Week 10: EDA

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Problem Description

ABC Bank wants to sell its term deposit product to customers. Before launching the product, the bank aims to develop a model to understand whether a particular customer will buy their product or not, based on the customer's past interaction with the bank or other financial institutions.

EDA

In the exploratory analysis of ABC Bank's term deposit campaign data, several insights were uncovered that can help improve customer targeting. The goal was to understand which customers are more likely to subscribe to a term deposit based on their past interactions and personal information.

The dataset was clean, and the target variable was fairly balanced. We first looked at individual features. Most customers were between 25 and 60 years old, with those aged 30 to 50 showing a higher chance of subscribing. People with higher education levels and professional jobs, such as managers and technicians, were more likely to say yes. Single customers subscribed more than married or divorced ones. Customers without personal or housing loans were also more responsive.

Account balance had a weak but positive relationship with subscription — those with higher balances showed a slightly higher tendency to subscribe. The way the bank contacted customers made a big difference. Calls made to mobile phones led to more subscriptions than calls to landlines. One of the strongest indicators was whether the customer had responded positively to a previous campaign — past success often meant future interest.

Call duration stood out as the most powerful feature. Longer calls were clearly linked to higher subscription rates. However, since duration is only known after the call is over, it can't be used

for models that predict outcomes before making a call. That means while duration helps explain outcomes, it's not suitable for pre-call decision-making models.

Overall, while no single feature other than duration was highly predictive, combining customer characteristics like job, education, past responses, and contact method can help build a useful model. These insights will support smarter, more targeted marketing strategies and help the bank focus its efforts on the customers most likely to convert.

Recommendation

In summary, ABC Bank should focus on previously interested, educated, and professionally employed individuals, use mobile contact channels, avoid loan-heavy prospects, and support agents in having meaningful conversations to increase conversions. These recommendations will help increase the efficiency and success rate of future marketing campaigns.

Github Link:

https://github.com/asat94/Data-Glacier-Internship/tree/main/Week%2010%20EDA