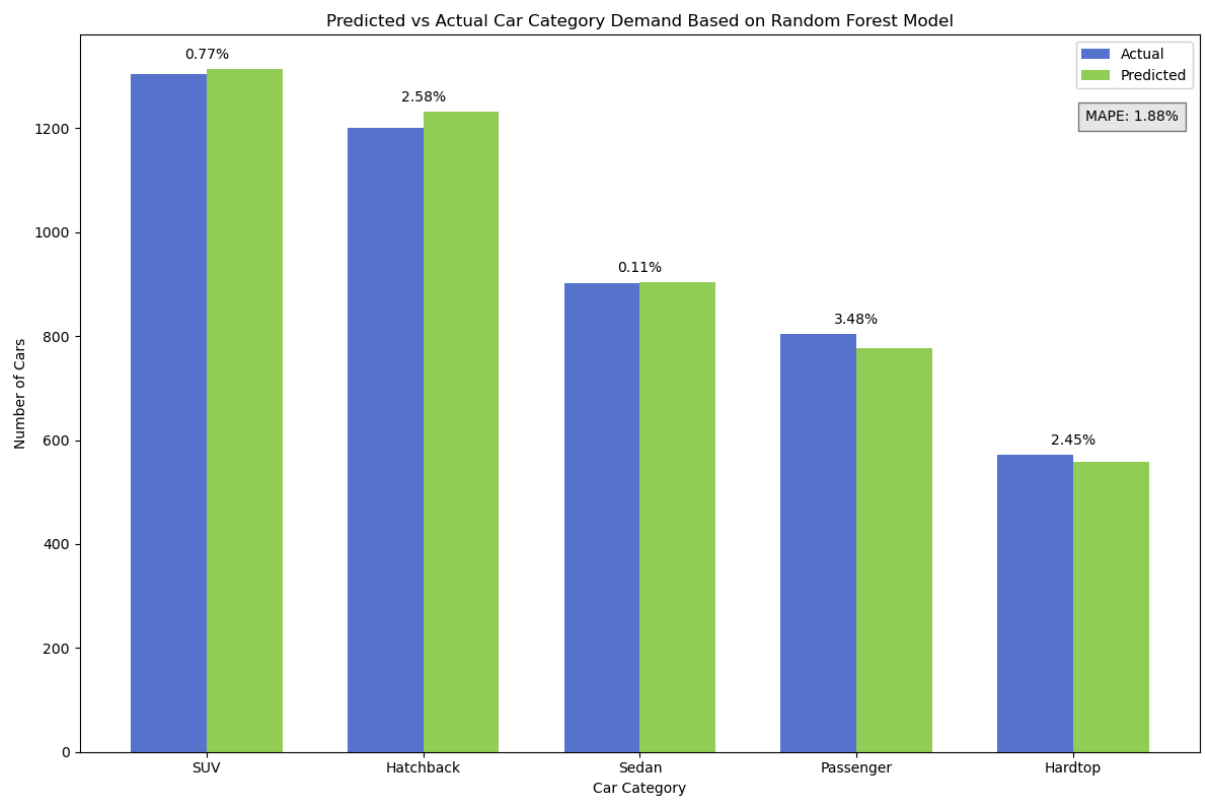
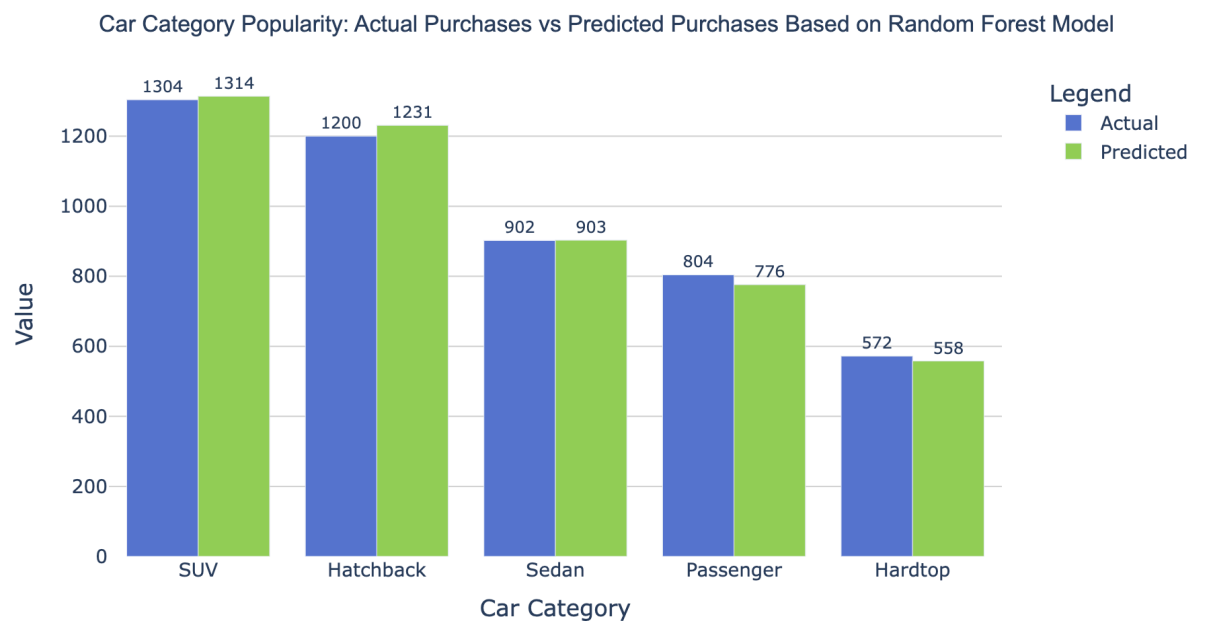


We have analyzed the provided data from the Car Sales Report for 2022 and 2023 years using 2 method for evaluating our results (Logistic Regression model and Random Forest model) and here are the insights which we received from the analysis:



Overall Prediction Accuracy is high (error $\leq 3.5\%$ across all categories)
This assures us that the forecast is reliable and enables data-driven planning across departments.



The analysis shows that the most popular car categories are SUV and Hatchback with selling power of more than 1200 units overall with higher numbers in prediction.

Based on the results, we would like to share key takeaways for each team:

Sales Team:

1. High demand for SUV and Hatchback (over 1000) can help you to focus on priorities, stocking for the most popular cars, and avoiding overstocking low-demand models such as Hardtop.
2. The sales team can focus on high-demand segments while selling the product.

Action: Prioritize SUV and Hatchback availability in key regions.

Marketing Team:

1. Forecast results can help to focus on SUVs and Hatchbacks while designing campaigns.
2. As for lower-demand models such as Passenger and Hardtop, consider running limited-time promotions to stimulate interest.

Action: targeted ads based on predicted category preference

Product Manager:

Consistent demand for SUVs suggests:

- Continue developing feature-rich, fuel-efficient SUVs.
- Consider phasing out or redesigning low-demand Hardtop models.

Action: Segment customers by predicted car preferences to guide feature development.

Business Executive:

Customer behaviour analytics reveal:

- Strong demand consistency → stable revenue stream expected.
- Data-driven decisions can reduce forecasting risk by >95%.
- Improving data for further analysis can provide more business-driven insights, such as the correlation between the customer's marital status and the type of car, the final owner of the car and its type.

Action: Use a prediction model to support quarterly sales targets and investment in high-demand segments and improve data quality for more detailed analysis.

In conclusion, we can say:

The accuracy of the analysis results can empower all stakeholders with the essential decisions and business growth.

The next steps:

- predicting whether a particular car model will be a "best-seller";
- estimating the selling price of a car;
- analyzing the car model popularity based on the region.