WINCOR
Customer Churn Analysis

By Ekaterina Serbina

Goal of the Analysis:

- Investigate why certain customers decide to leave the service, uncovering the key factors and patterns behind their decisions.

- Determine the most effective machine learning model and its hyperparameters for accurately predicting customer churn.

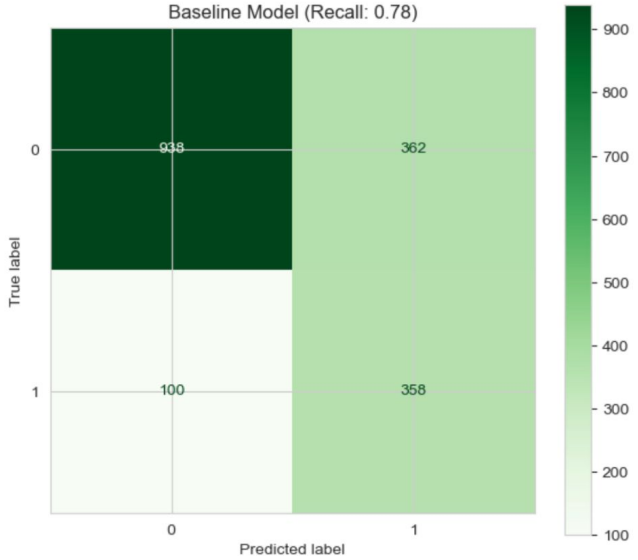
- Develop actionable strategies to prevent customer churn based on insights gained, enhancing customer satisfaction and loyalty.

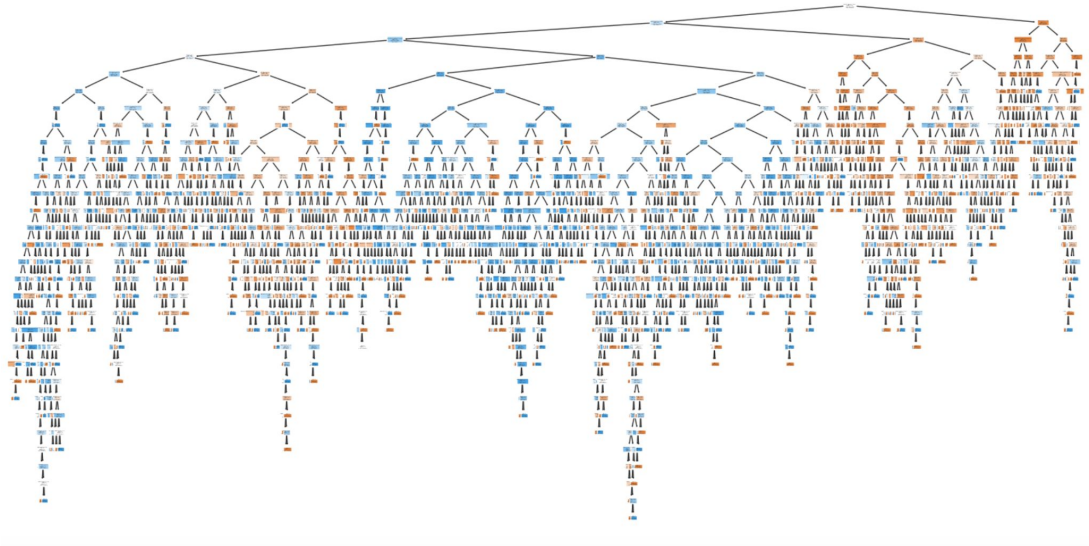
Data explanation

- WINCOR Customer Churn Dataset
- Contains 7043 rows (customers) and 21 columns (features).
- Target variable: "Churn" column.
- Imbalanced data: 5163 non-churning, 1869 churning customers.

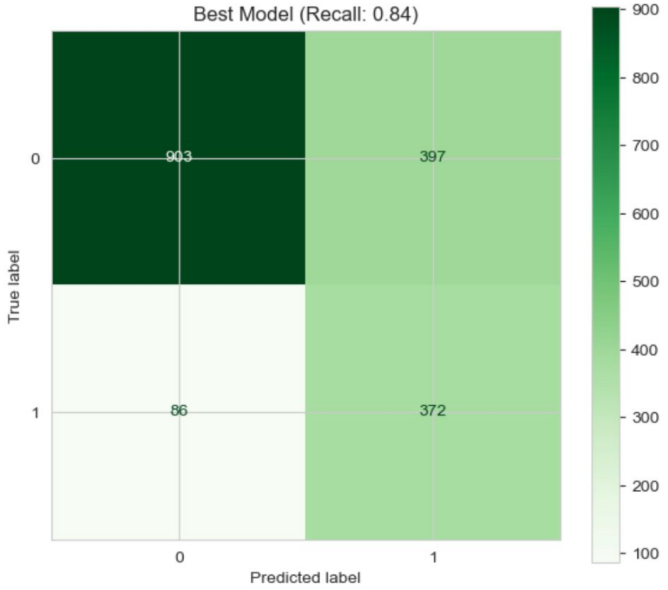
Baseline Models

- The Baseline Logistic Regression model (Recall: 0.78)
- The Baseline Decision Tree model (Recall: 0.54)

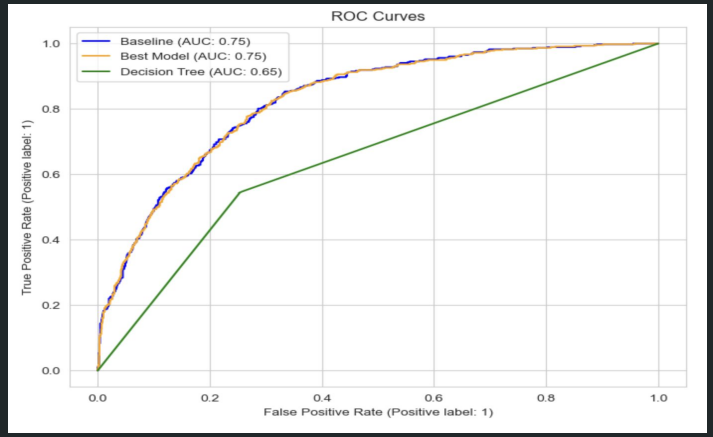




Best model Performance



- Logistic Regression model after Hyper tuning (Recall: 0.81)

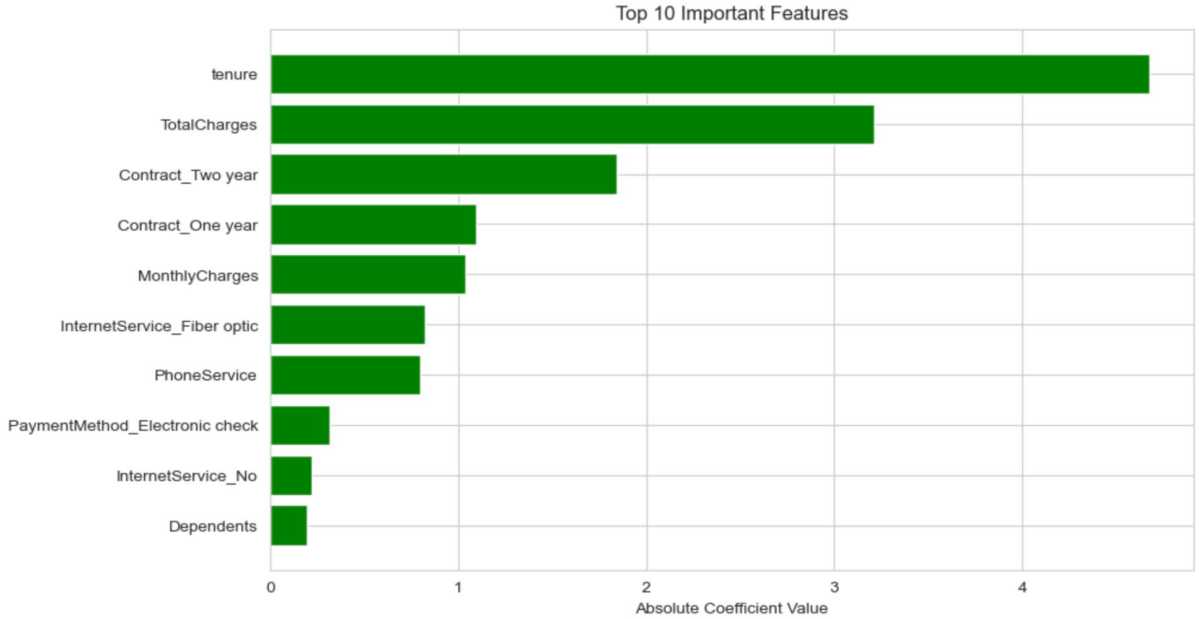


- Comparison of ROC curves for Churn Prediction Models

```
logreg_best = LogisticRegression(
    C=100,
    tol=0.1,
    penalty='l2',
    solver= 'saga',
    max_iter=100,
    random_state=42
)
```

- The best Hyperparameters for the model

Key features and their impact on the Churn



- Tenure and Total Charges have the most significant impact
- Long-term contracts and phone service reduce Churn
- Higher monthly charges increase Churn

Business Recommendations:

- Promote Longer Contracts: Encourage longer-term contracts with incentives to reduce churn.
- Review Pricing: Analyze pricing, especially for high monthly charges, and offer competitive options.
- Diversify Payment Methods: Provide multiple, convenient payment options to reduce churn.

Future work

- **Personalized Interventions**: Develop models to predict churn and suggest personalized strategies for retaining customers.
- **Sentiment Analysis**: Incorporate sentiment analysis to understand why customers churn based on their feedback.
- **Leverage Advanced Data**: Integrate diverse data sources for a comprehensive view of customer behavior and external factors.

Contacts

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