BANK MARKETING CAMPAIGN DATASET: METHODS, FINDINGS AND RECOMMENDATIONS

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AGENDA

- Executive summary

- Project plan recap

- Data

- Exploratory data analysis

- Modeling methods

- Findings

- Recommendations and technical next steps

EXECUTIVE SUMMARY

- Problem Statement:

  Many banks have trouble in getting new customers to sign up for their schemes or policies. This is an attempt to find what actions can provide better chances at capturing customers and retaining them.

- Solution:
  - Data analysis on past strategies and interactions with customers.
  - Evaluate campaign effectiveness in insurance.
  - Campaign analysis allows businesses to gain a deeper understanding of customer behavior and preferences.
  - Campaign analysis provides valuable feedback that can be used to iterate and improve future campaigns

PROJECT PLAN RECAP

| Deliverable	Due Date	Status
Data and EDA	03/19/2024	Completed
Methods, Findings and Recommendations	04/02/2024	Completed
Final presentation	MM/DD/YYYY	Not Started

DATA

DATA

- This uses [Bank Marketing Campaign Dataset](#) from Kaggle which has a sample size of 11 columns and more than 45000 rows.

- The time period of this dataset is from Jan 1st, 2022 – Dec 30th 2023.

- The data consists of age, occupation, marital status, education level, communication channel, call day, call month, call duration, call frequency, previous outcomes and their conversion status.
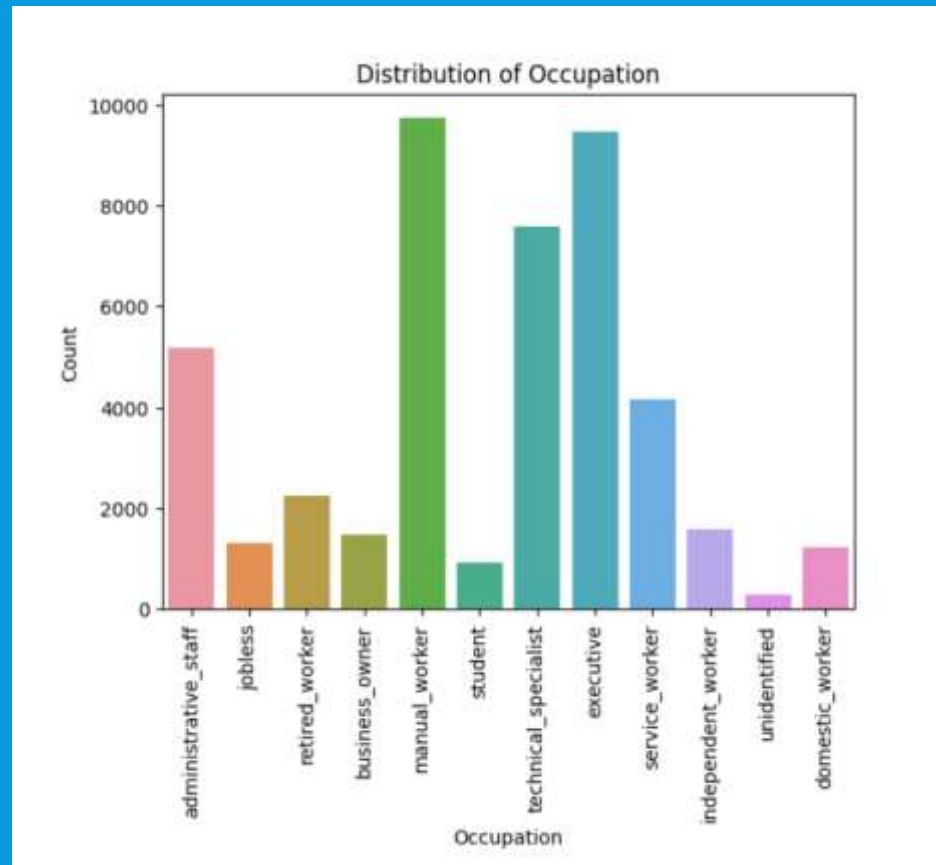
EXPLORATORY DATA ANALYSIS
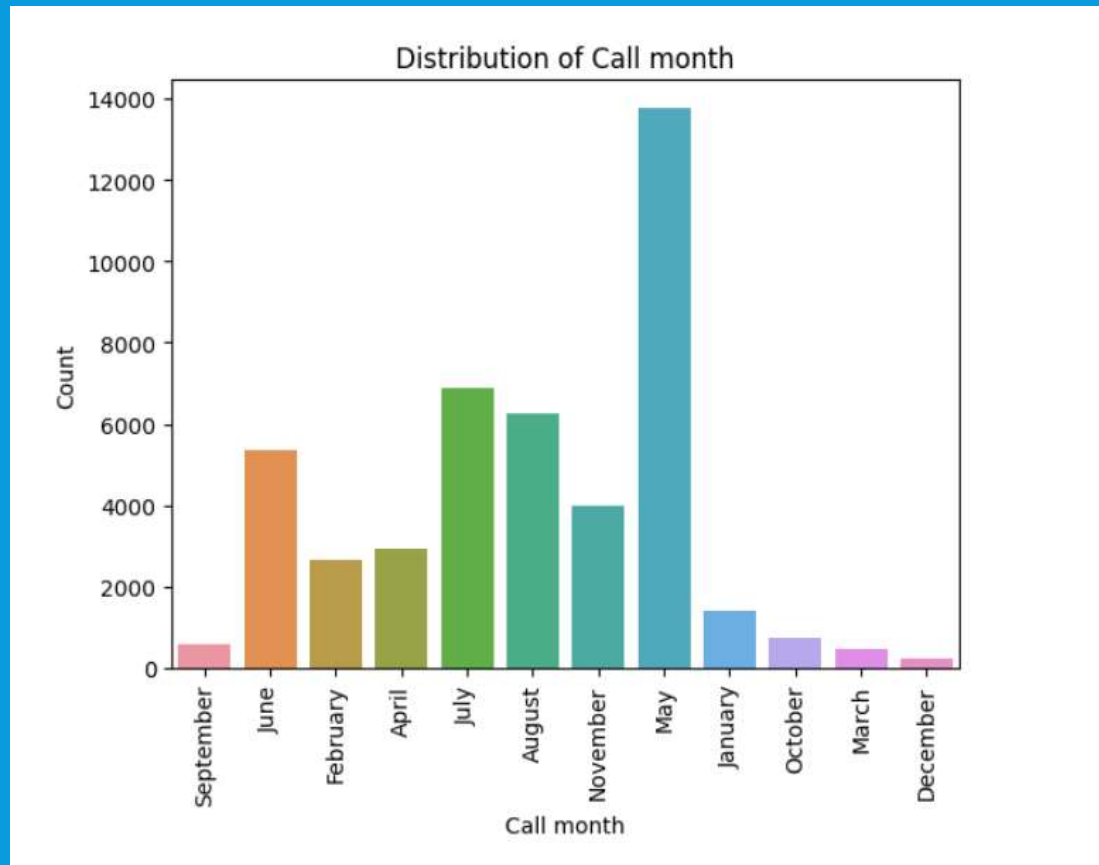
A GRAPH OF CONVERSION STATUS
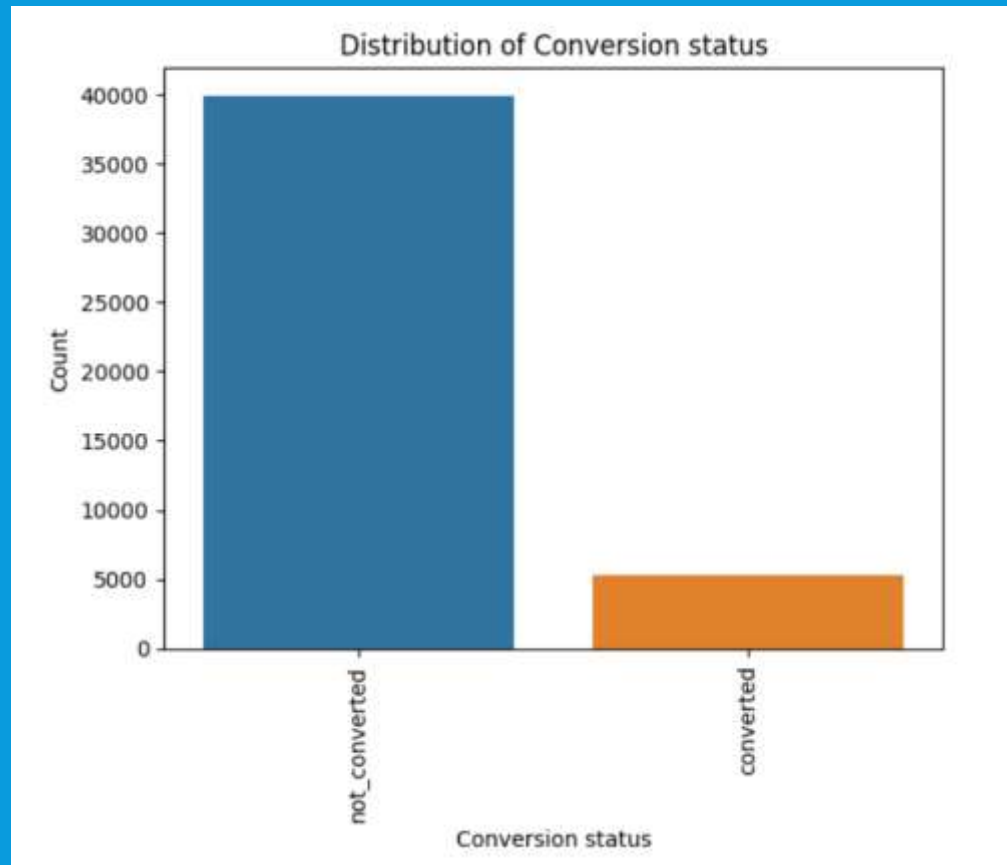
This gives an visual on the comparison of distribution of conversion status available in the dataset.
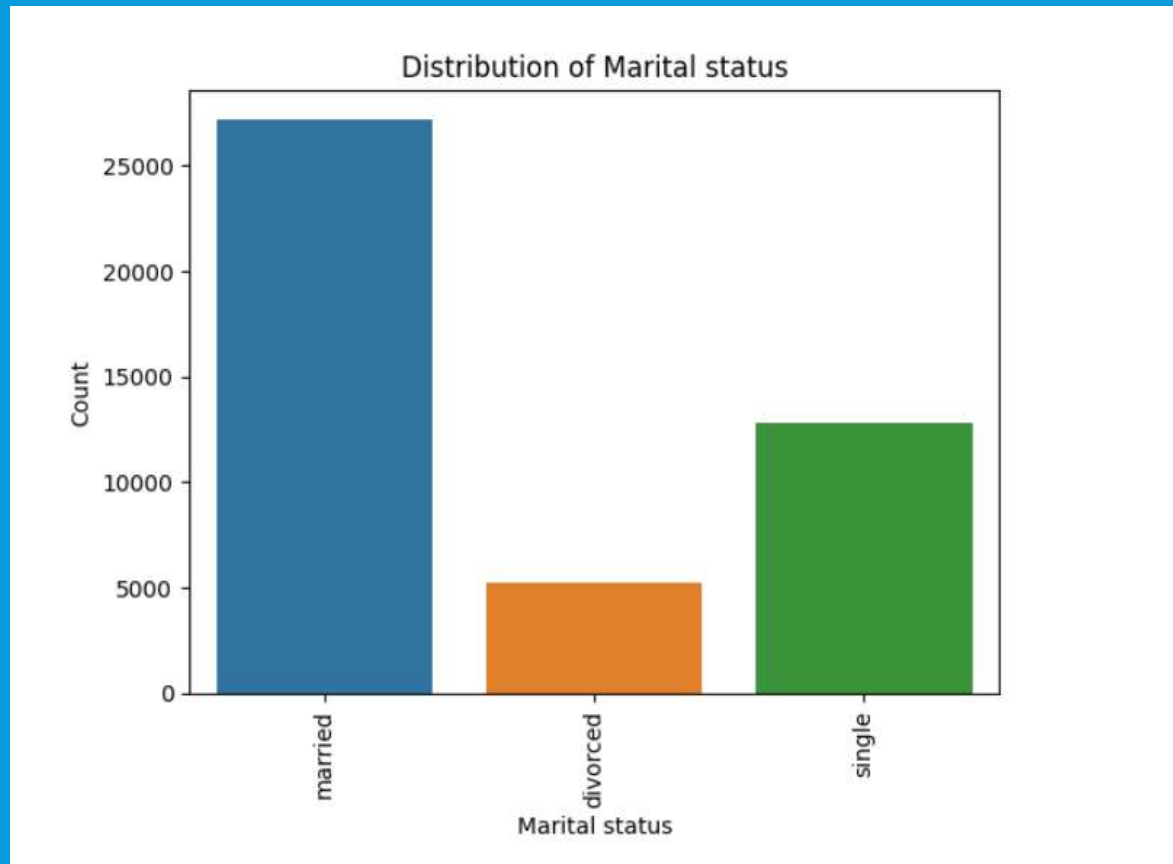
DISTRIBUTION OF OCCUPATION

This shows that a manual worker or an executive is more likely to take a scheme as compared to other occupations listed in the dataset.

DISTRIBUTION OF CALL MONTH

Calls made in May show higher positive responses by the customers

DISTRIBUTION OF MARITAL STATUS

Married customers are more likely to buy a scheme as compared to others.

MODELLING METHODS

GRADIENT BOOSTING CLASSIFIER

- When there are multiple features involved, a Gradient Boosting Classifier can be effective for multiple reasons:
  - Gradient boosting classifier is capable of understanding which features are more important in making predictions.
  - By combining multiple learners, we can capture complex relationships between the features.
  - Using these features of the classifier we can find the features that are most important and work on sectors that are weak in campaigns.

FEATURES

- The main features that gave insight to this campaign are Occupation of the customer.

- This shows us that some sectors are very poor in signing up for schemes.

- The reason could be because the schemes are not related to other sector customers.

FINDINGS

IMPROVE CAMPAIGN FOR WEAK SECTORS

- The bank should work on developing schemes that target more groups that are in minority now.

- For example, the schemes might be too expensive for students or domestic workers and might not be able to afford that so a cheaper and shorter scheme can be introduced for them.

- More data should be collected from converted customers and their comments can be observed as why they found it useful and where it can be improved.

- These findings convey the target audience that should be targeted are:
  - Customers such as manual workers and executives as they are more likely to sign up for schemes.
  - Married customers are more likely to sign up as compared to single or divorced customers.
  - More customers can be targeted in the month of May as more customers are likely to sign up for a scheme.

RECOMMENDATIONS AND DATA SCIENCE NEXT STEPS

RECOMMENDATIONS

- Contact more people from previously mentioned backgrounds as compared to students, business owners and jobless customers as they are less likely to sign up on any schemes.

- Improve campaigning in other months like December, September and March as the turn up is very low.

- Come up with new schemes that might interest the customers segments which are showing less interest currently like domestic workers and business owners.

ADDITIONAL INFORMATION