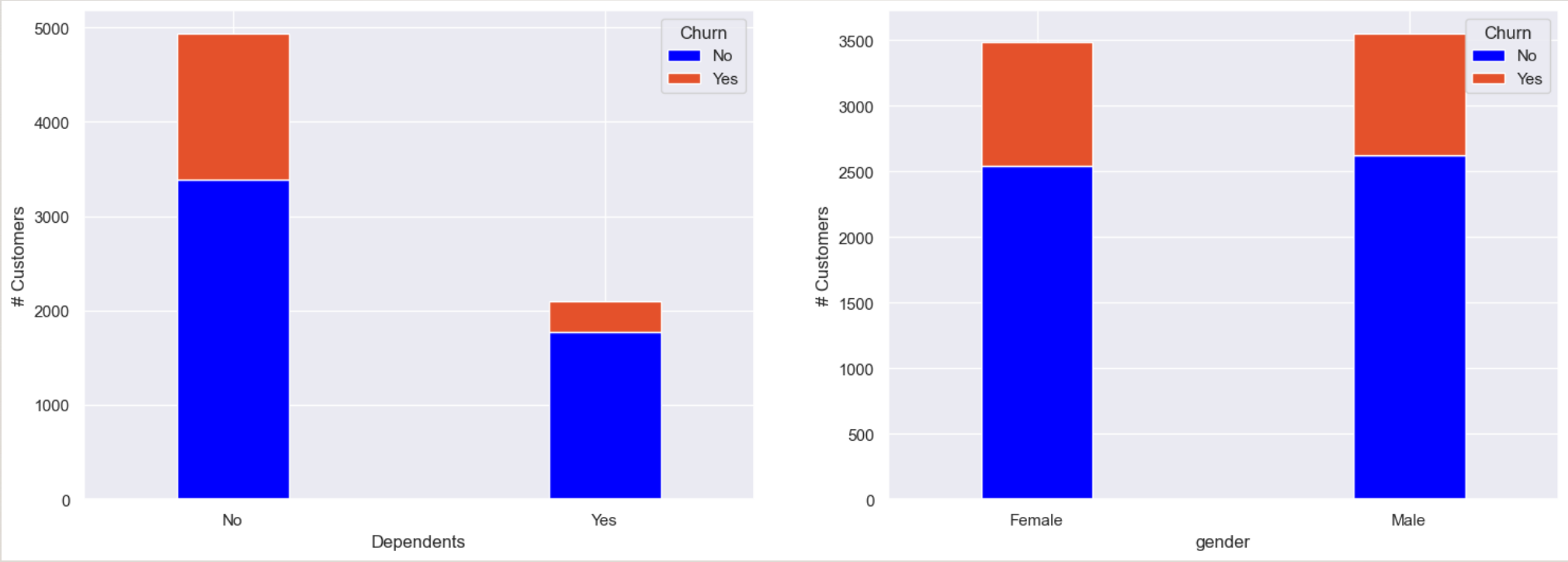


NO SERVICE CUSTOMER TENURE

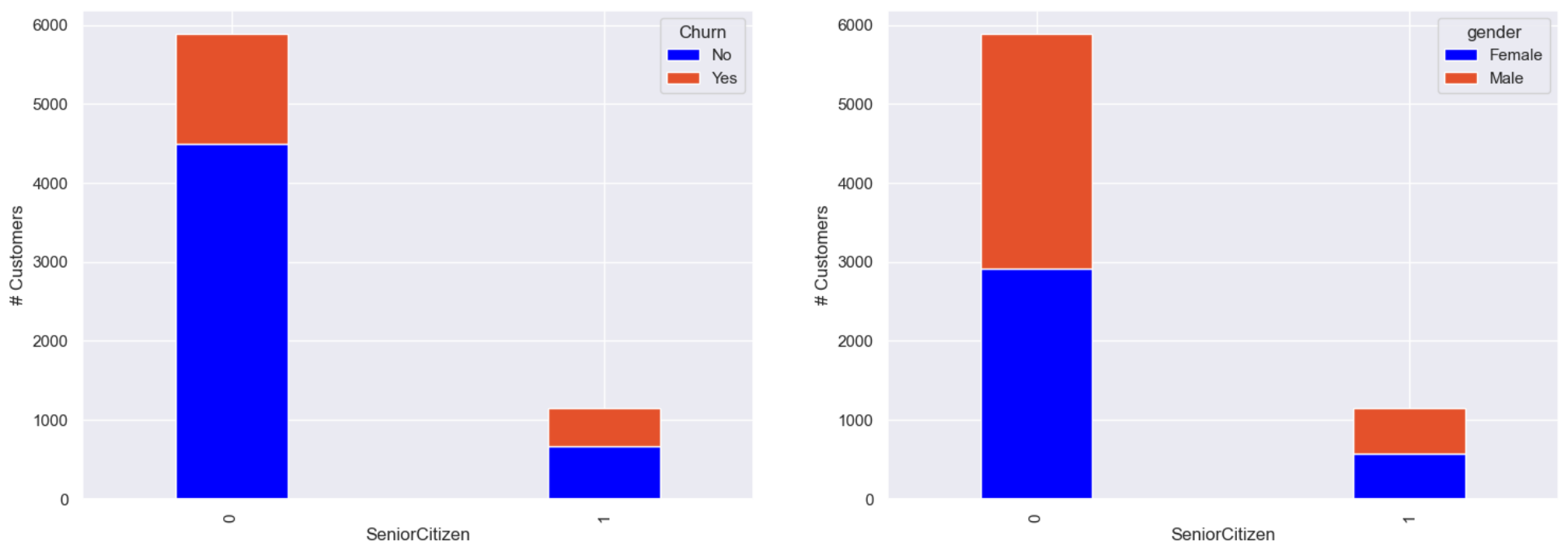
TENURE (HOW LONG THEY'VE BEEN A CUSTOMER)

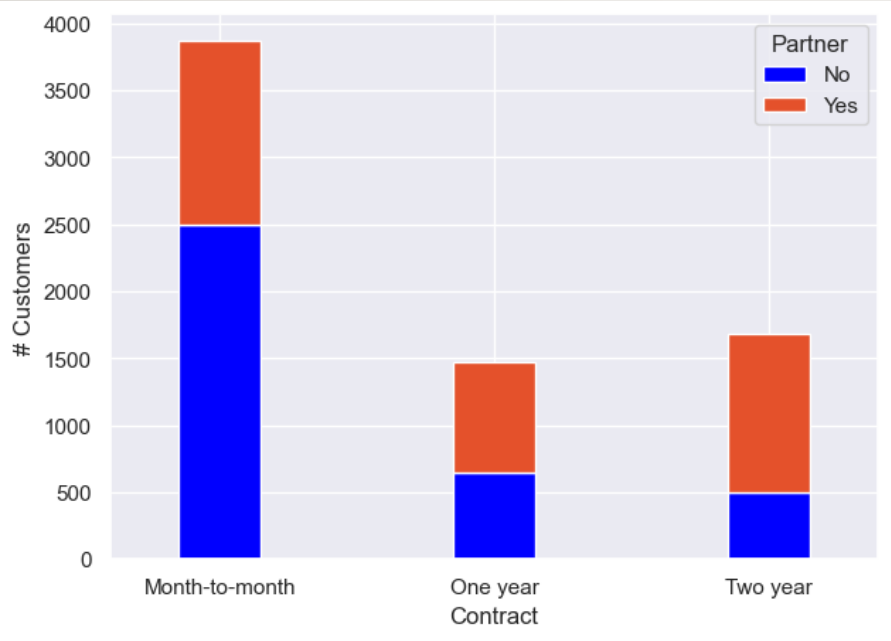


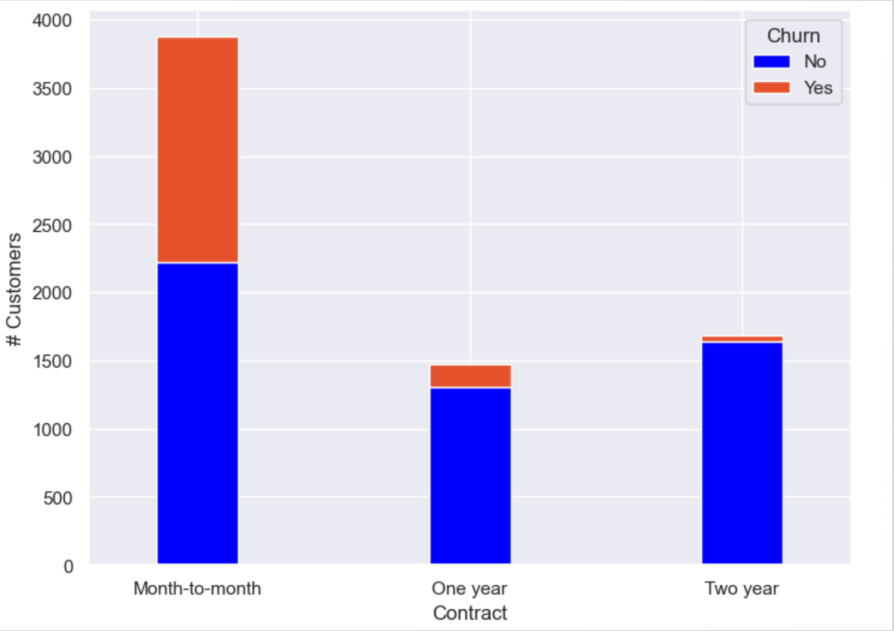
DEMOGRAPHIC WITH CHURN



SENIOR CITIZEN



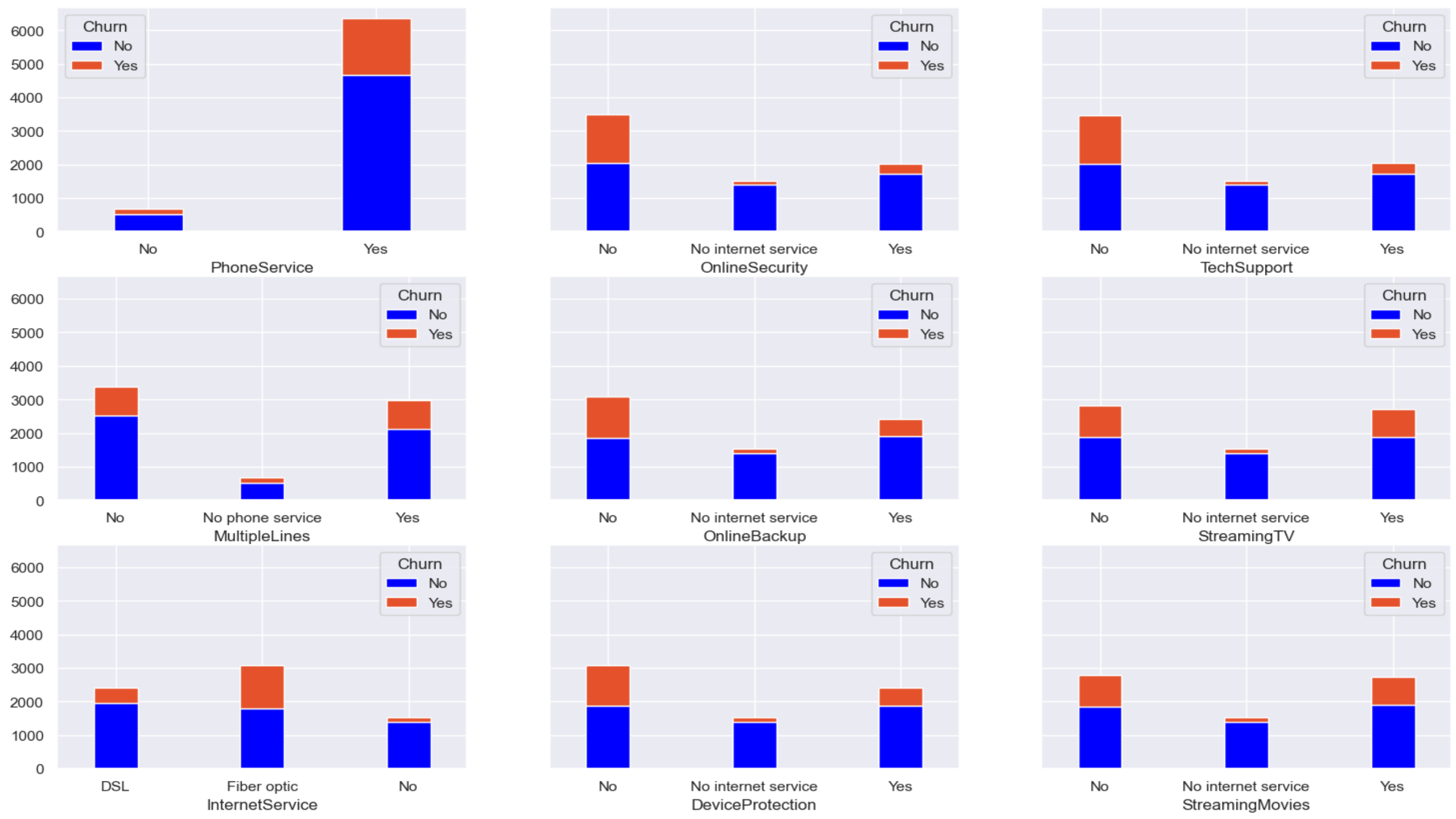




CONTRACT TYPE

WE NOTICE THAT MOST CHURNERS HAVE A CONTRACT MONTH-TO-MONTH.

INTERNET AND PHONE SERVICES

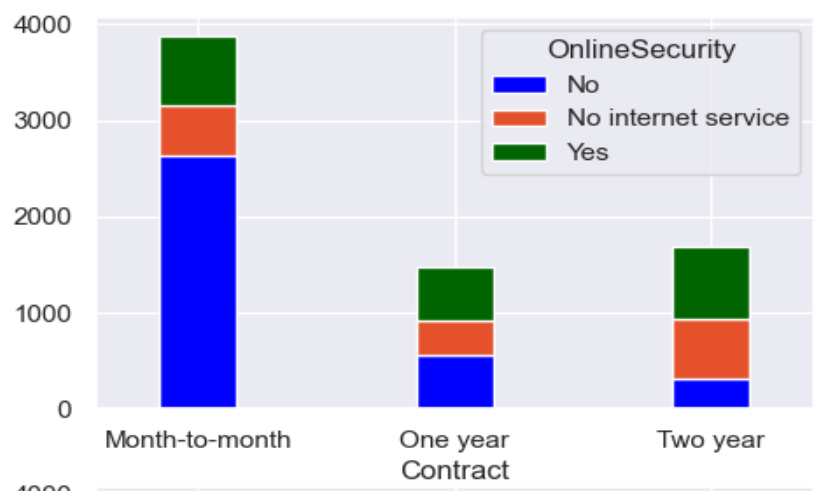

Churn
No
Yes
6000
5000
4000
3000
2000
1000
0
No
Yes
PhoneService
No
No internet service
Yes
OnlineSecurity
No
No internet service
Yes
TechSupport
No
No phone service
Yes
MultipleLines
No
No internet service
Yes
OnlineBackup
No
No internet service
Yes
StreamingTV
DSL
Fiber optic
No
InternetService
No
No internet service
Yes
DeviceProtection
No
No internet service
Yes
StreamingMovies

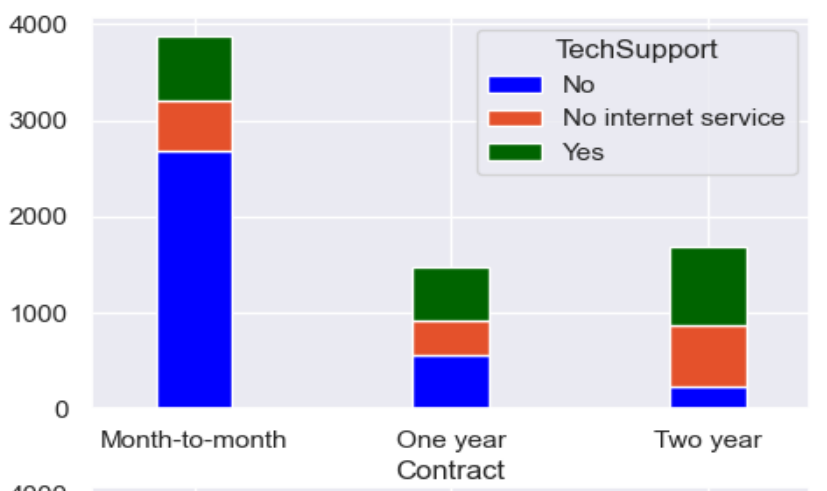
MONTHLY AND TOTAL CHARGES

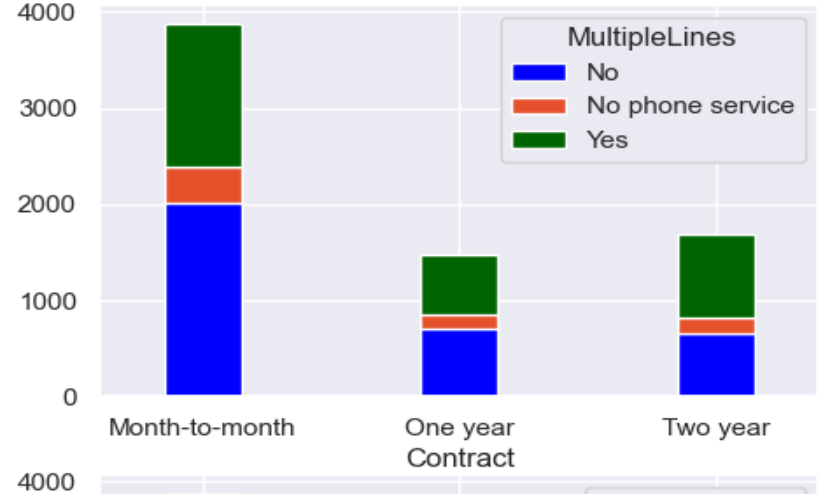
- We notice there is a positive correlation between them.

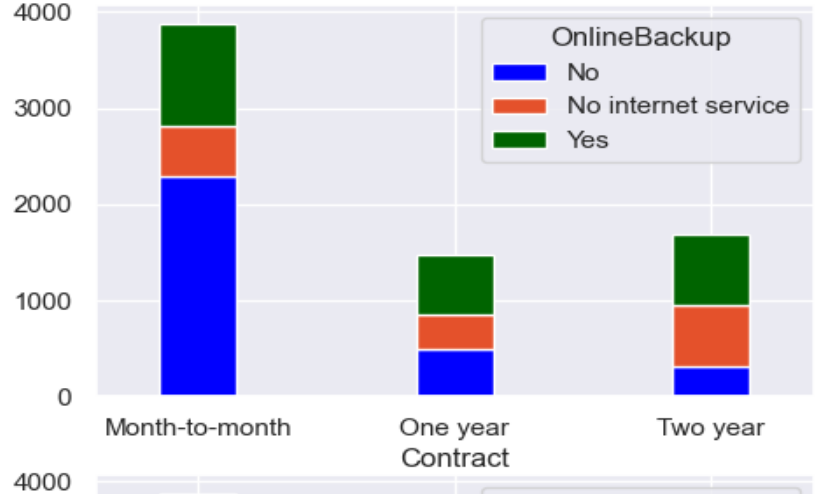
CONTRACT TYPE WITH SERVICES

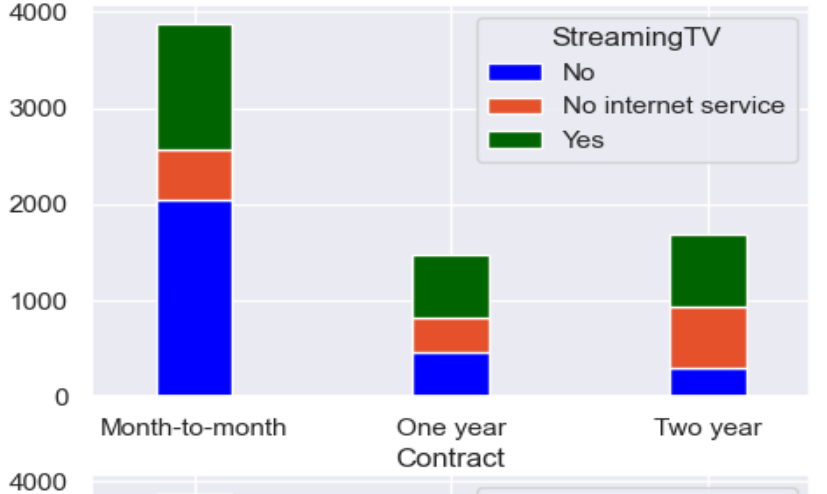
PhoneService
No
Yes
4000
3000
2000
1000
0
Month-to-month
One year
Two year
Contract

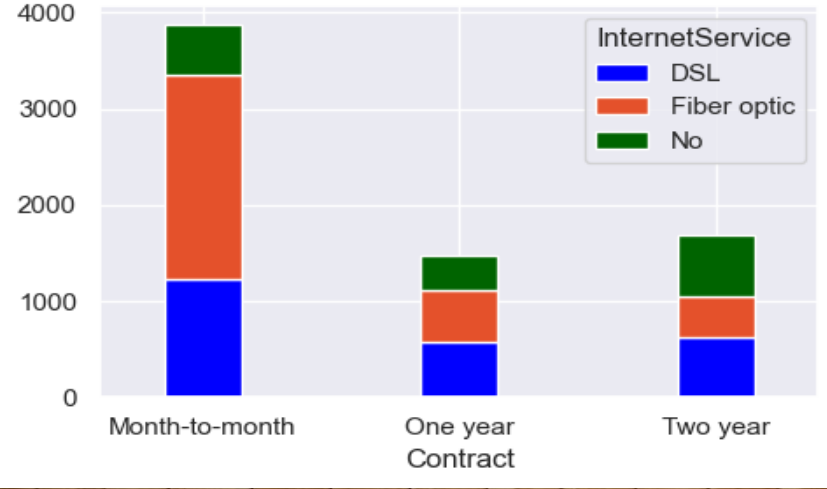

OnlineSecurity
No
No internet service
Yes
4000
3000
2000
1000
0
Month-to-month
One year
Two year
Contract

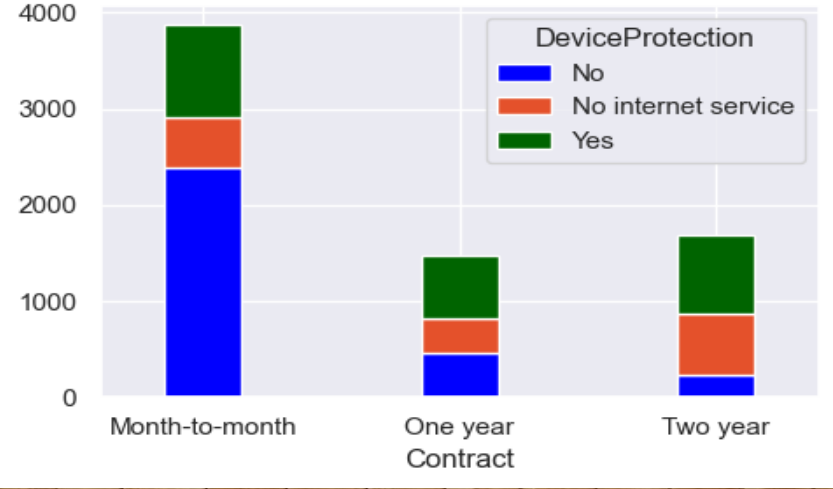

TechSupport
No
No internet service
Yes
4000
3000
2000
1000
0
Month-to-month
One year
Two year
Contract

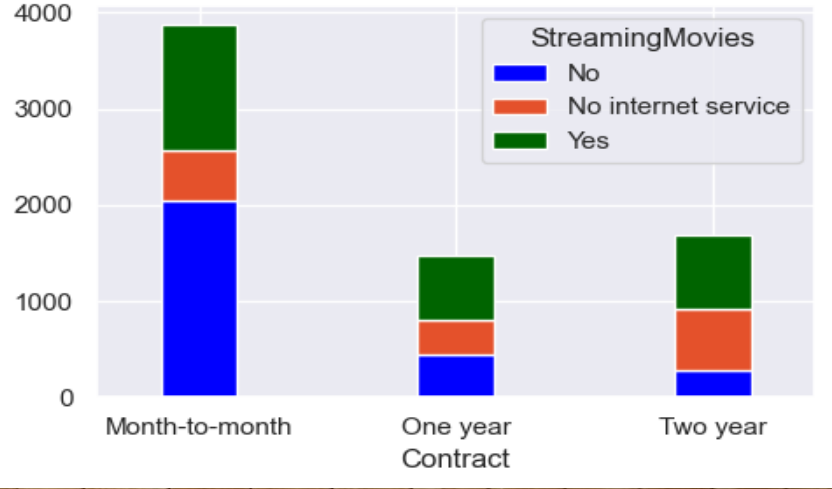

MultipleLines
No
No phone service
Yes
4000
3000
2000
1000
0
Month-to-month
One year
Two year
Contract


OnlineBackup
No
No internet service
Yes
4000
3000
2000
1000
0
Month-to-month
One year
Two year
Contract


StreamingTV
No
No internet service
Yes
4000
3000
2000
1000
0
Month-to-month
One year
Two year
Contract

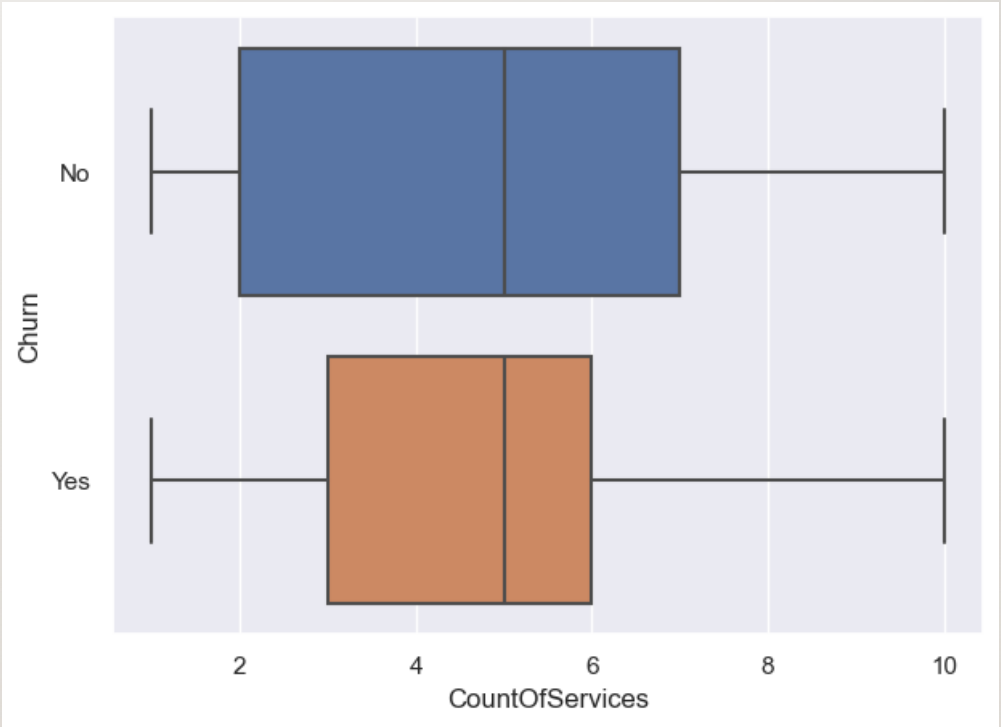

InternetService
DSL
Fiber optic
No
4000
3000
2000
1000
0
Month-to-month
One year
Two year
Contract


DeviceProtection
No
No internet service
Yes
4000
3000
2000
1000
0
Month-to-month
One year
Two year
Contract

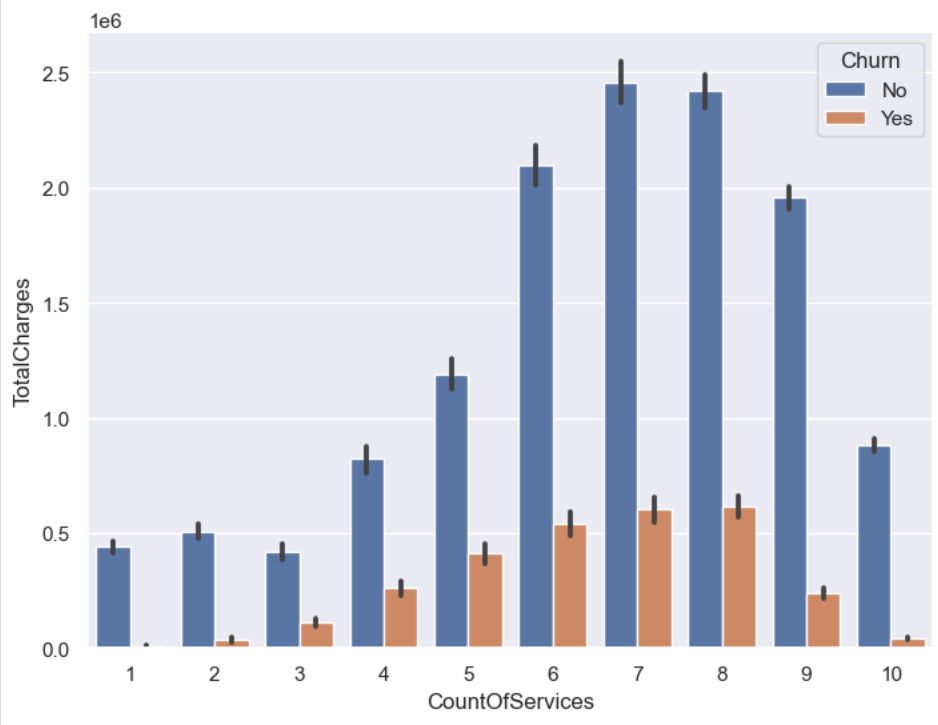

StreamingMovies
No
No internet service
Yes
4000
3000
2000
1000
0
Month-to-month
One year
Two year
Contract

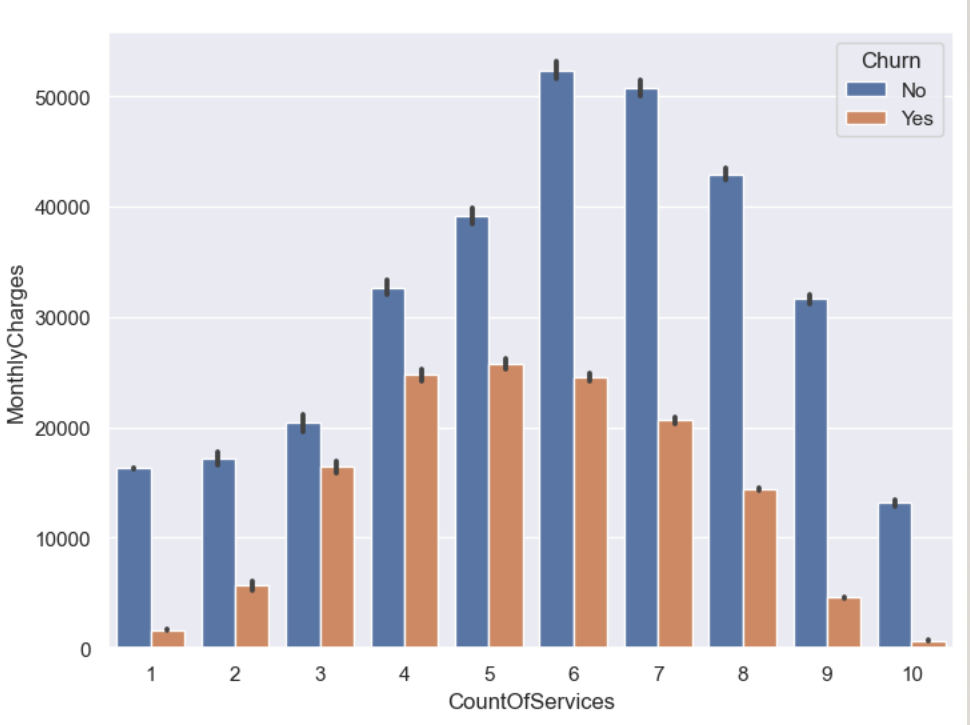
COUNT OF SERVICES

- We notice that the customers has count of services from 3 to 6 are likely to churn



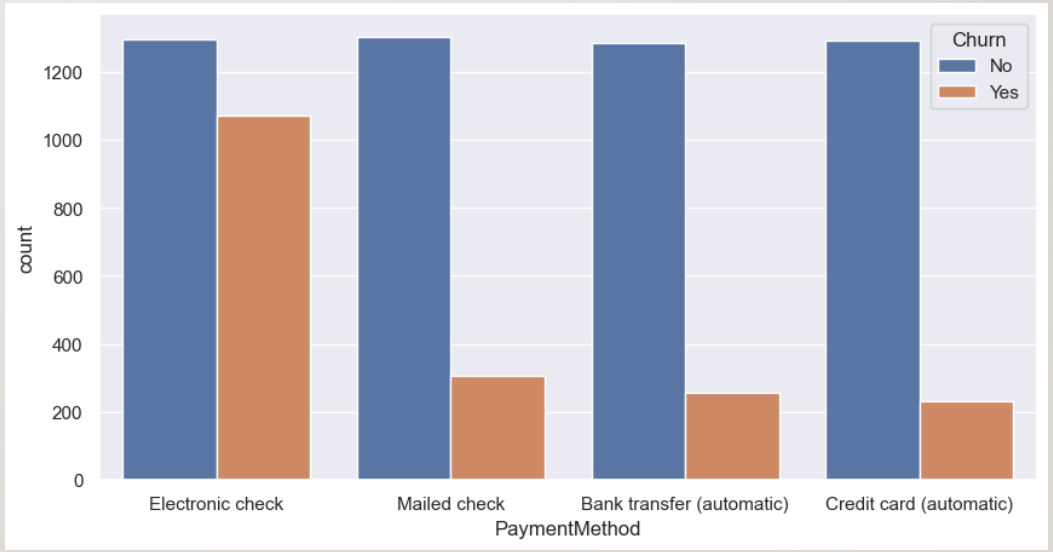
COUNT OF SERVICES WITH MONTHLY AND TOTAL CHARGES





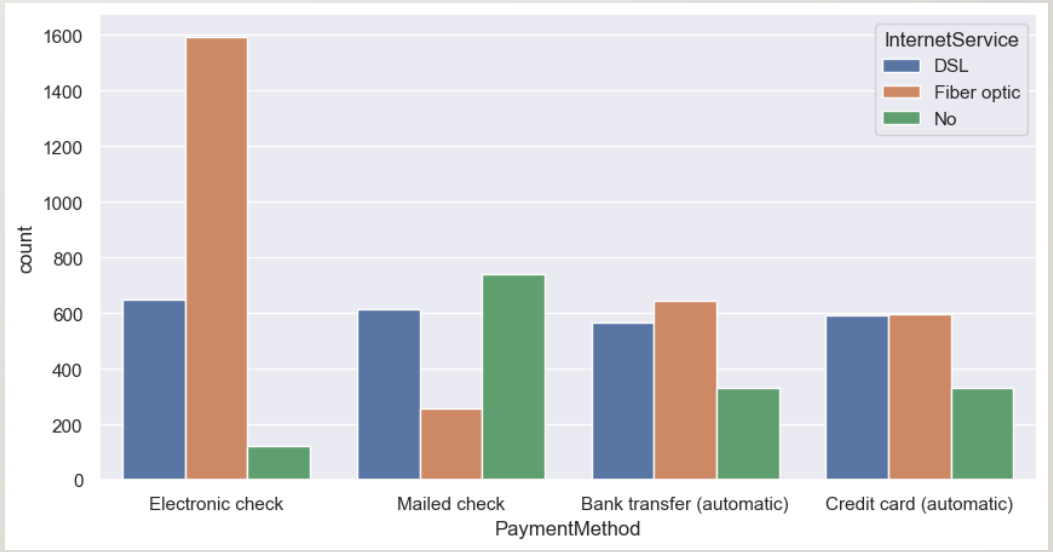
PAYMENT METHOD WITH CHURN

- We notice here the churners make an Electronic check , let's see why ?



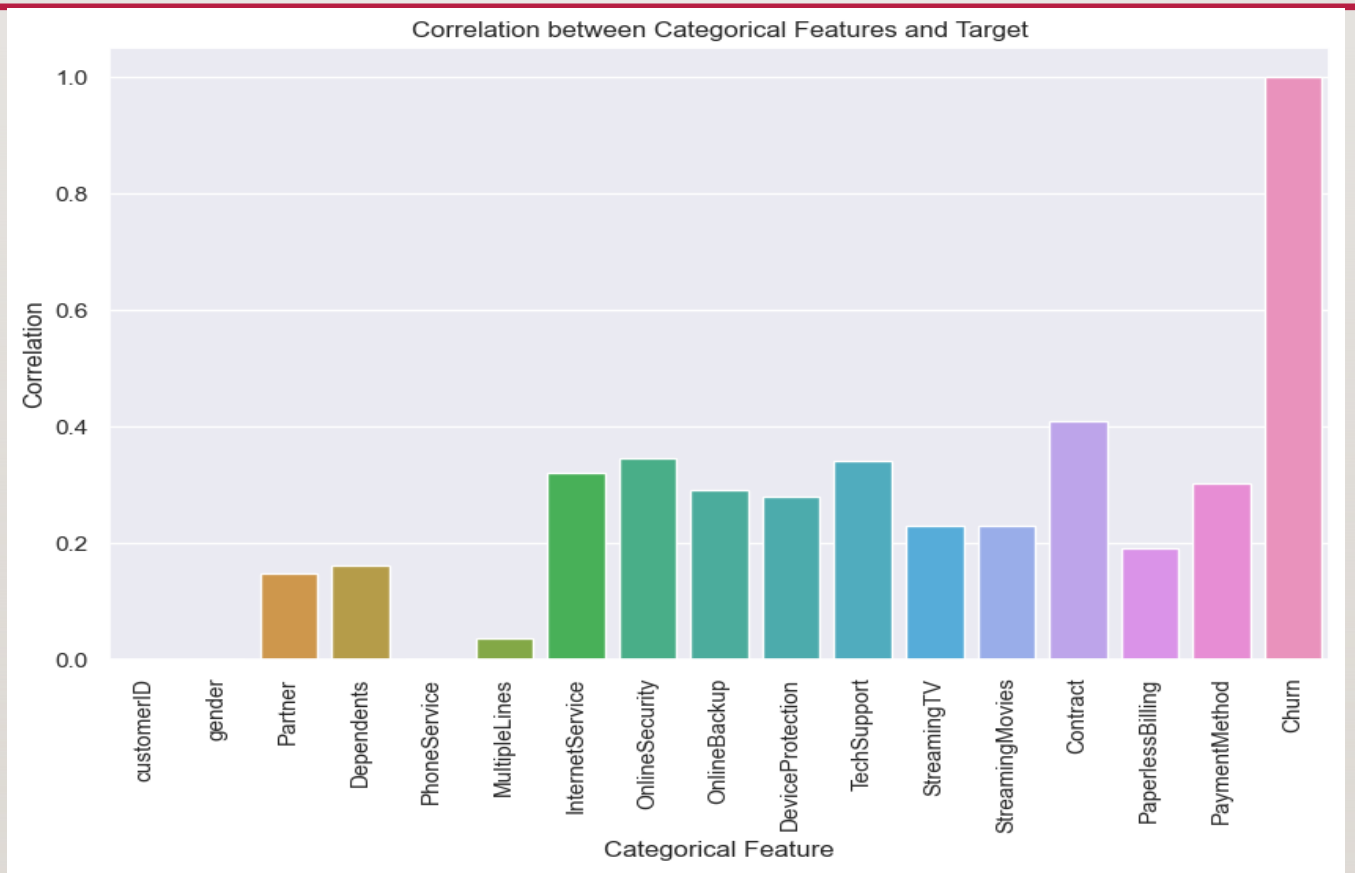
PAYMENT METHOD WITH INTERNET SERVICES

- Most of them make a Fiper optic service

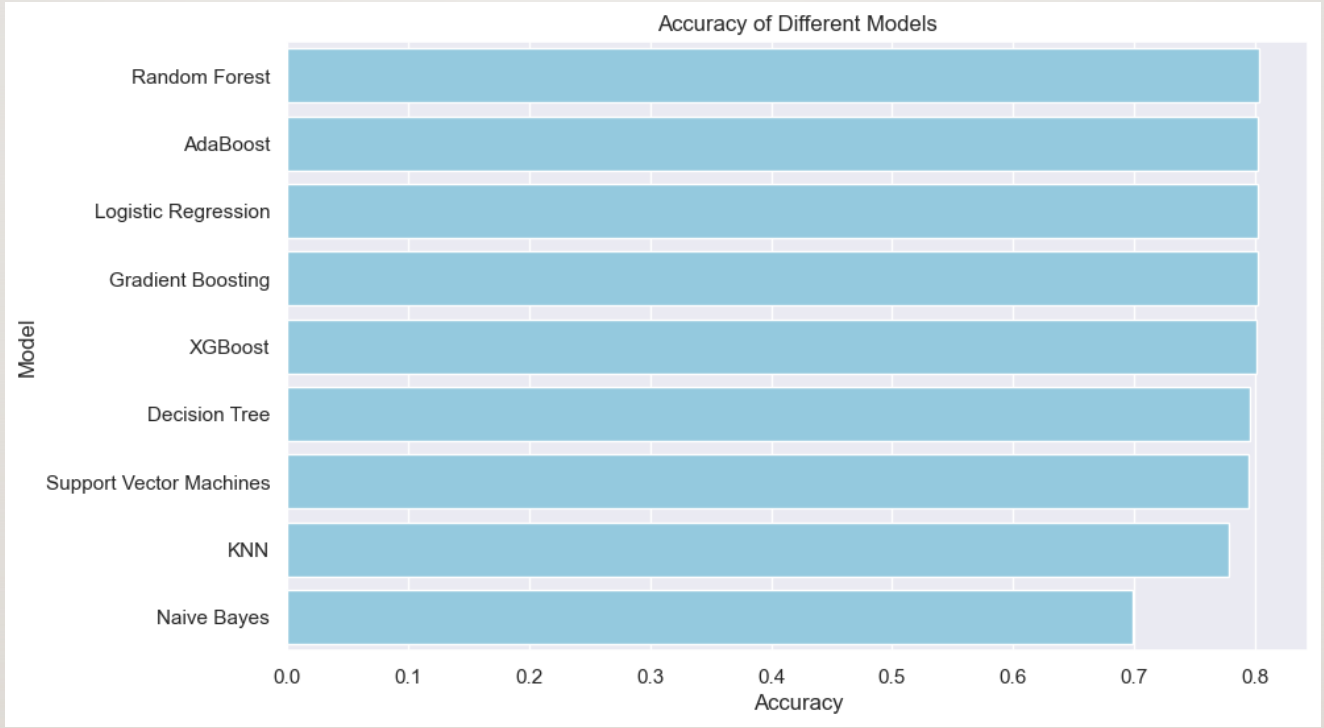


MODEL BUILDING

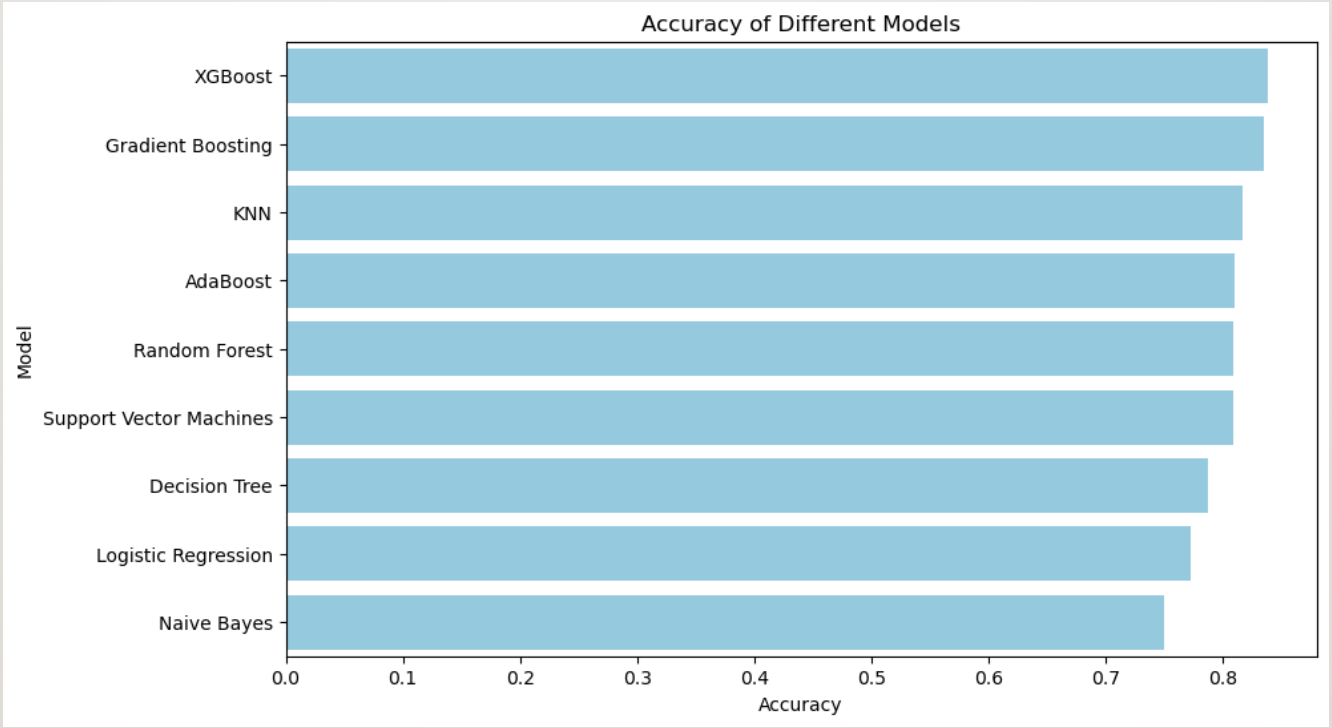
CORRELATION BETWEEN THE TARGET AND CATEGORICAL VALUES



CROSS VALIDATION AND HYPER PARAMETERS TUNING AND MODEL SELECTION



APPLYING SMOTE TO SOLVE IMBALANCED CLASSES PROBLEM



THANK YOU FOR LISTENING ☺
HAPPY DEPLOYMENT