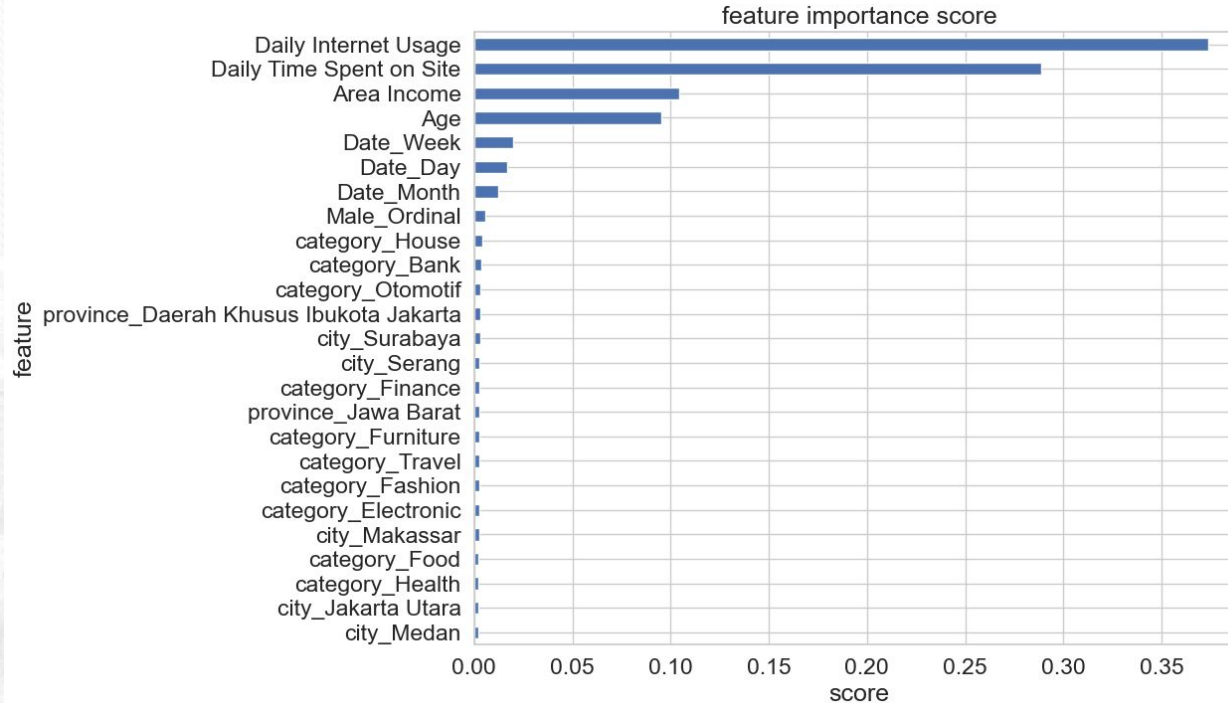


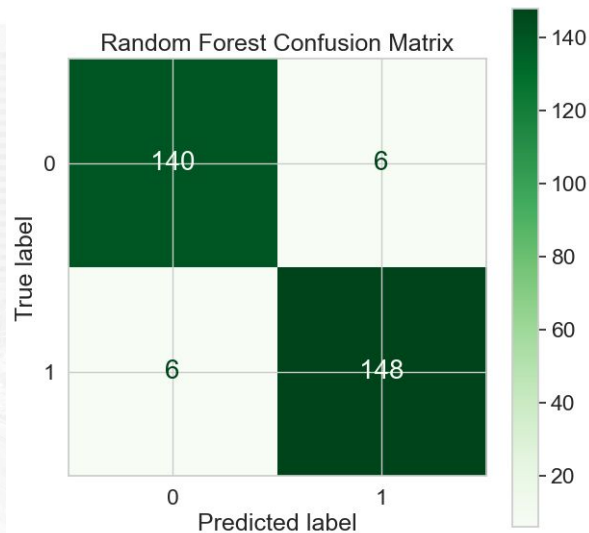
Feature Importance



Business Recommendation based on EDA and Feature Importance

- **Target users with high engagement**
 - Target users with higher usage levels (above 180 Mb) as they are more likely to be engaged online.
 - Target users with time spent more than 1 hour
- **Use age-targeted advertising**
 - Creating ads to specific age groups especially to younger age groups, focusing on products or services that are relevant to their interests and lifestyle
- **Target higher income users**
 - for products and services that are more expensive
- **Further analysis on specific day, week and month where customers are more likely to click on the ad**

Simulation



- **Before using Machine Learning (Number of Users: 300)**
 - Number of customers: 300
 - Cost: 5.000/customer = 1.500.000
 - Conversion rate: 50%
 - Average purchase value: 10.000
 - Only 150 actually click the ad
 - Revenue: 1.500.000
 - Profit: 0
- **After using Machine Learning (Number of Users: 300)**
 - Predicted Clicked customers: 154
 - Cost: 5.000/customer = 770.000
 - Conversion rate: 96.1%
 - Average purchase value: 10.000
 - Only 148 actually click the ad
 - Revenue: 1.480.000
 - Profit: 710.000

Simulation

- Before implementing a machine learning model, this company conducted marketing randomly, such as sending promotional emails to all customers without clear segmentation.
 - Costs of creating marketing content (graphic design, copywriting), and online advertising costs (e.g., Google Ads)
 - Revenue from product sales
 - Profit = Revenue - Costs
- After Using a Machine Learning Model, the company can perform better customer segmentation. For example, the model can identify customers who are more likely to purchase new products based on their purchase history, browsing behavior, and demographics.
 - Costs of developing and implementing the machine learning model, maintenance costs for the model, and costs of more targeted marketing campaigns (e.g., Facebook Ads).
 - Revenue: Increased revenue due to more effective marketing campaigns and higher conversion rates as products are more relevant to customer interests.
 - Profit: Increased profit due to a reduction in ineffective marketing costs and increased revenue.
- Overall, the simulation shows that using machine learning models in marketing can provide numerous benefits, including increased cost efficiency, higher revenue, and improved customer satisfaction