



# BANK CUSTOMER CONVERSION ANALYSIS

PREDICTING CUSTOMER ENROLLMENT IN INSURANCE  
PRODUCTS

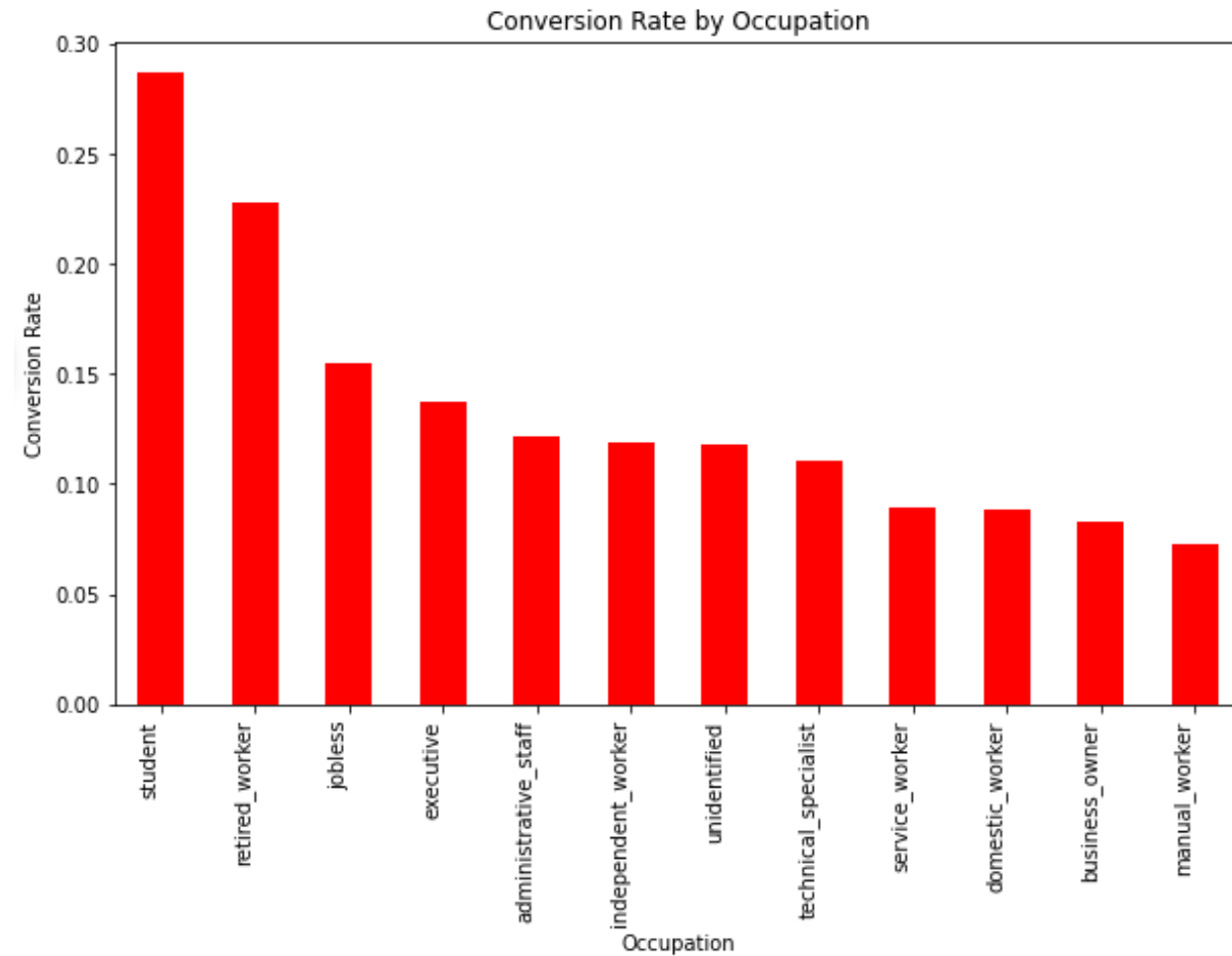
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# Business and Data Understanding

- ▶ **Objective:** To identify key customer segments that are more likely to convert to the bank's insurance products
- ▶ **Data Overview:** The dataset used was sourced from Kaggle and includes features such as Occupation, Age, Education level, Marital status, Communication channel, etc.
- ▶ **EDA Objective:** Explain the purpose of exploratory data analysis (EDA) in understanding the data better.

# Occupation and Conversion Rate

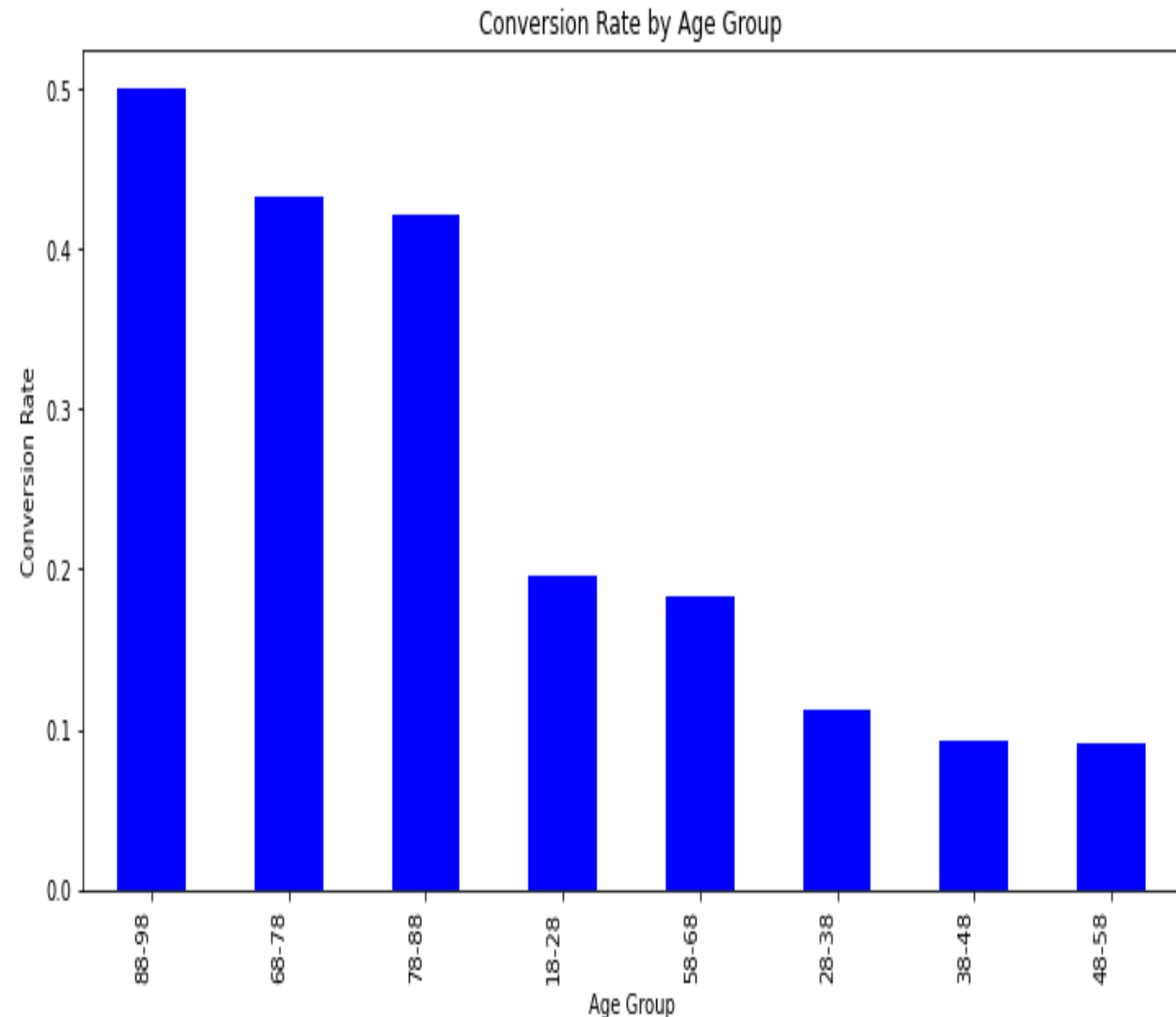
The analysis shows that certain occupations like Students, Retired Workers, and Jobless individuals have a higher conversion rate, while others like Manual Workers, Business Owners, and Domestic Workers have the lowest.



# Age and Conversion Rate

Older age groups, particularly those above 68 years, show a higher conversion rate compared to younger age groups.

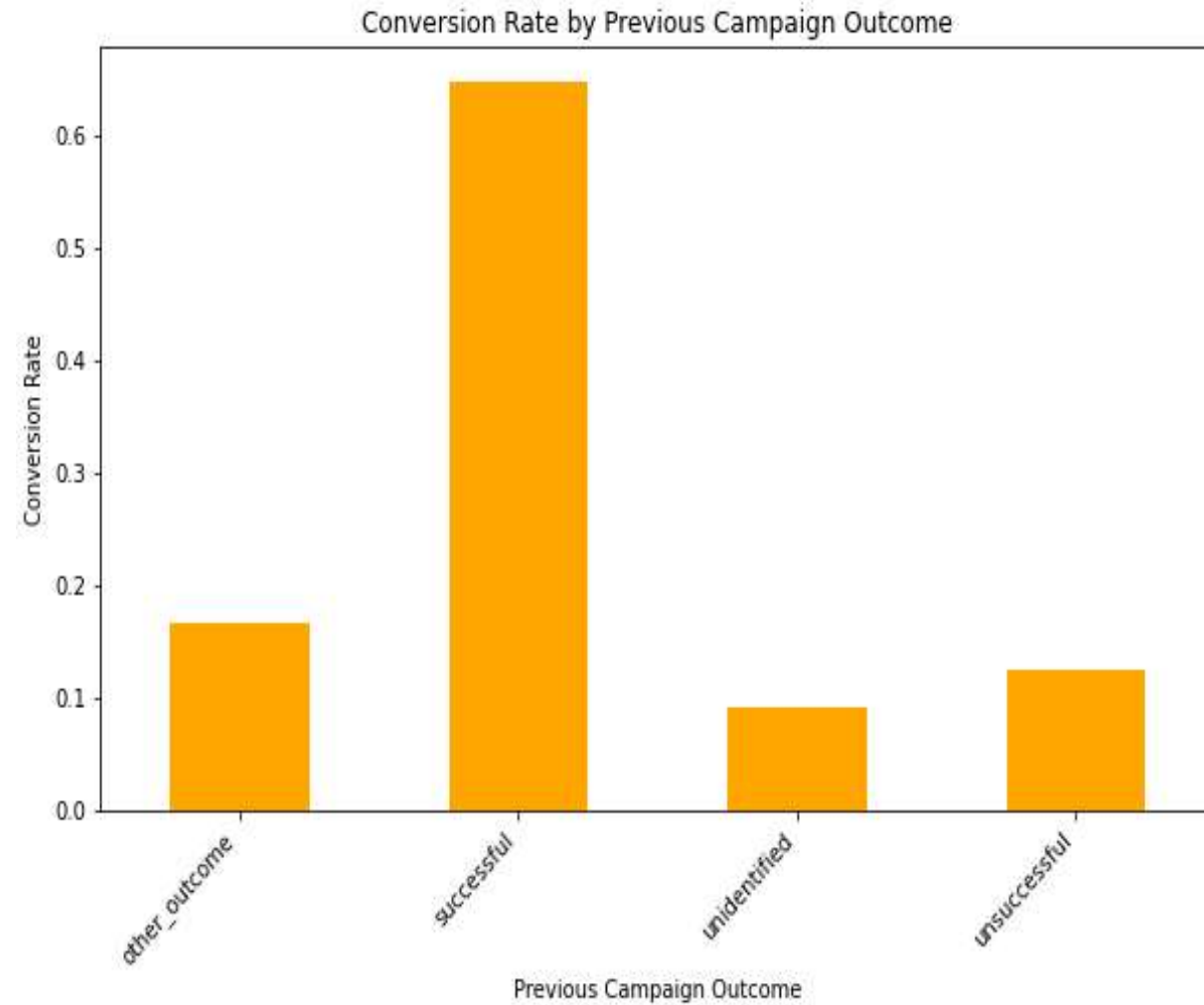
The age groups with the lowest conversion rate include: 28-58.



# Previous Campaign Outcomes

Customers who converted in previous campaigns are more likely to convert again.

This highlights the importance of follow-up and maintaining relationships.



# Classification Modeling

- ▶ Classification modeling is useful for predicting customer conversion because it helps us determine which customers are most likely to subscribe to the bank's insurance products.
- ▶ By analyzing patterns in past customer data, these models can predict whether a new or existing customer will buy insurance based on factors like their occupation, age, and previous interactions with the bank.
- ▶ The models used were a Logistic Regression and a Random Forest, the latter being a multitude of decision trees.

# Model Performance

- ▶ There were about four models created but the Random Forest model proved to be the best one due to the high performance metrics.
- ▶ The models were trained using balanced synthetic data to prevent building a model that would be biased.
- ▶ These initial models had an accuracy of about 88% while our Random Forest Model had an accuracy of 92%.
- ▶ The Random Forest model also had a very high recall of 95% which means that the model very effective in correctly identifying the customers likely to buy the insurance.

# Recommendations : Focus on High-Conversion Occupations

- ▶ Target specific occupations especially those with higher conversion rates such as students, retired workers and the jobless individuals. Tailor communications and appealing offers to these groups.
- ▶ For the occupations with lower conversion rates like manual workers, business owners and domestic workers, re-evaluate the approaches used on this groups.
- ▶ Consider conducting further research to understand why these groups are less likely to convert. Tailor messaging or offers to better align with their needs.



# Recommendations: Age-Based Campaign Strategies

- ▶ The older age groups have shown to be more receptive to the bank's insurance. The bank should aim to maximize on attracting these age groups.
- ▶ Use communication channels that resonate with older audiences, such as direct mail, email, or personalized calls, and consider simpler, clear language in all materials.
- ▶ The bank could also create offers that are particularly appealing to this demographic, such as discounted premiums for senior citizens or packages that bundle life and health insurance.

# Recommendations: Leverage Previous Campaign Success

- ▶ Customers who have successfully converted in previous campaigns are more likely to convert again.
- ▶ Develop loyalty programs specifically for these customers, such as discounts on additional insurance products or exclusive offers for them.
- ▶ Maintain regular communication with these customers through personalized follow-ups, reminding them of the benefits they've gained and introducing new offers.

# Implementation of Findings and Recommendations

- ▶ Based on the insights from the analysis, you should start designing and running marketing campaigns that specifically target these high-potential customers.
- ▶ After launching the campaigns, it is important to keep an eye on their performance. Use data to see what's working and what's not, then make adjustments as needed to improve results.
- ▶ Deploying the Random Forest model will make it available for use by various teams within the bank where the model will receive input data and return predictions.

# Conclusion

## ▶ **Key Takeaways:**

- Identified high-conversion customer segments like students and retirees.
- Age and previous campaign outcomes are strong predictors of conversion status.
- The Random Forest model provided the best predictive accuracy.

## ▶ **Model Impact:**

- Enables targeted marketing, boosting conversion rates.
- Guides strategic decision-making for resource allocation and customer engagement.

# Q/A SESSION