# 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.
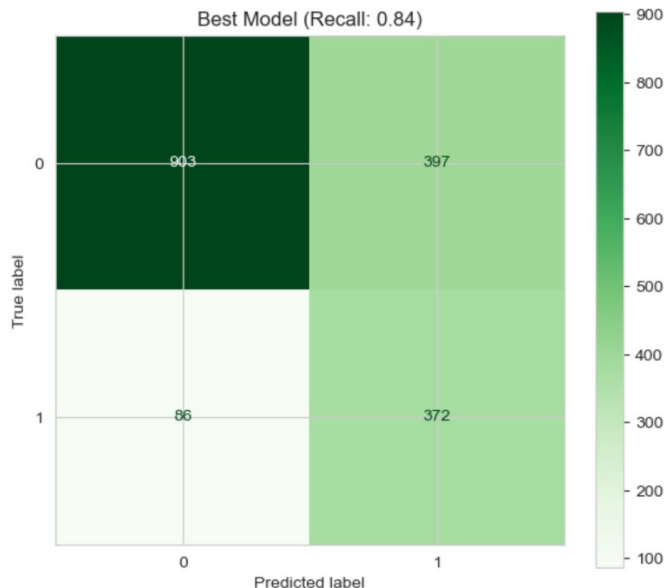
# Data explanation

- WINCOR Customer Churn Dataset

- Contains 7043 rows (customers) and 21 columns (features).

- Target variable: "Churn" column.

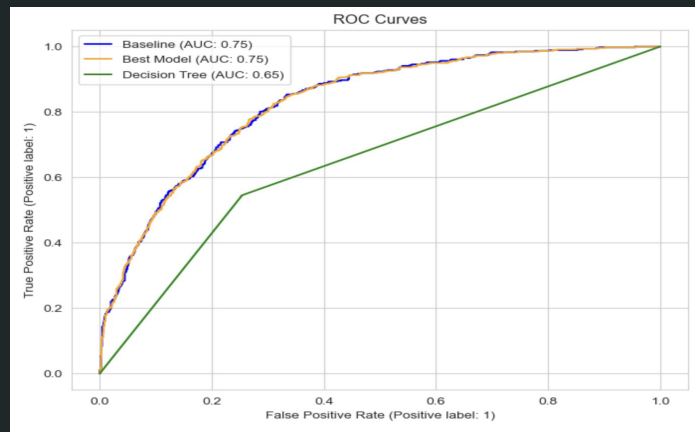- Imbalanced data: 5163 non-churning, 1869 churning customers.

# Baseline Models

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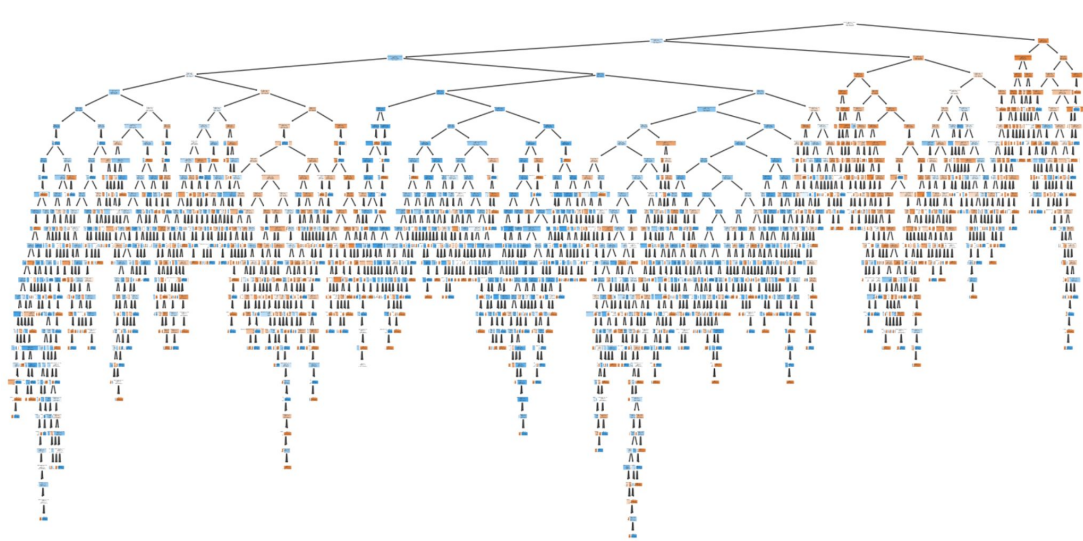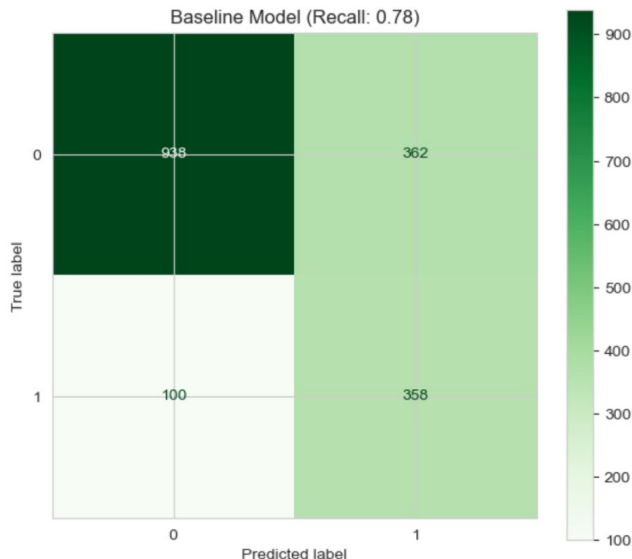
# Best model Performance



Best Model (Recall: 0.84)

- Logistic Regression model after Hyper tuning (Recall: 0.88)
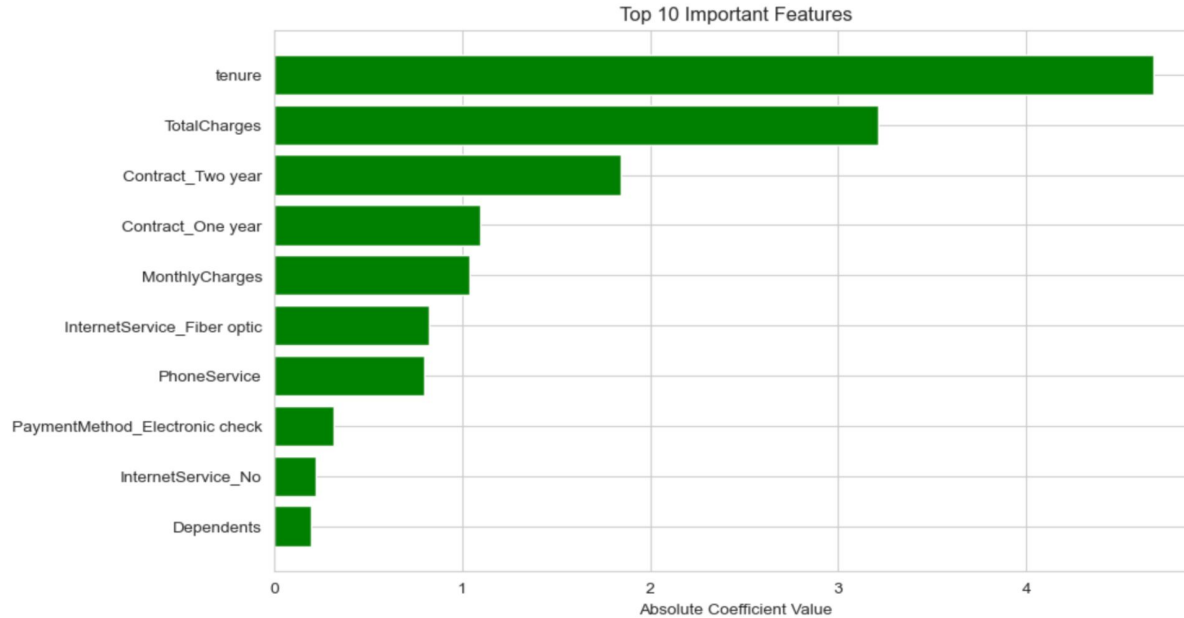

ROC Curves

- 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

Top 10 Important Features



- Tenure and Total Charges have the most significant impact
- Contract length (both long-term and short-term) and phone service have an effect on churn predictions
- Monthly charges play a role in churn predictions

# Business Recommendations:

- **Examine Contract Lengths**: Delve deeper into understanding the optimal contract duration that resonates with customers.

- **Assess Pricing Strategies**: Investigate the relationship between pricing and customer retention. Are there certain price points or packages that are more favorable?

- **Evaluate Payment Methods**: Review the variety and convenience of current payment methods to determine any correlations with churn patterns.

# Future work

- **Personalized Interventions**: Develop other 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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