Customer Churn Presentation

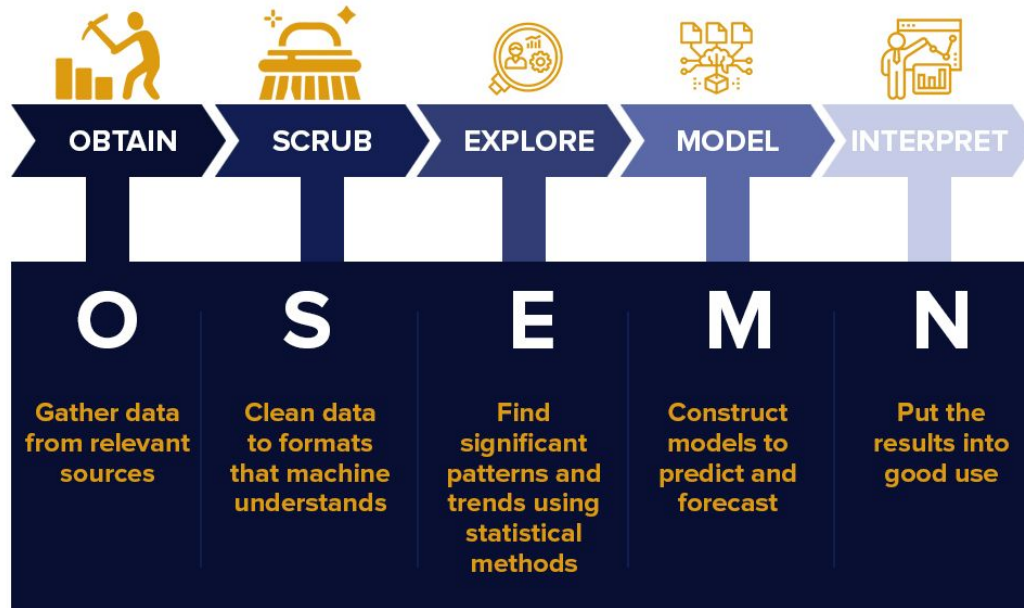Presented by: Helen Pham

Background

- Customer churn is the percentage of customers that stopped using a company's product or service during a certain time frame

- Average churn rates: 2% - 8% annually

- Telecommunications companies: 10% - 67% annually

Objectives

- Understand why customers tend to churn

- Build a classifier to predict whether a customer will stop doing business with SyriaTel

- Find out what SyriaTel can do to prevent or minimize churn rate

OSEMN

Data Science Process

| OBTAIN	SCRUB	EXPLORE	MODEL	INTERPRET
O	**S**	**E**	**M**	**N**
Gather data from relevant sources	Clean data to formats that machine understands	Find significant patterns and trends using statistical methods	Construct models to predict and forecast	Put the results into good use

Obtain

- Dataset from Kaggle
- 3333 customers
- Info included
  - State
  - Account length
  - International and voicemail plans
  - Total calls, minutes, and charges throughout different time periods in a day

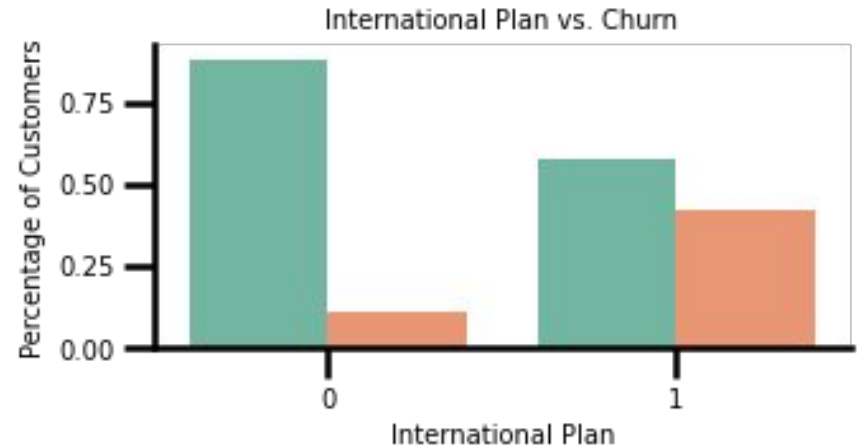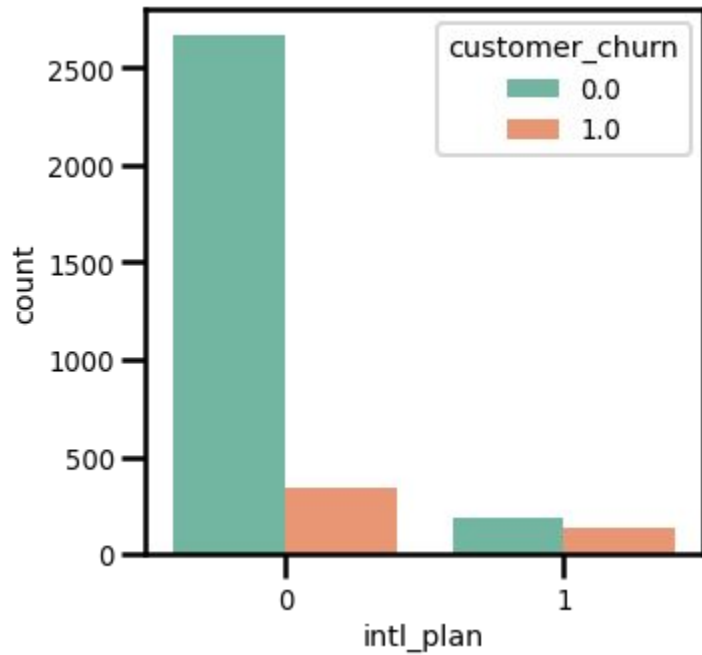# Scrub & Explore: Account Length

- Mean for Not Churn : 3.36
- Std Dev for Not Churn : 1.33
- Mean for Churn : 3.42
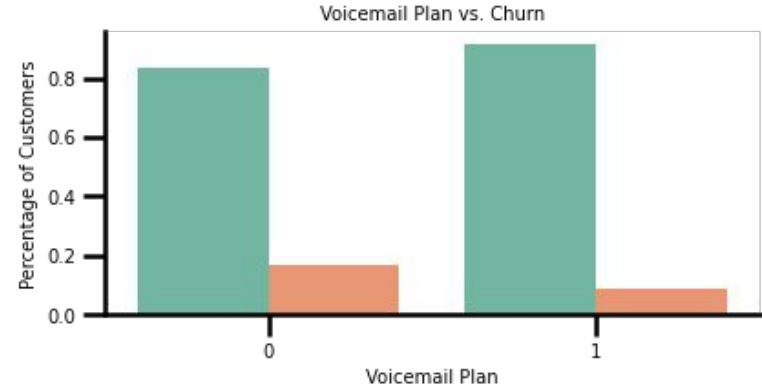- Std Dev for Churn : 1.32

Account Length (Month) Count
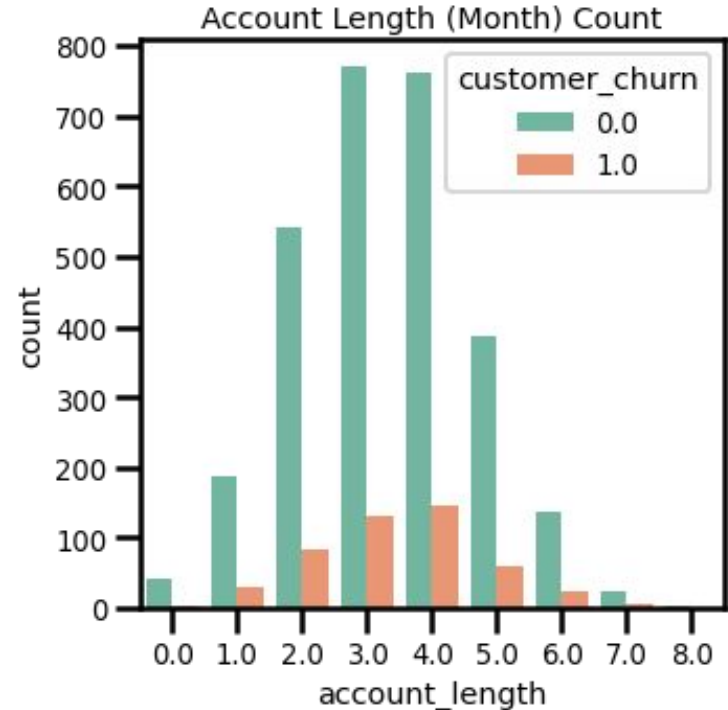
Scrub & Explore: States

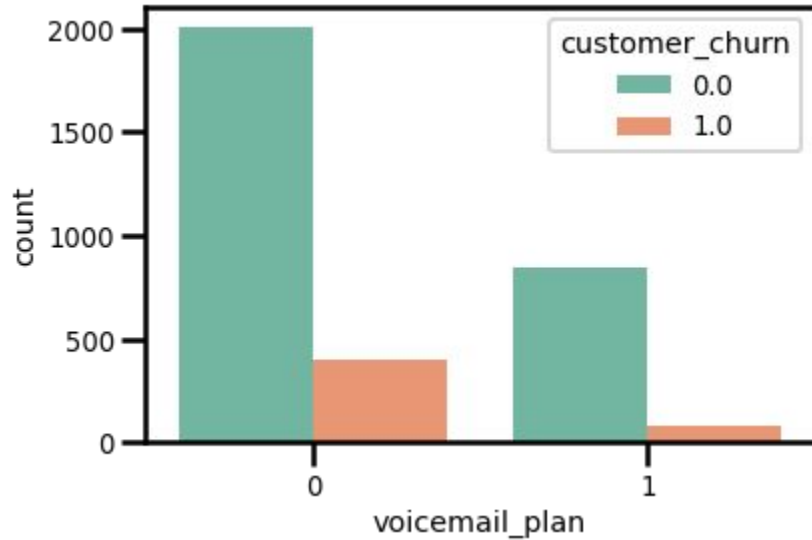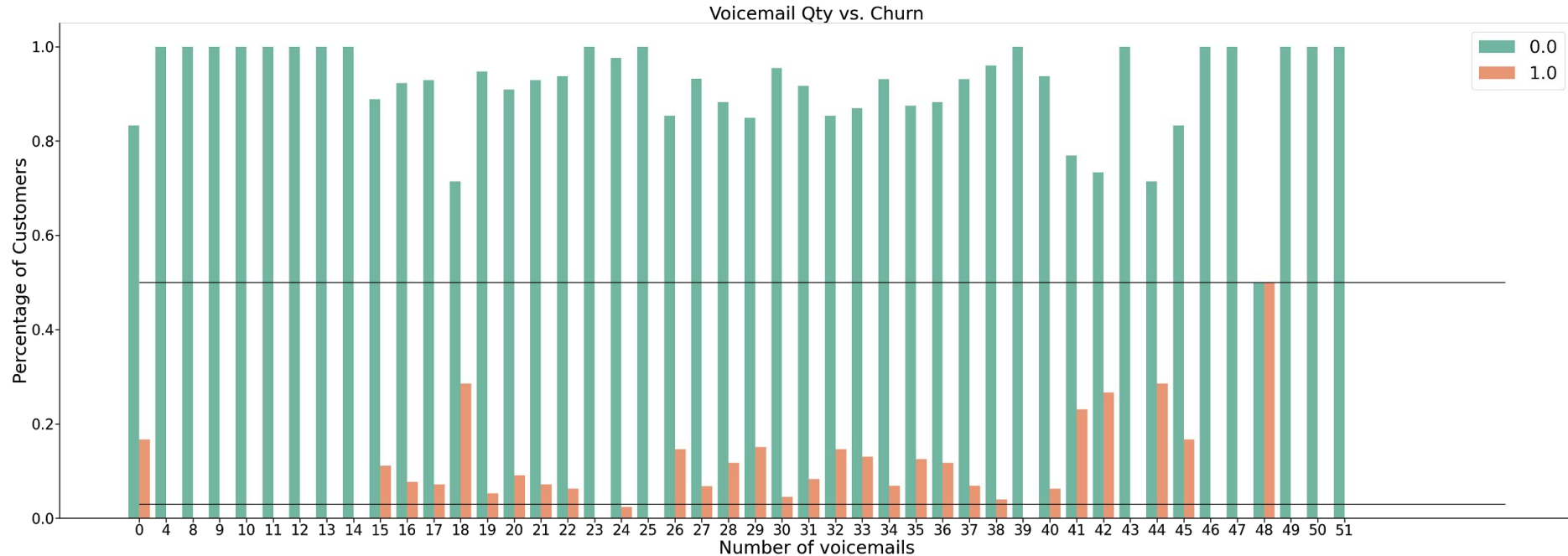Churn By State
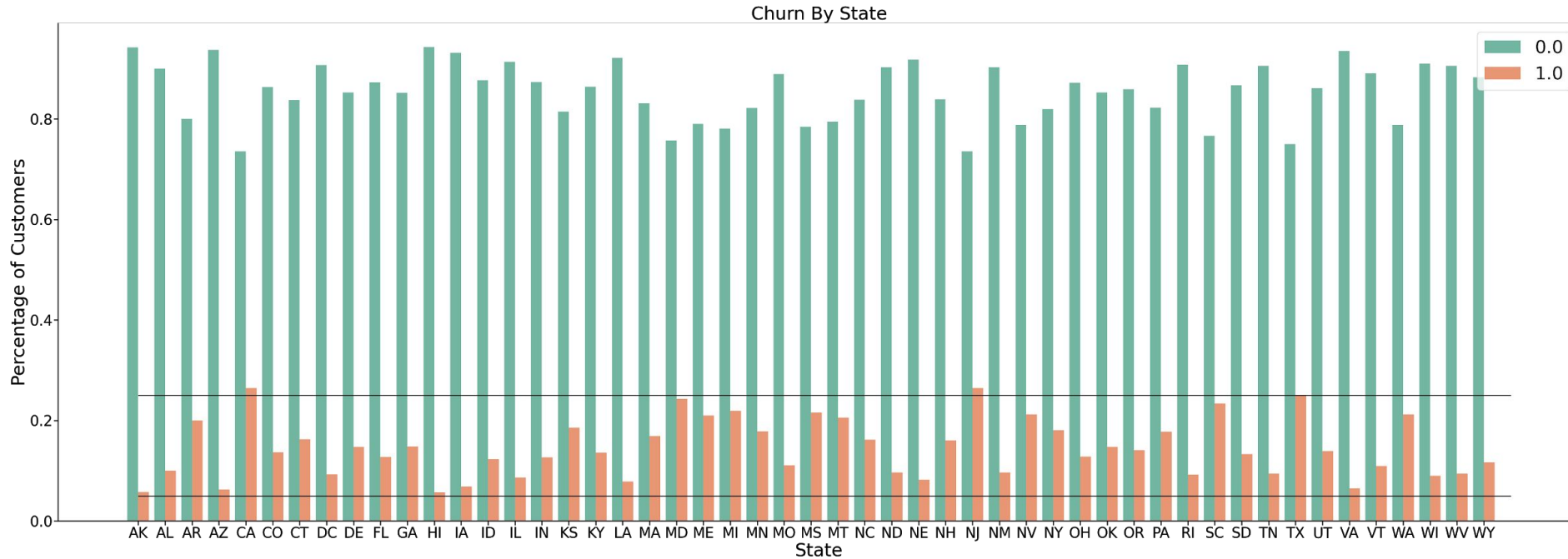
Scrub & Explore: International Plan

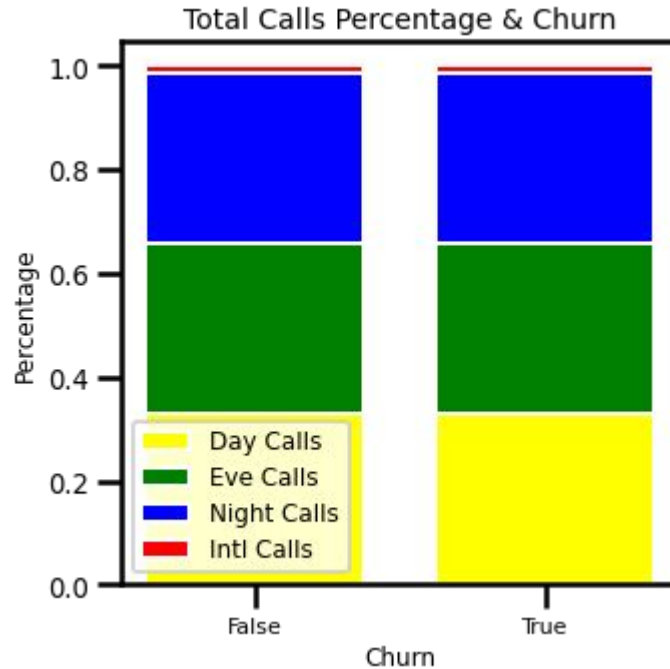# Scrub & Explore: Voicemail Plan

Scrub & Explore: Voicemail Messages

Voicemail Qty vs. Churn

Scrub & Explore: Customer Service Calls
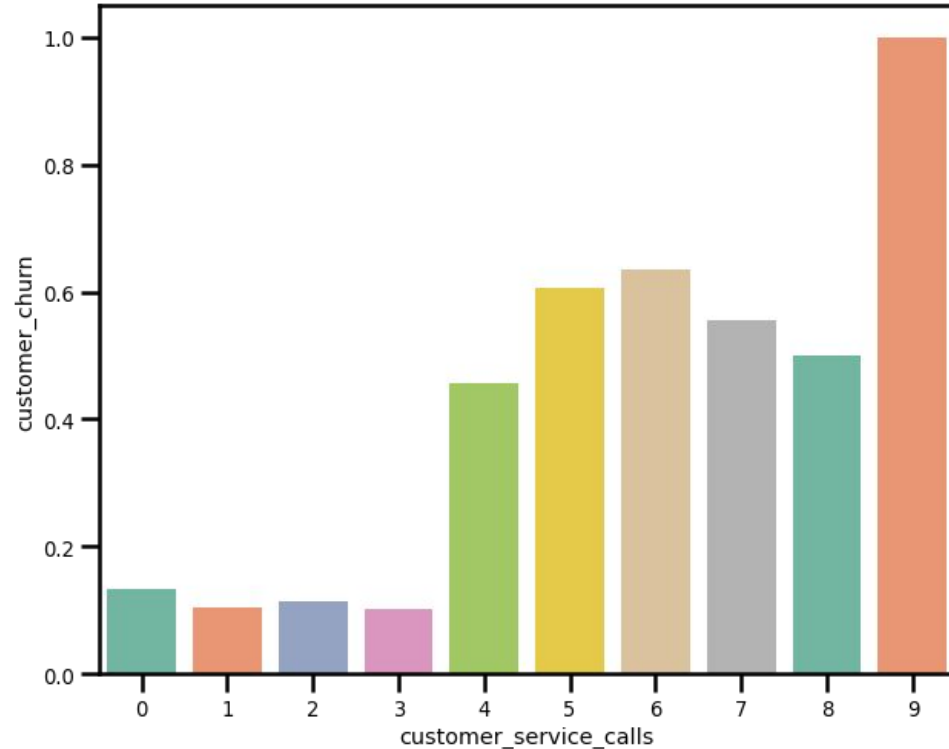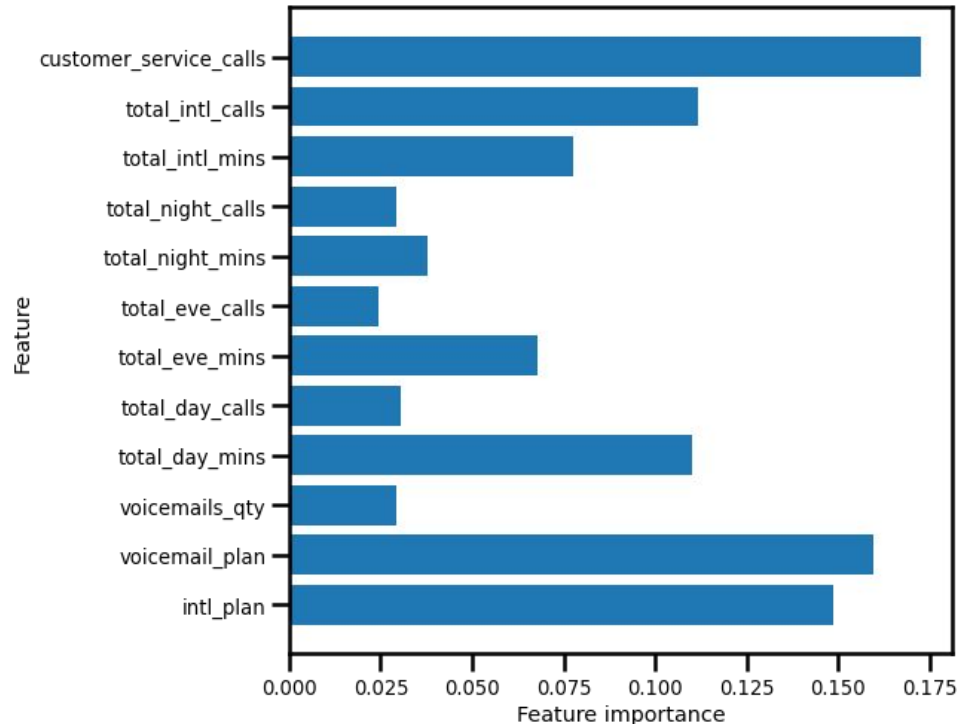
Scrub & Explore: Total Calls

Scrub & Explore: Rates

- Day Rate: 0.170
- Eve Rate: 0.085
- Night Rate: 0.045
- International Plan Rate: 0.27
- Non-International Plan Rate: 0.27

Model & Interpretation

- Collected and compared outcomes of multiple machine learning models
- The best model has an accuracy of 96%

Recommendations

- Revisit and revise company's customer service protocol
  - Offer a larger incentive to customers making more than 3 customer service calls
- Changing the rates for international minutes/international plan
- Initiating customer feedback surveys for customers leaving

Future Works

- Get more data on cell signal across the US to look for patterns in states with higher churn

- Information from customer service calls
  - Payments, Complaints, Web inquiries

Thank you!