Project: ReCell

Analyzed the used devices dataset, built a model that will help develop a dynamic pricing strategy for used and refurbished devices, and identify factors that significantly influence the price.

Covered Skills and Tools

- Initiated the project with a thorough Exploratory Data Analysis (EDA) to define the problem of predicting used device prices and to set clear analytical questions. Examined the data's background and contents, conducting univariate and bivariate analyses to identify patterns, trends, and insights within the dataset.
- Performed extensive data preprocessing to ensure the quality and integrity of the data for modeling. This included checks for and treatment of duplicate values, missing data, and outliers. Undertook feature engineering to enhance the dataset's predictive capabilities and prepared the data for modeling.
- Developed a Linear Regression model to predict the prices of used and refurbished devices. Provided a detailed commentary on model statistics and displayed the coefficients for each predictor, directly linking them to their respective influence on the device's price.
- Rigorously tested the assumptions underlying the Linear Regression model, including linearity, independence of errors, homoscedasticity, and normality of error terms. Provided insights on the findings from these tests and their implications for model reliability.
- Evaluated the Linear Regression model's performance using various metrics to ensure its accuracy and effectiveness in predicting device prices. This evaluation offered a comprehensive view of the model's predictive power and areas for potential improvement.
- Derived actionable insights from the model's findings, emphasizing the significance of various predictors on the price of used and refurbished devices. Offered key takeaways for ReCell, enabling the company to understand which factors most significantly influence device pricing in the used and refurbished market.
- Ensured the project was presented with a high degree of professionalism. The analysis was structured logically and flowed smoothly, with a focus on crispness and visual appeal through clear, well-commented code and compelling visualizations. Concluded with actionable business recommendations, providing ReCell with strategic guidance based on the predictive model's insights.
- Other Covered Skills: EDA, Linear Regression, Linear Regression assumptions, Business insights, and recommendations.