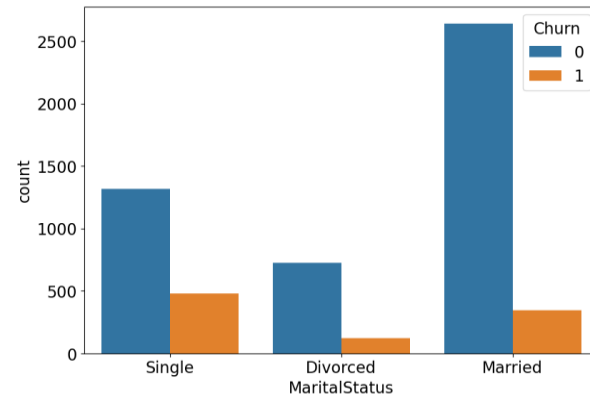
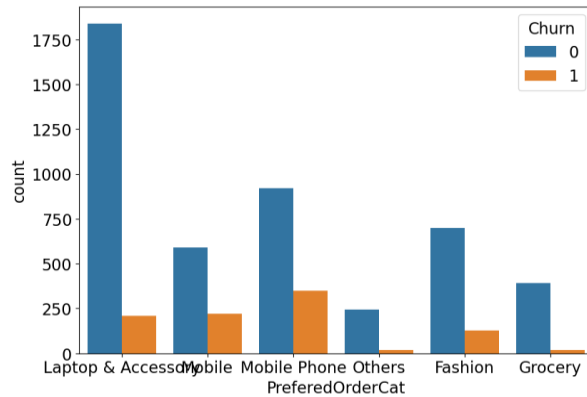
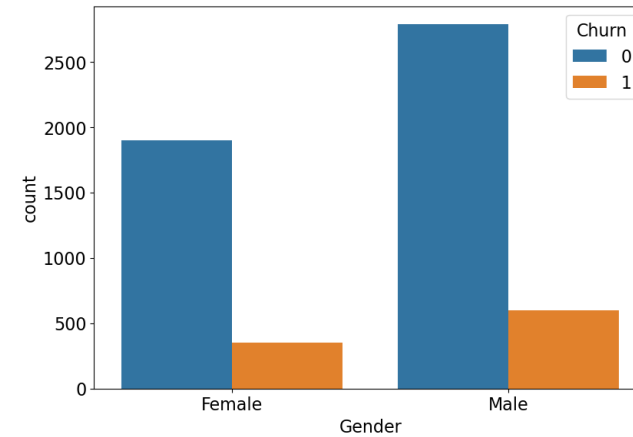
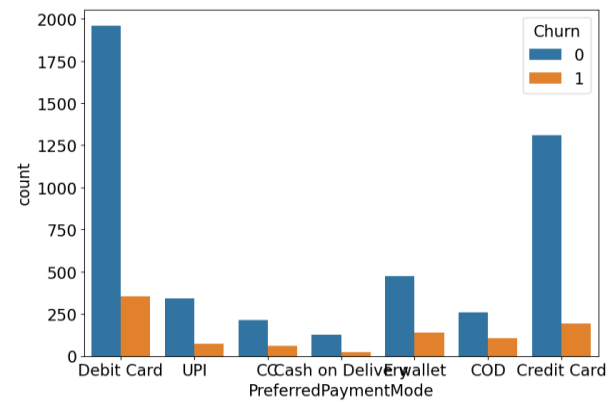
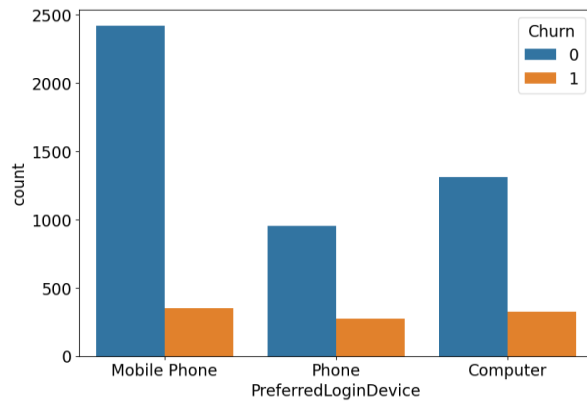
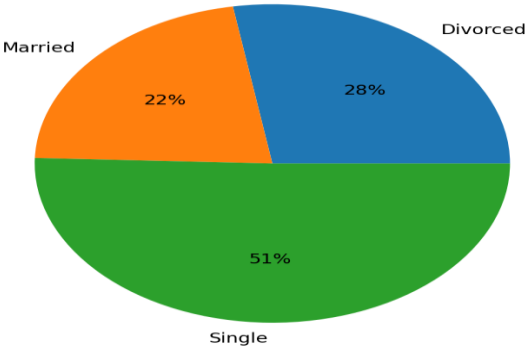
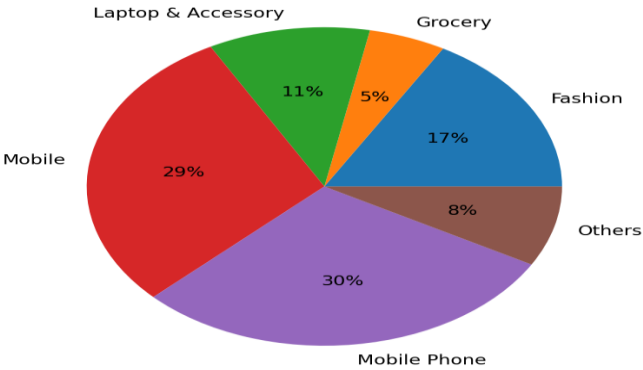
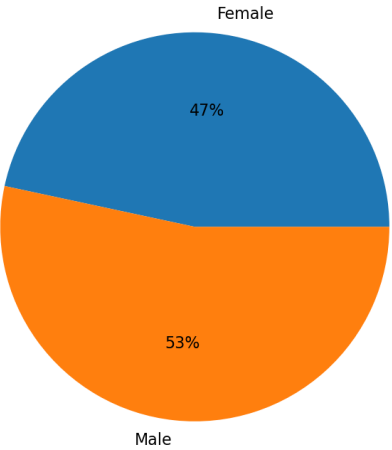
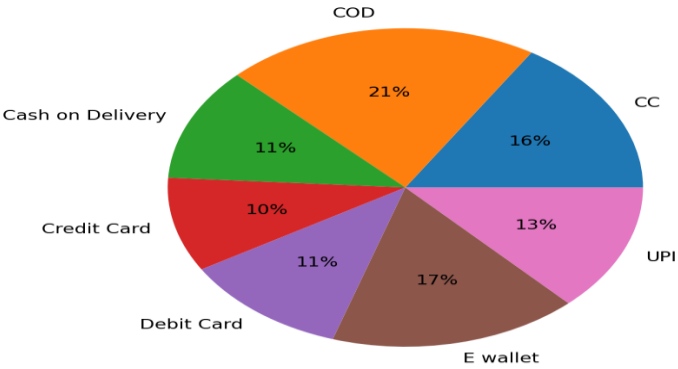
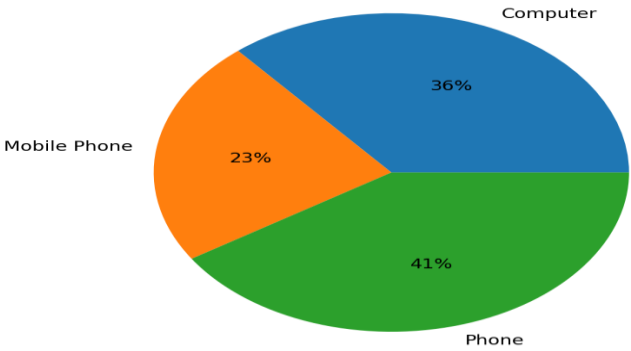
The background features abstract, overlapping green geometric shapes, primarily triangles and polygons, in various shades of green, creating a modern and dynamic visual effect.

Use Case:2 Churn Prediction (E-commerce Customer Churn Analysis and Prediction)

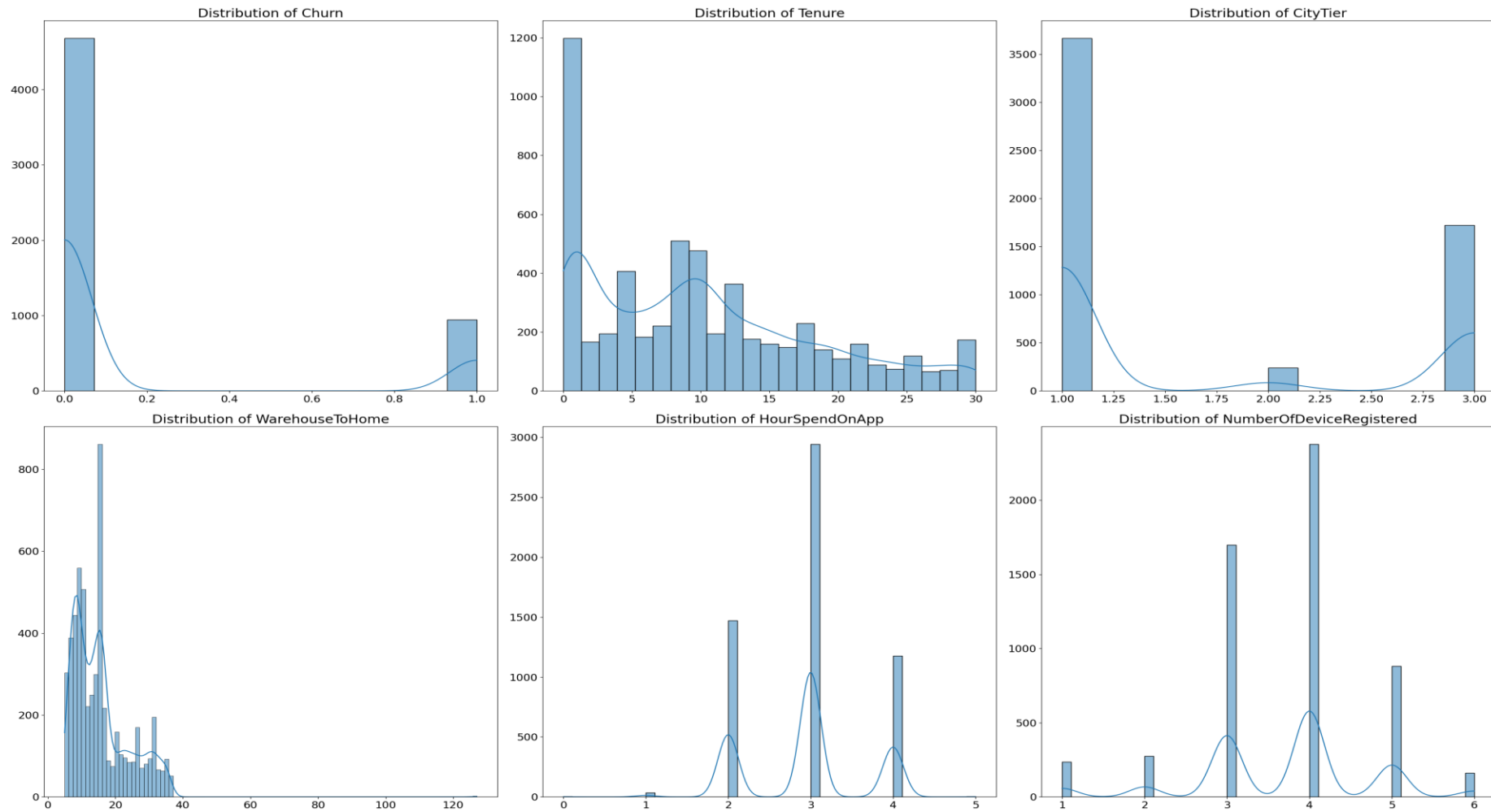
We visualize each variable with its corresponding churn value.



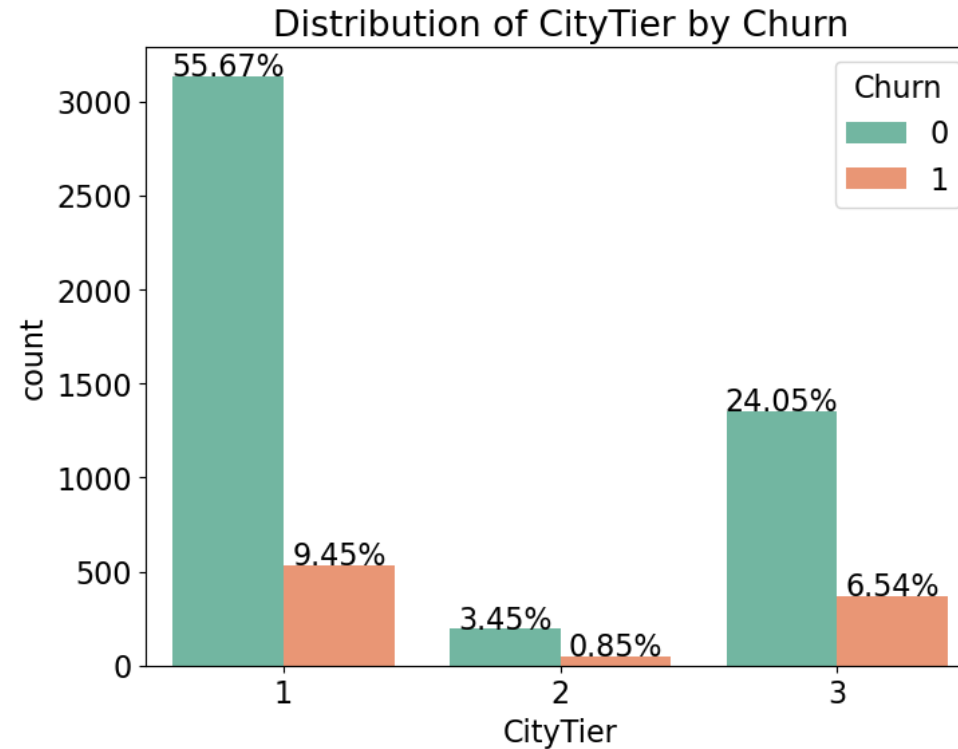
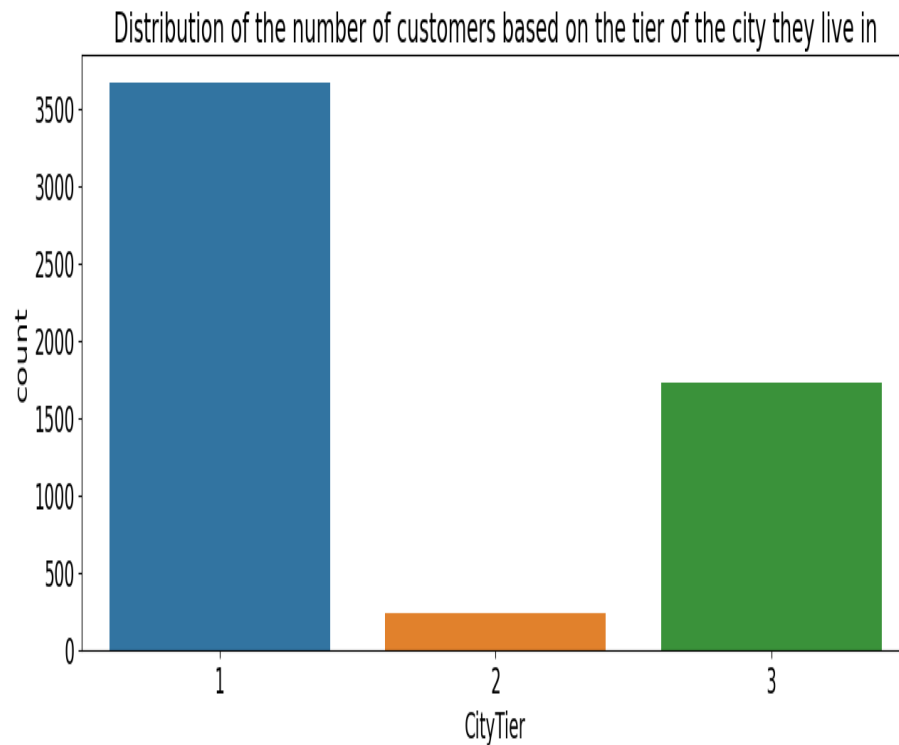
We find out the percent churn contributed by each category for each variable.



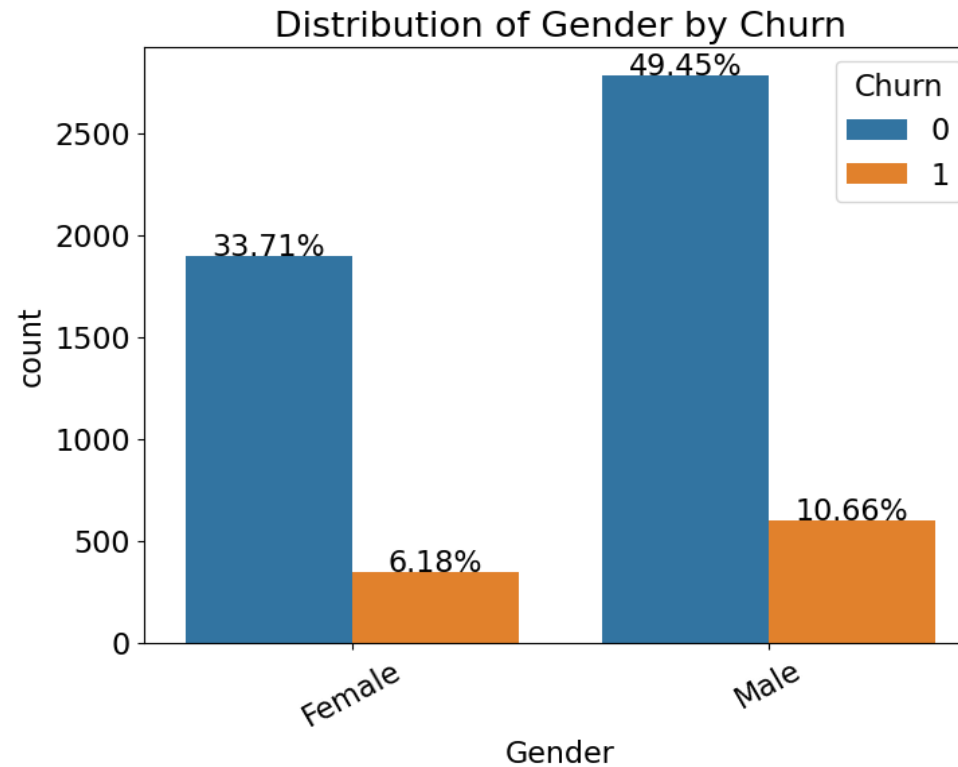
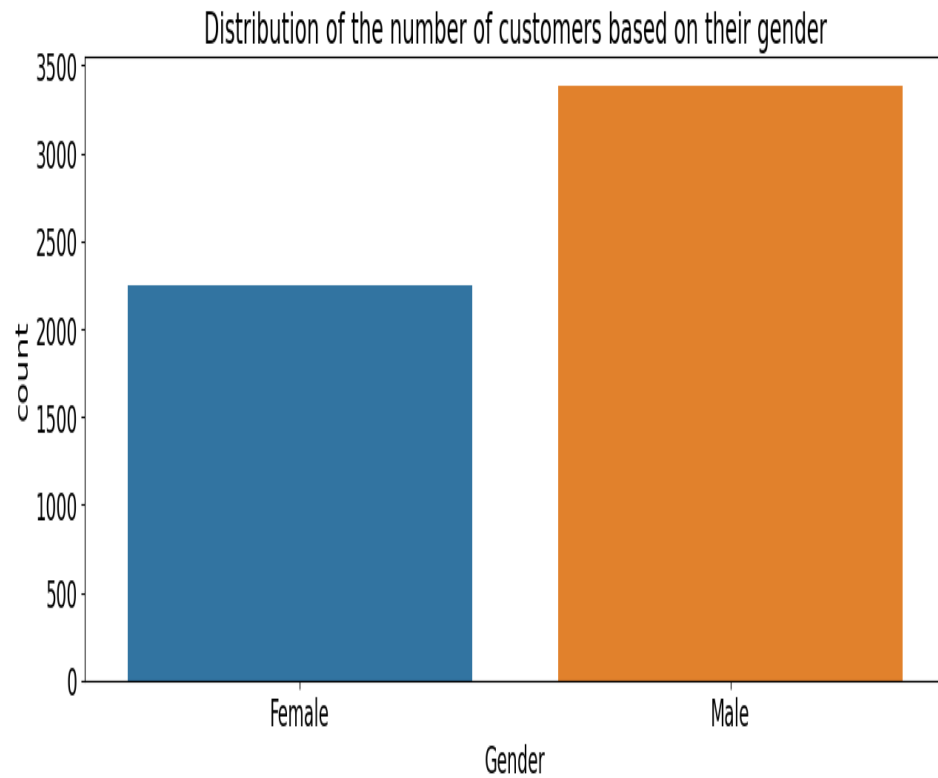
Visualise distributions of numerical type columns



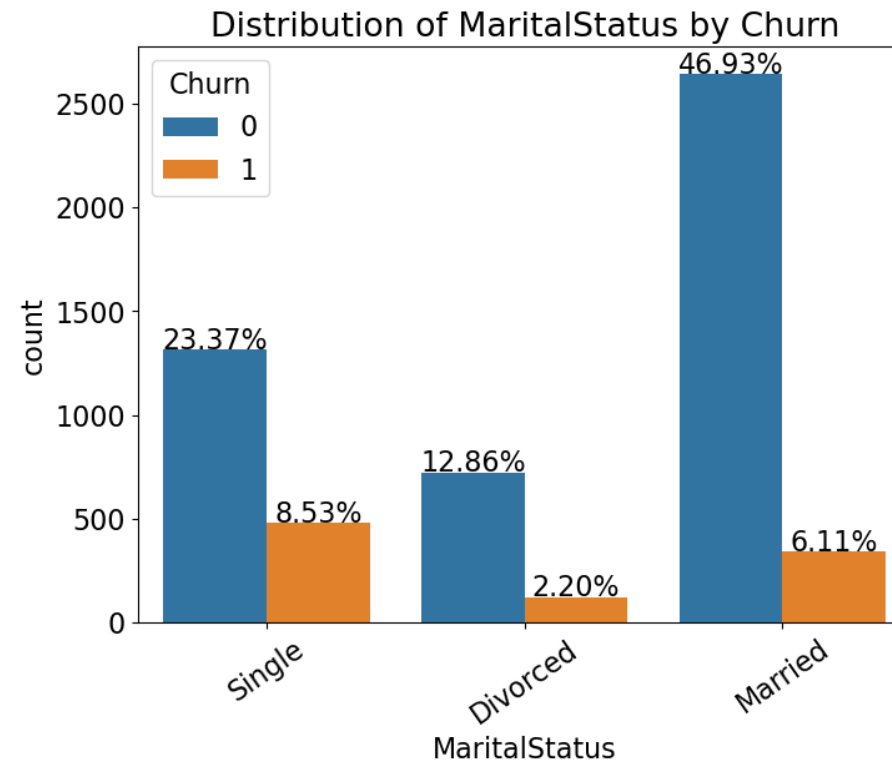
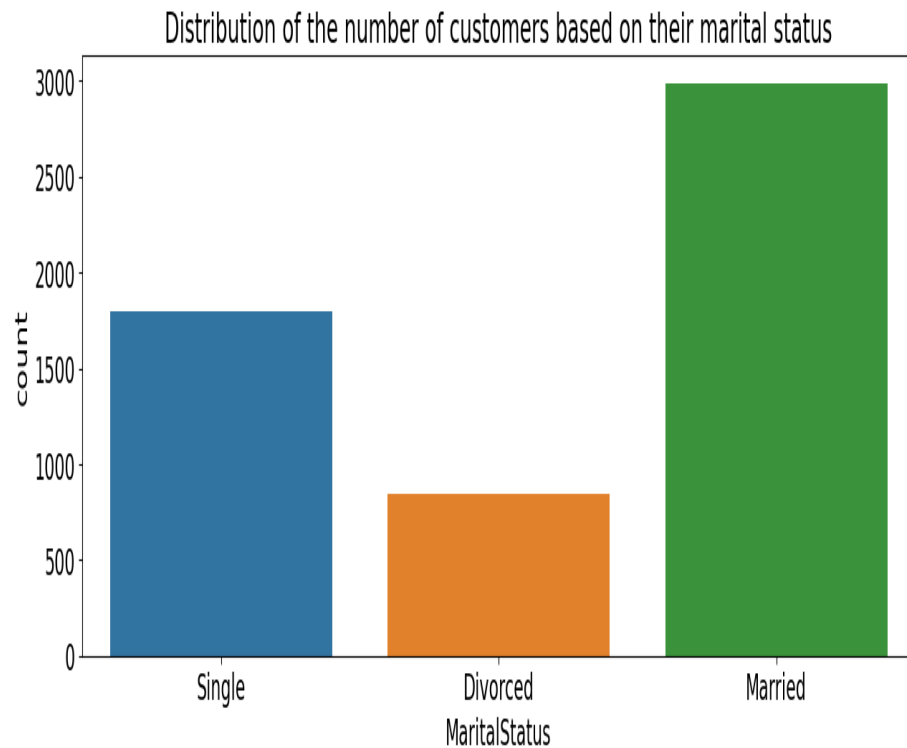
Distribution of the number of customers based on the tier of the city they live in vs Churn



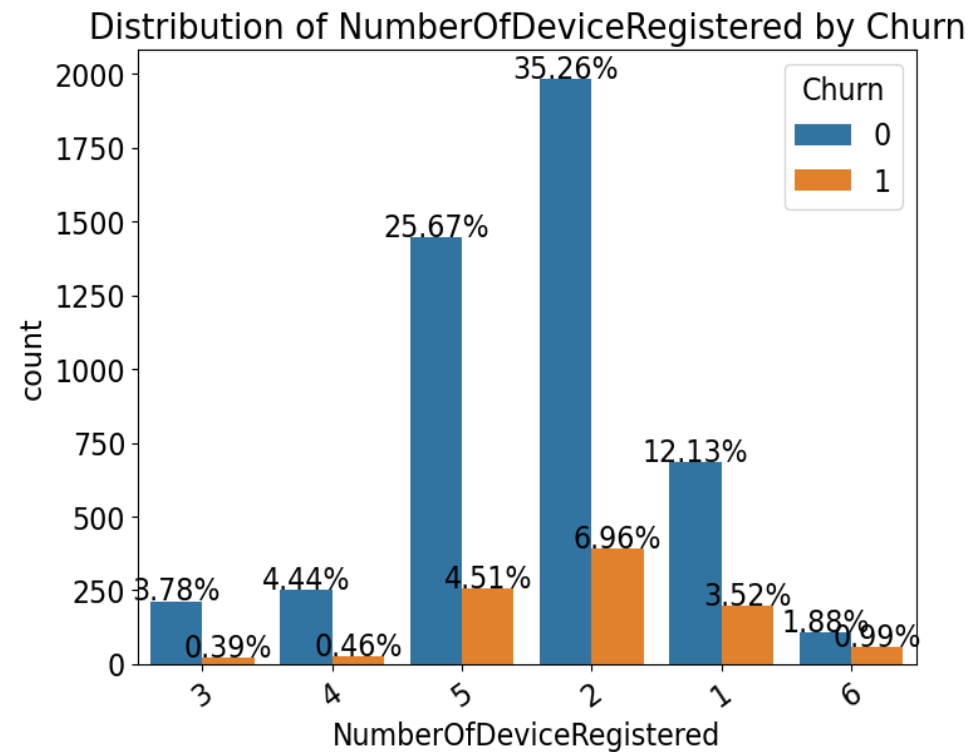
Distribution of the number of customers based on their gender vs Churn



Distribution of the number of customers based on their marital status vs Churn



Distribution of the number of customers based on their Number Of Device Registered vs Churn



Modelling Conclusion

- ▶ Both sets of evaluation metrics, specifically precision, recall, F1-score, accuracy, and the confusion matrix, suggest that the second model might be performing better than the first one.
- ▶ Model 1: Precision: Class 0: 0.97, Class 1: 0.94 Recall: Class 0: 0.94, Class 1: 0.97 F1-score: Both classes have an F1-score of 0.95 Accuracy: 0.95 Confusion Matrix: $\begin{bmatrix} 1337 & 84 \\ 47 & 1342 \end{bmatrix}$ Other Metrics: F1-score (0.953), R2-score (0.813), ROC-AUC Score (0.953)
- ▶ Model 2: Precision: Class 0: 0.99, Class 1: 0.97 Recall: Class 0: 0.97, Class 1: 0.99 F1-score: Both classes have an F1-score of 0.98 Accuracy: 0.98 Confusion Matrix: $\begin{bmatrix} 1379 & 42 \\ 15 & 1374 \end{bmatrix}$ Comparing these metrics:
- ▶ Precision and Recall: Model 2 generally has higher precision and recall values for both classes. F1-score: Model 2 has higher F1-scores for both classes. Accuracy: Model 2 has a higher accuracy of 0.98 compared to 0.95 in Model 1. Therefore, based on these metrics, Model 2 appears to be performing better than Model 1.

Recommendations

- Follow up the customers within 3-6 days since their last order to reduce the churn rate, AS approximately 50% of customers churn after 3 days of their last order, And approximately 75% churn after 6 days of their last order.
- Offer promos for credit and debit card holders, as they represent the most frequently used payment method for customers whether they're males or females.
- Upsell a specific category of items which is Laptop & Accessory as the highest number of sales was directed toward that category by males and females.
- Initiate a cash back system on debit and credit card as customers with high cash back percentage tend to not churn.
- Enhance the complain handling department as 50% of churned customer has already complained before they churn.

Thank You