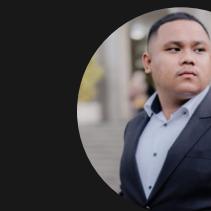




Customer Churn Prediction



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DATA SCIENTIST



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Introduction

Analytical Background.

- Monitoring churn is important to maintain the company's income so that it is stable and even increases.
- There are many factors or variables that can influence a customer to leave a product or service from a business.
- These factors can be analyzed to determine what factors have the greatest influence so that prevention and service improvements can then be carried out in order to prevent customer churn from multiplying.



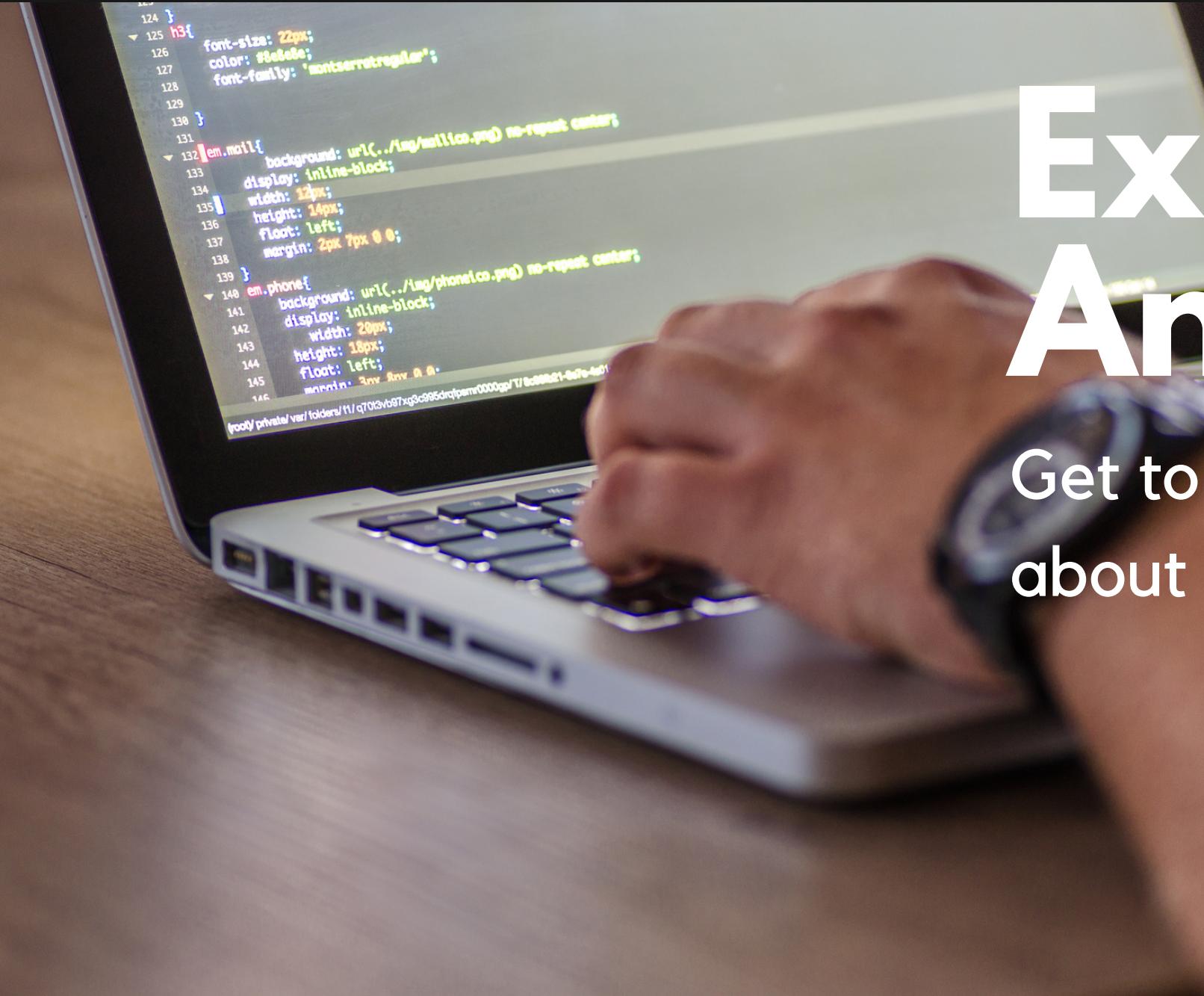


Objective

The main target.

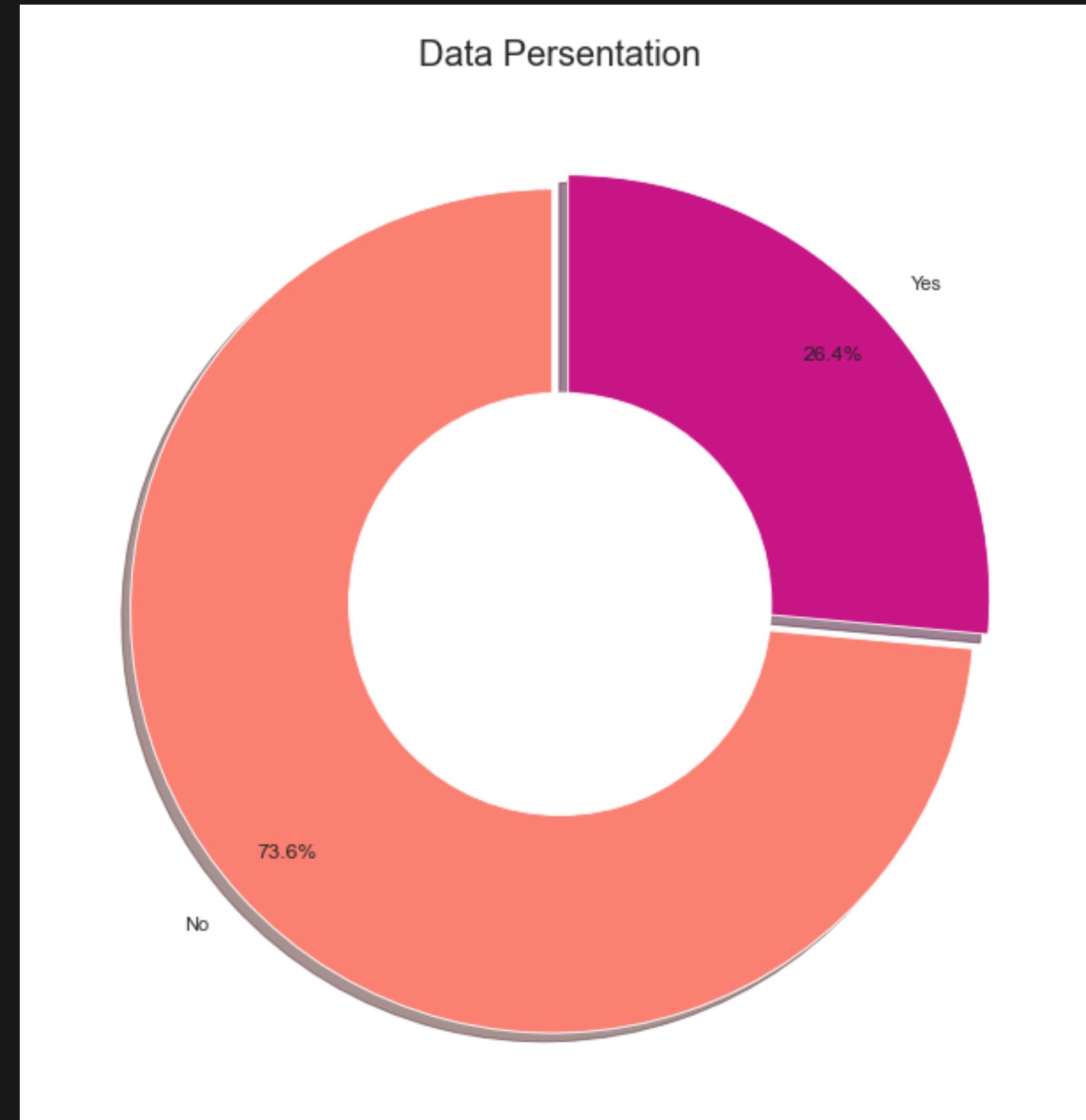
Comparing Artificial Neural Network (ANN) models using sequential APIs and functional APIs to predict customer churn that occurs within a certain time becomes the main objective to be carried out.

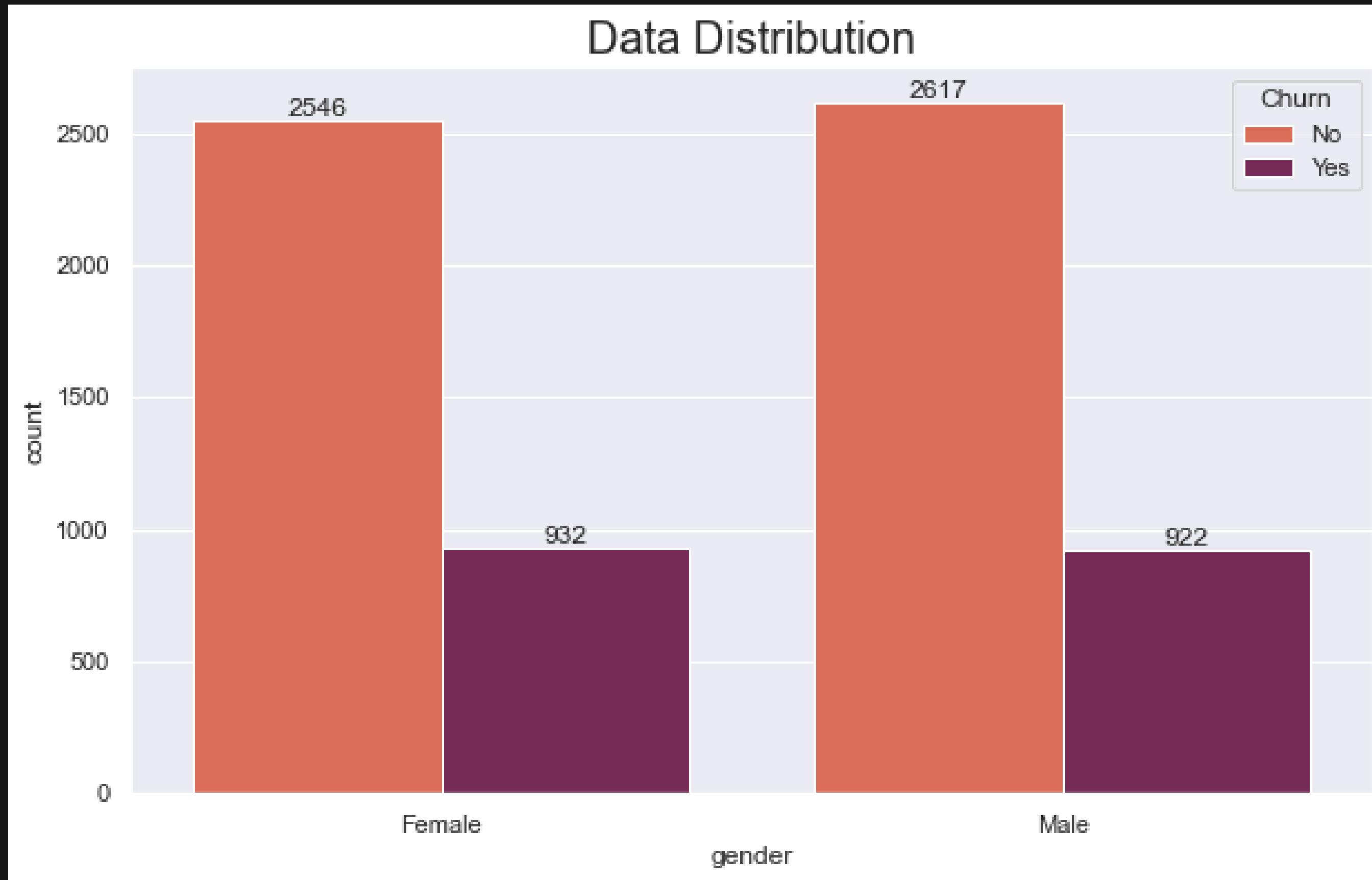


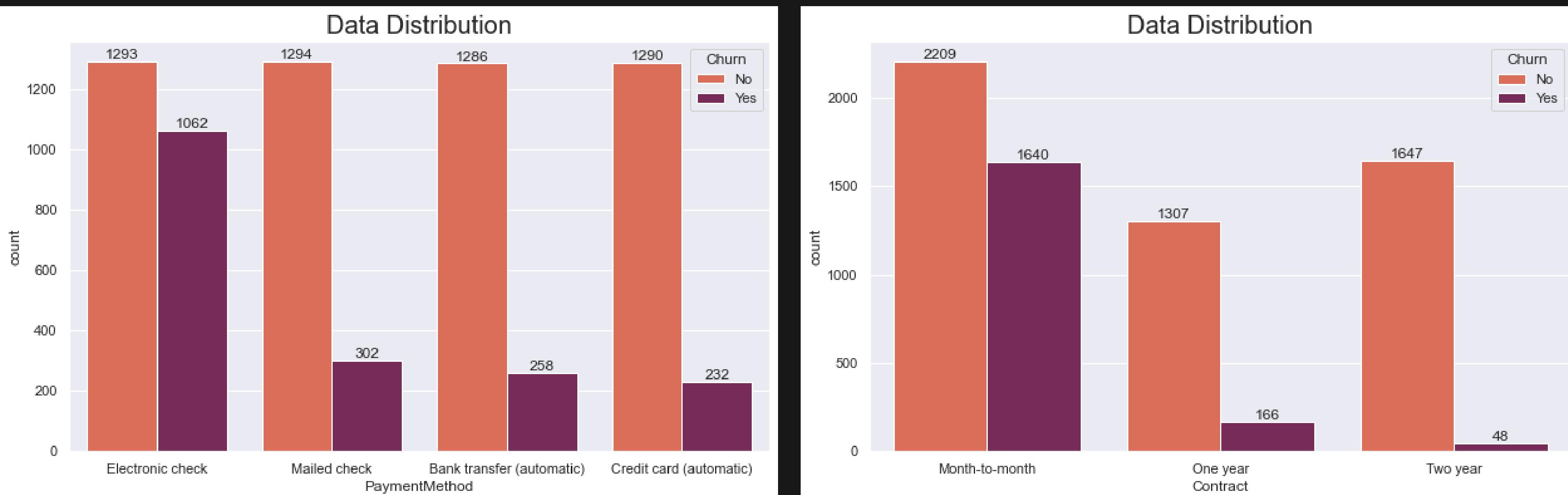


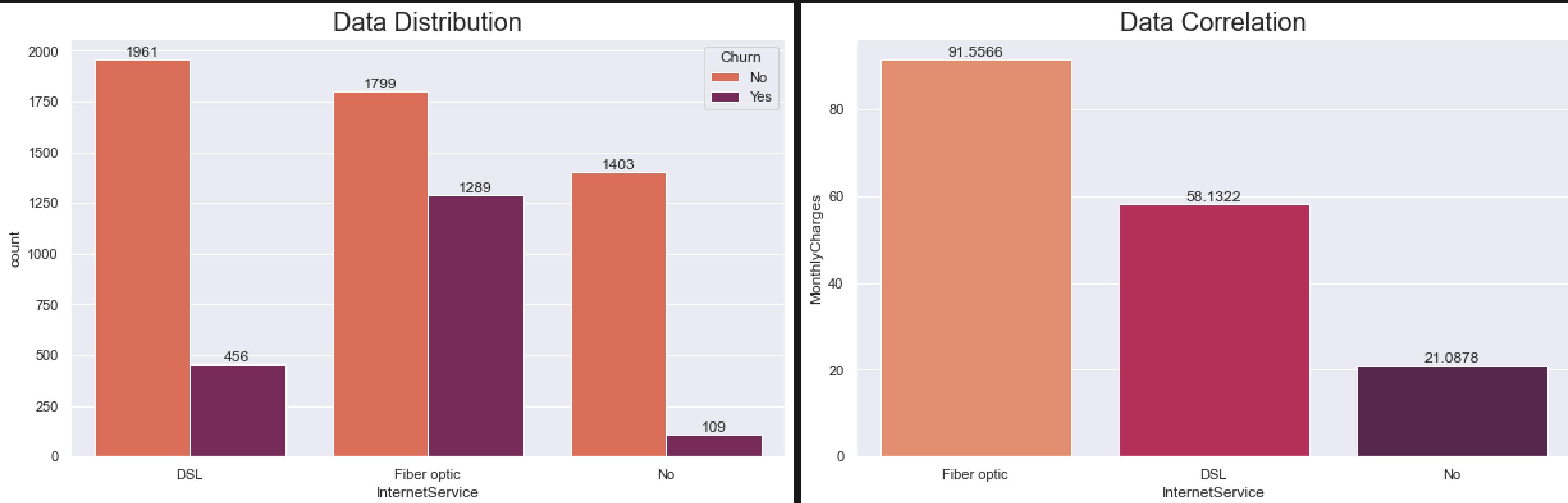
Exploratory Analysis

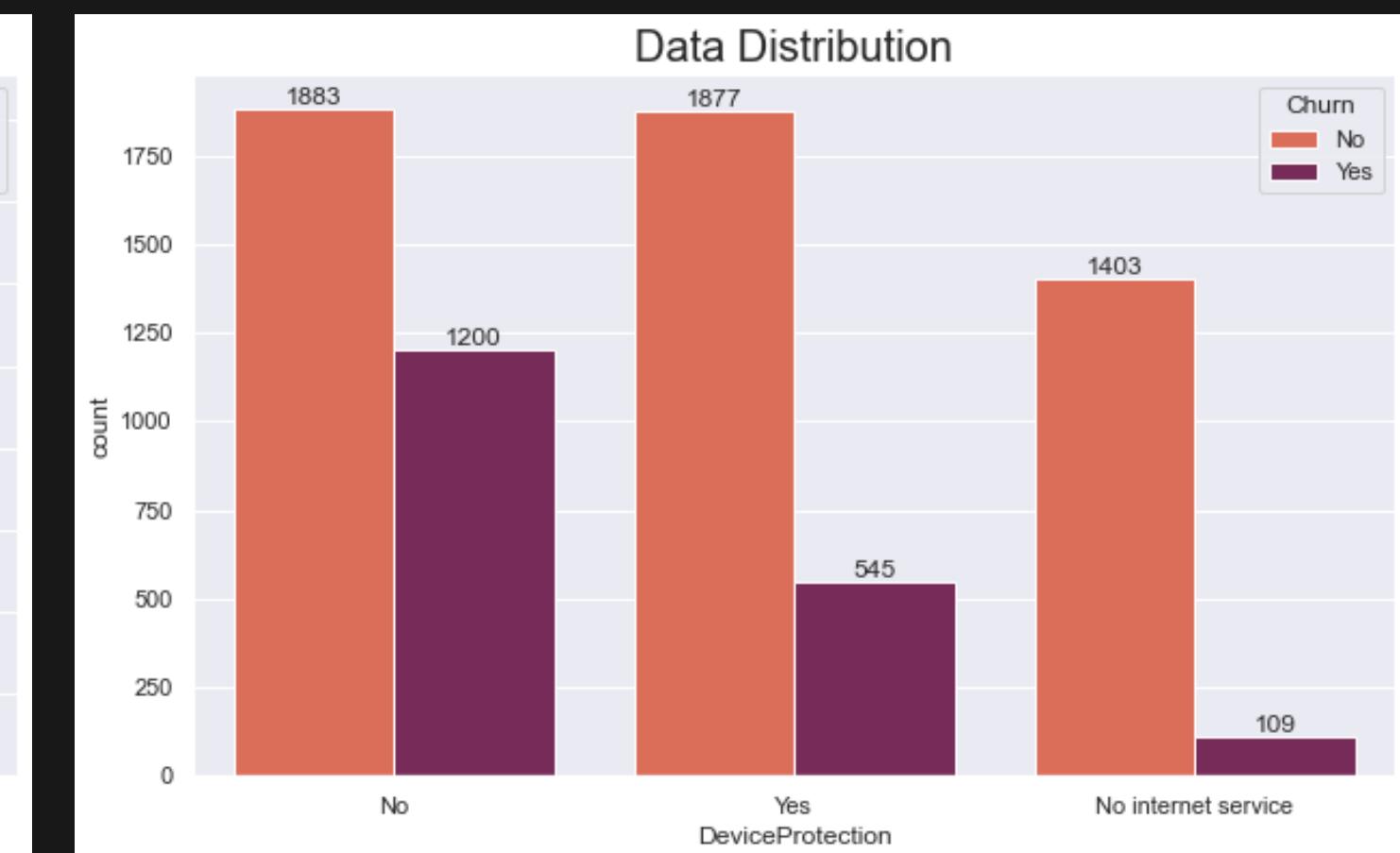
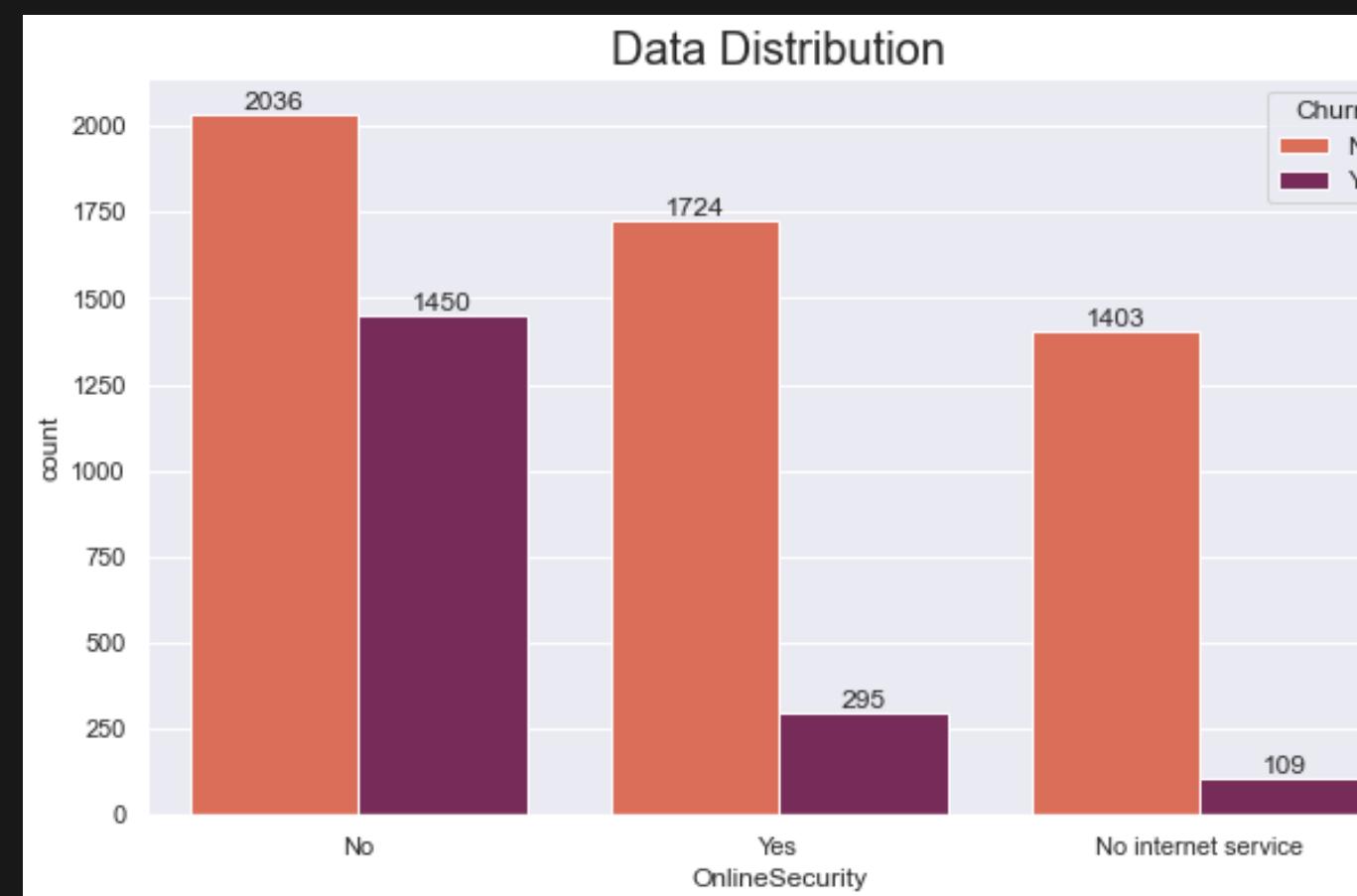
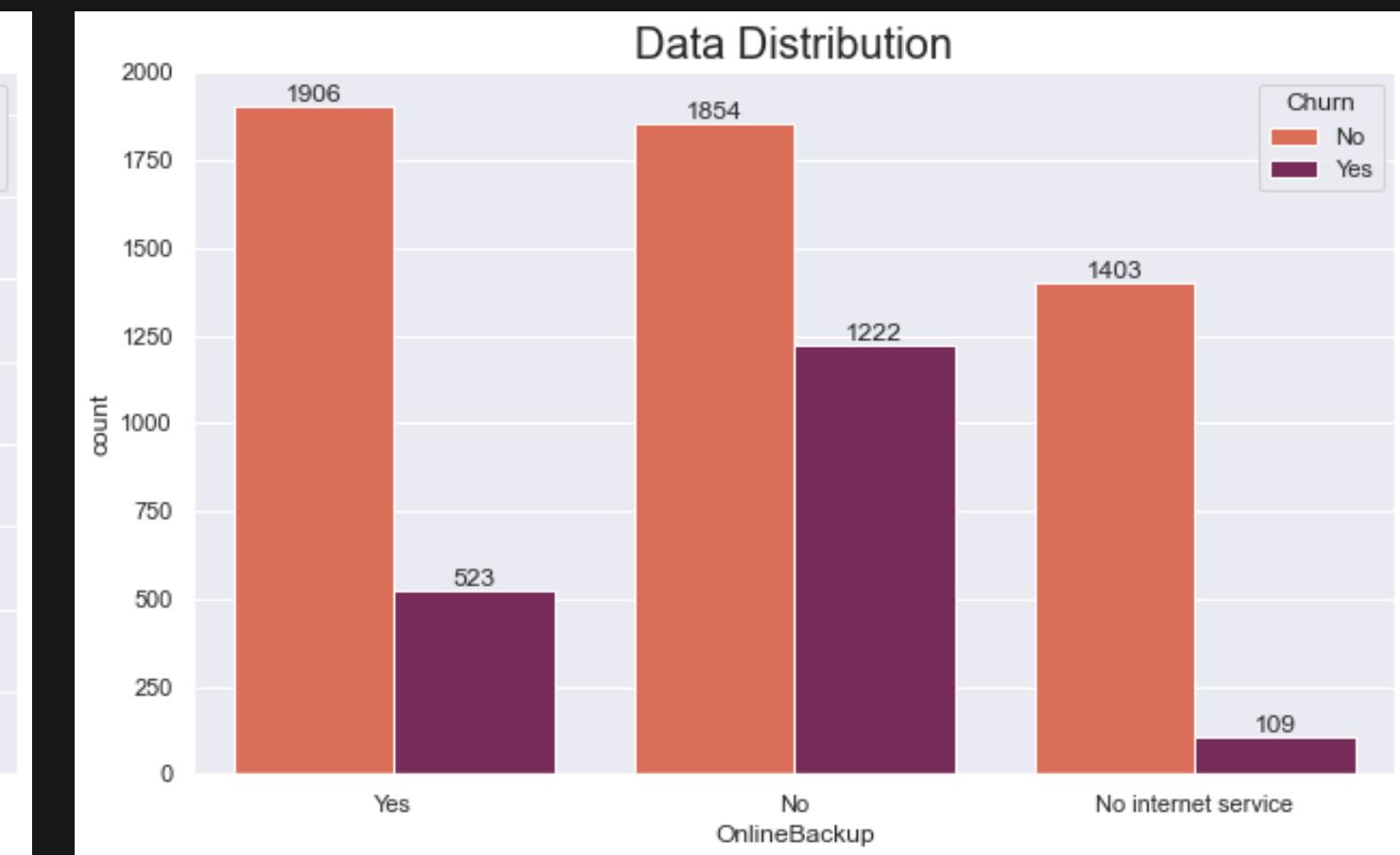
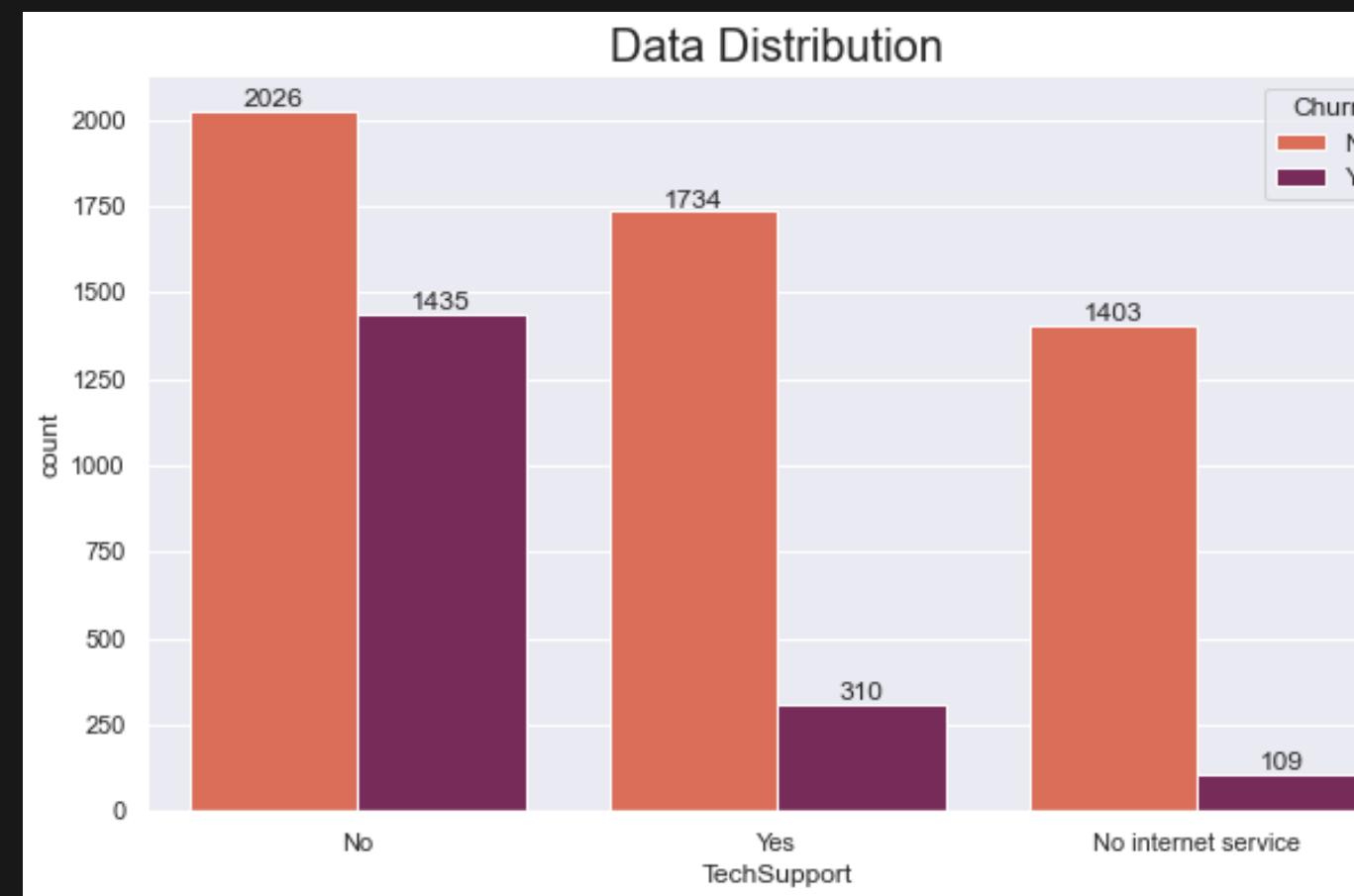
Get to know more
about the data.

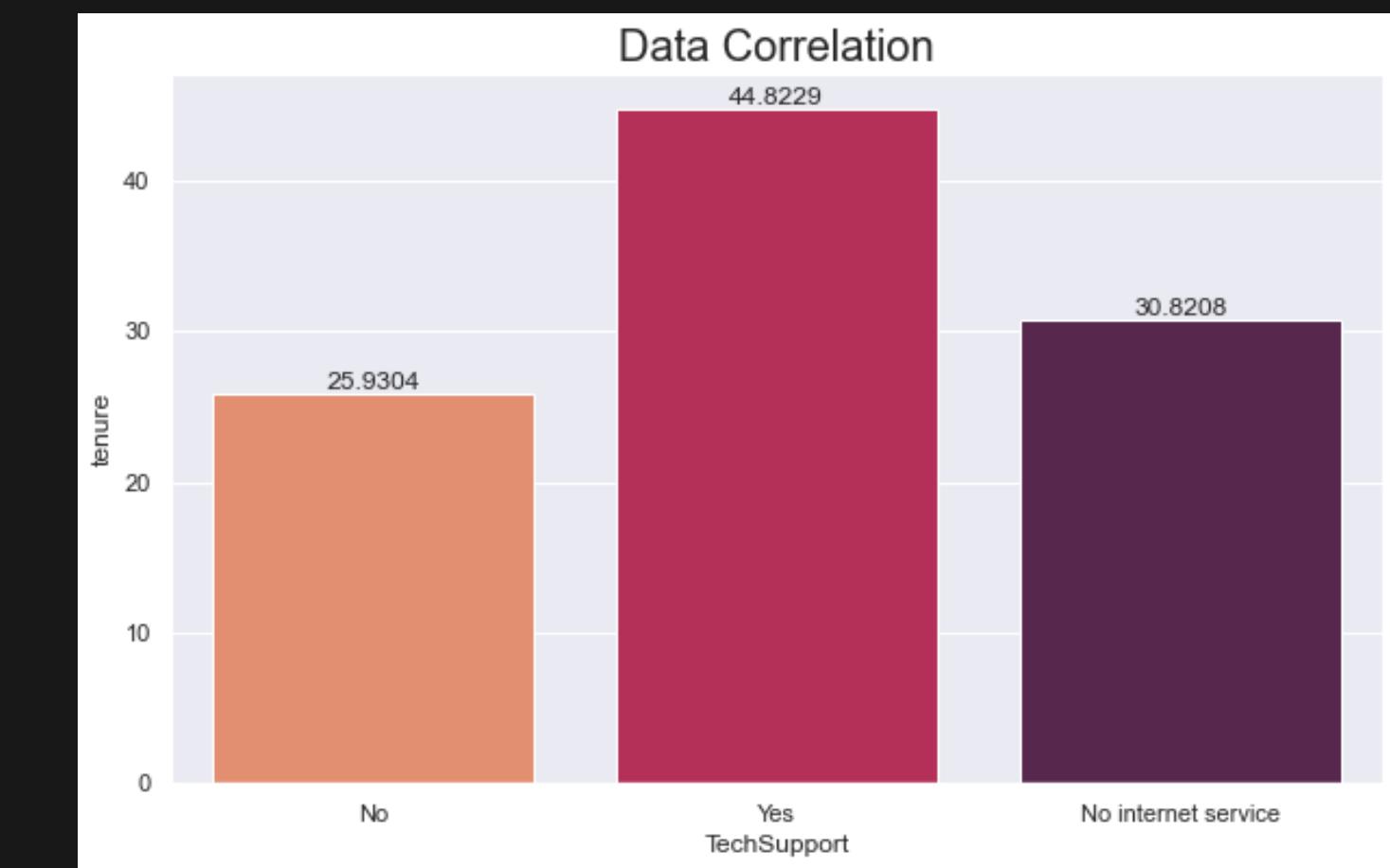
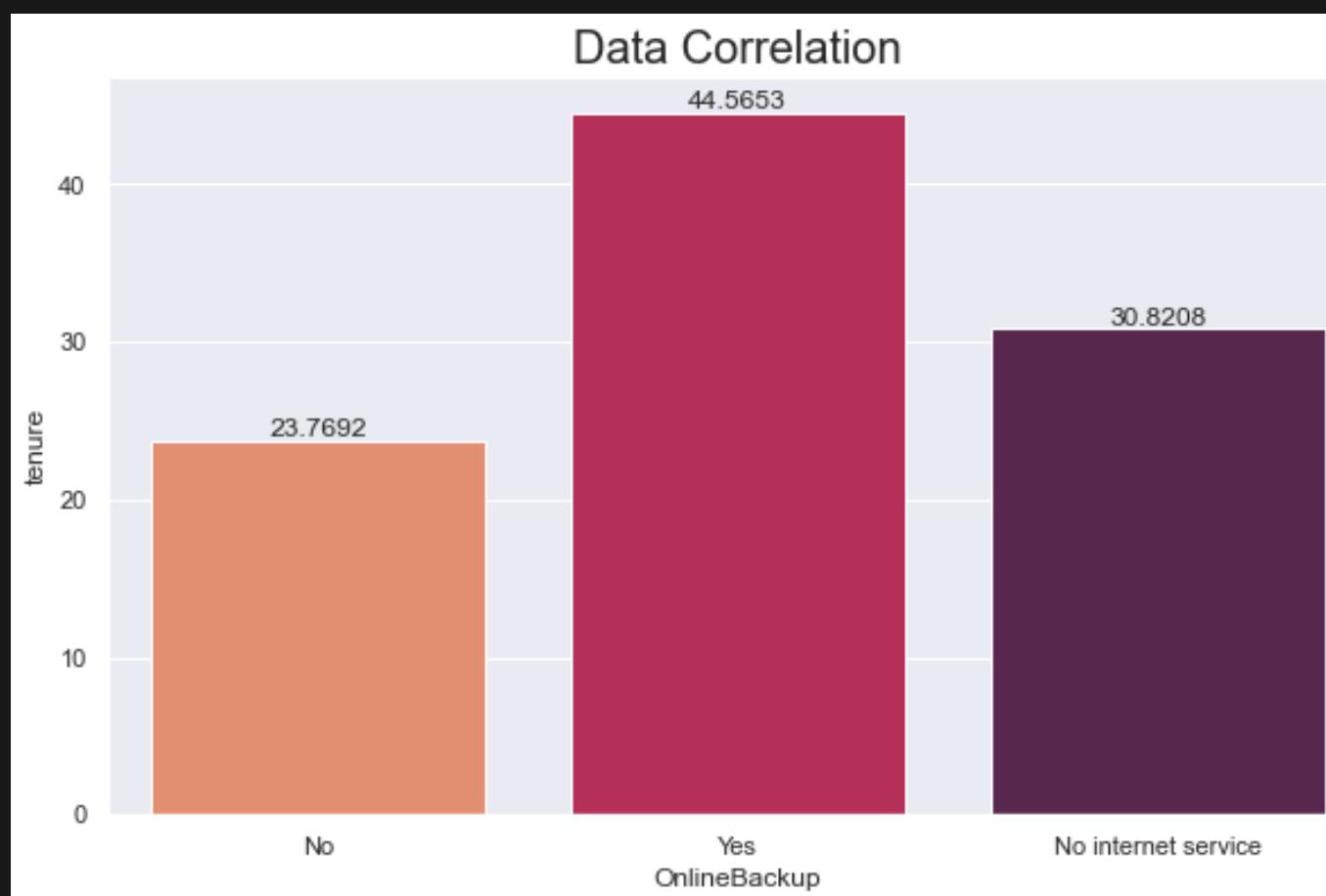
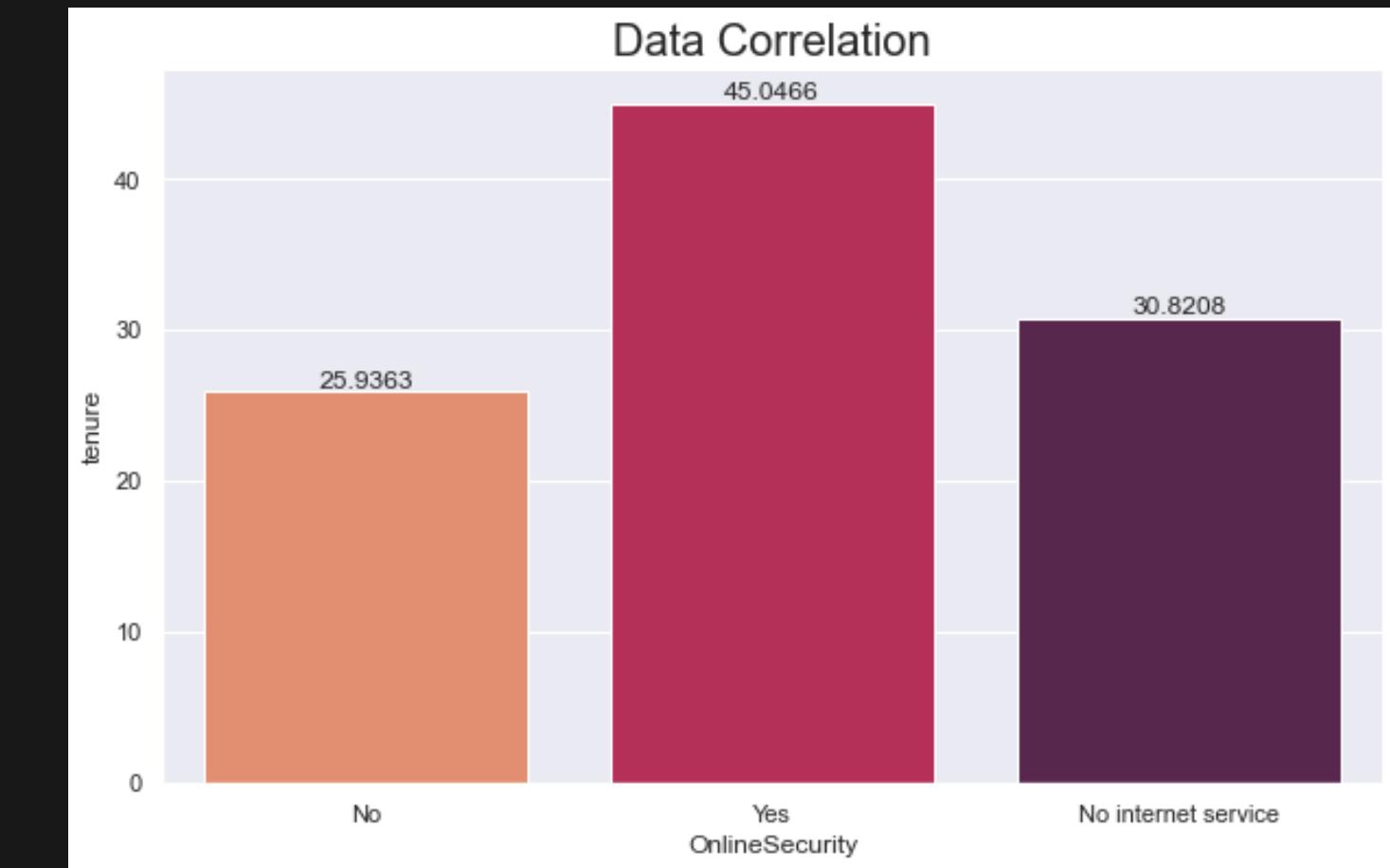
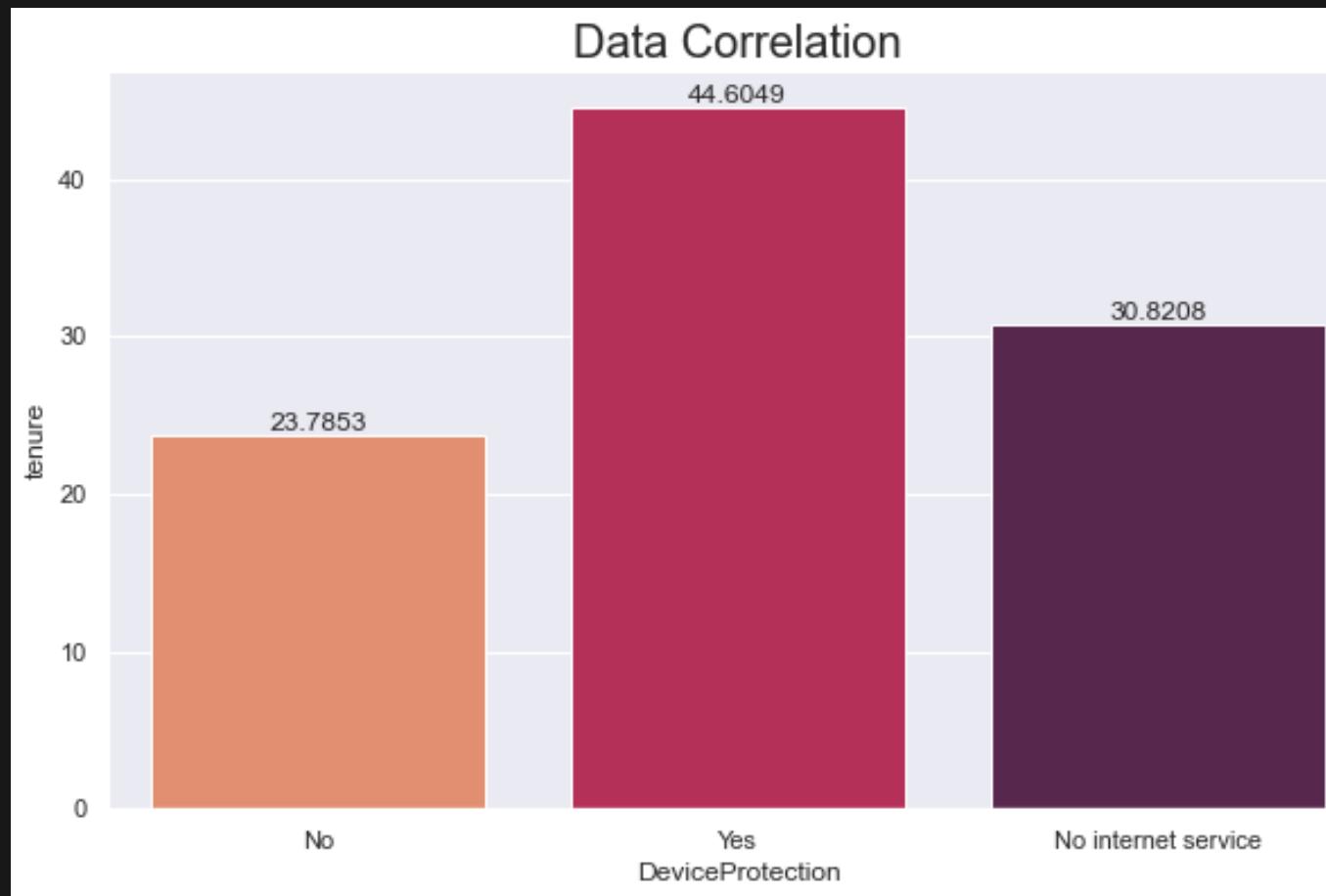












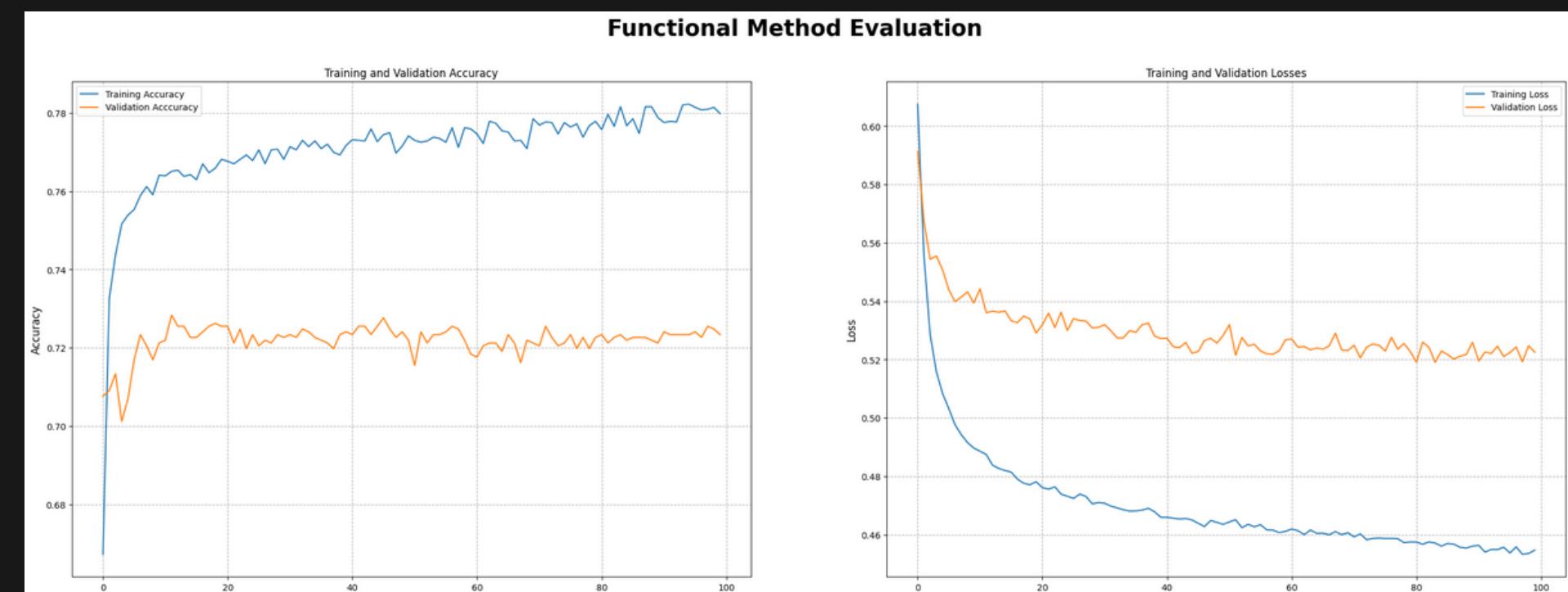
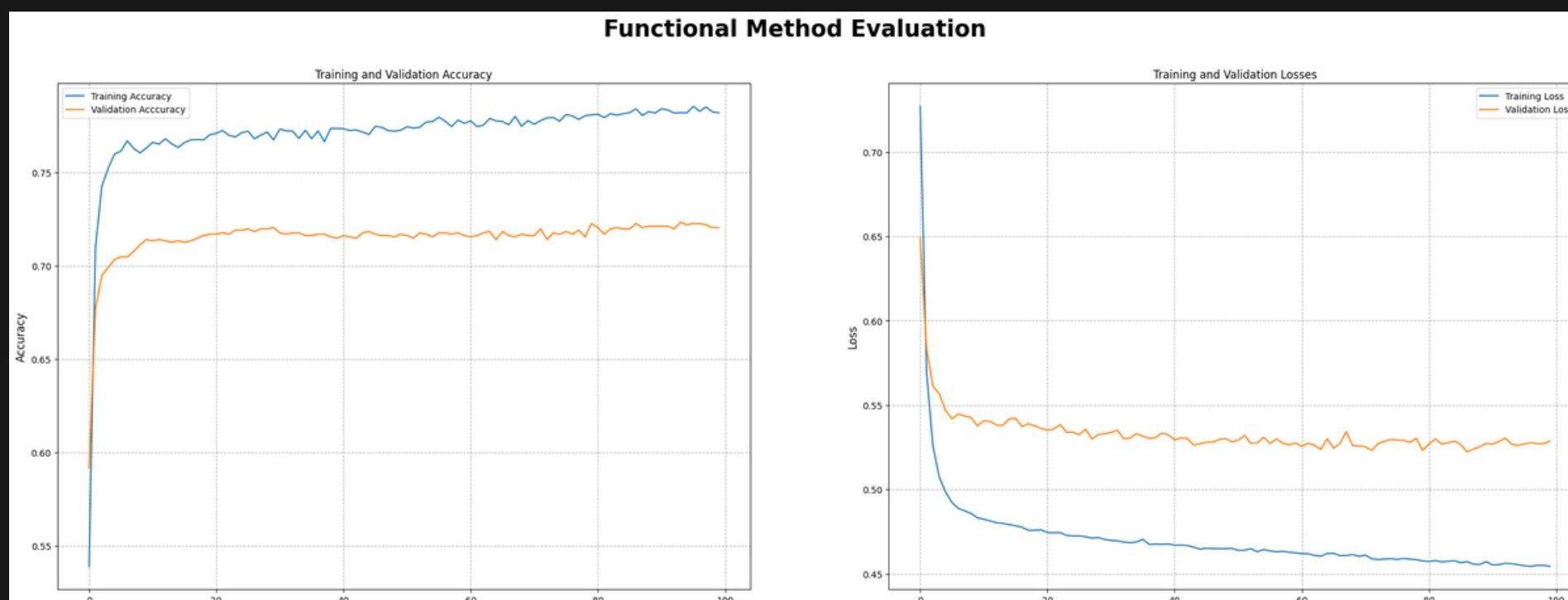
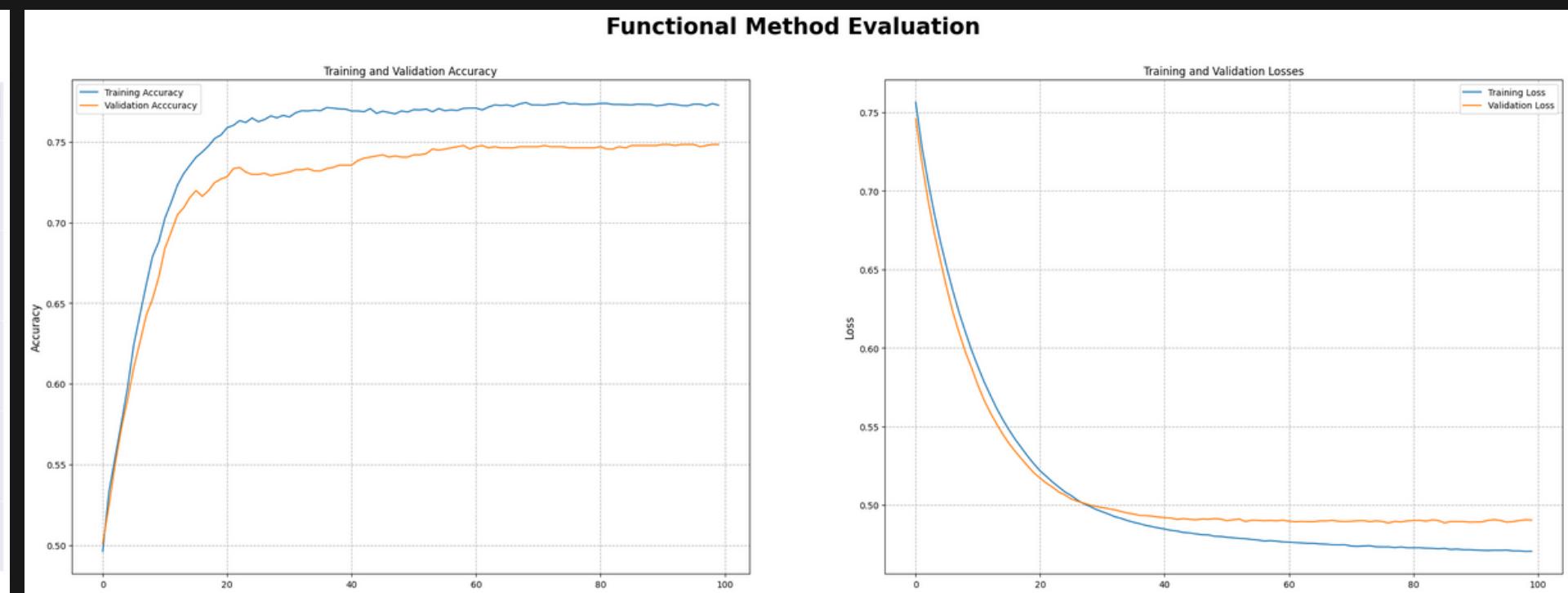
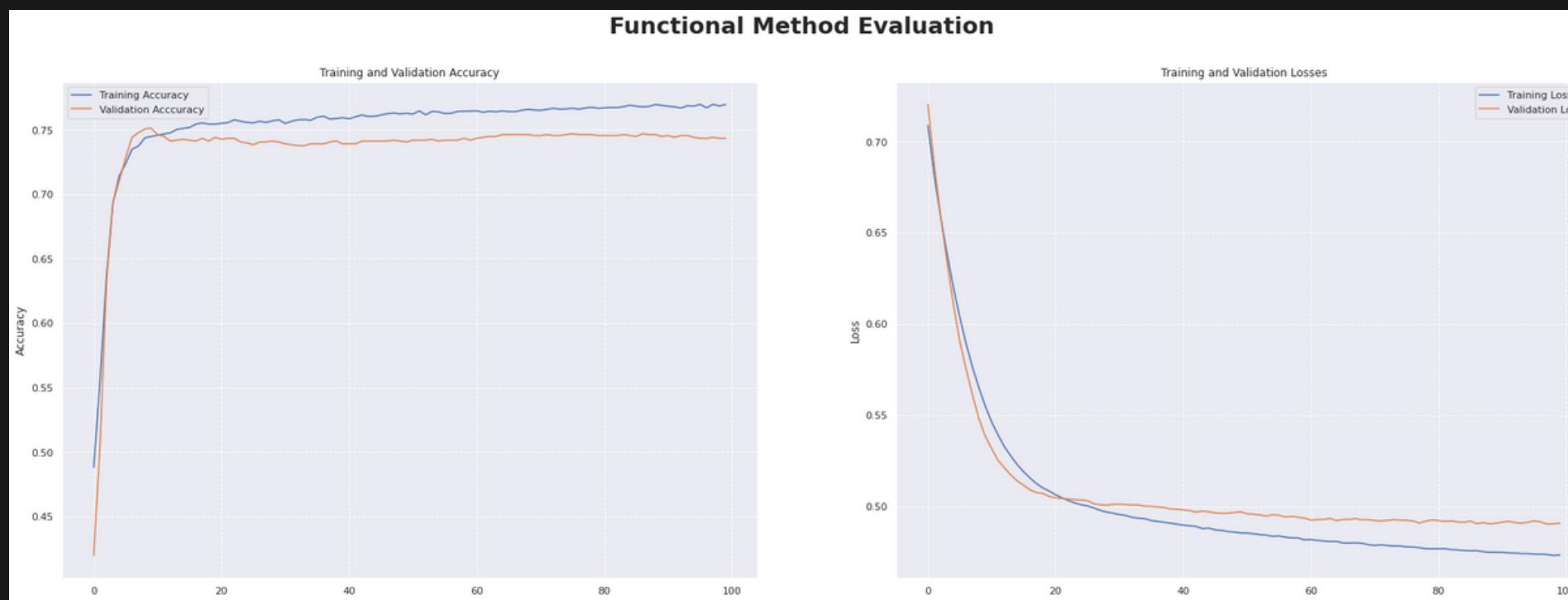


Model Summary



Functional API

Sequential API



Model Accuracy

Models	Accuracy	ROC-AUC	Recall 1
Functional Improved	0.71	0.773	0.90
Sequential Improved	0.72	0.776	0.90

Conclusions



Several service strategies should be evaluated to increase our customer loyalty. In addition, it is important to make customers more interested in annual subscriptions than monthly subscriptions.

The model is made using functional and sequential ANN but is still experiencing overfitting. Model improvement is carried out on both models by increasing the number of neurons and adjusting the learning rate of the model.

In general, the performance of the model has increased with the sequential model which has a slightly better accuracy value than the functional model. In addition, there is no overfitting.



Thank You



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