

# CASE PROJECT OF FINLATICS DATA SCIENCE EXPERIENCE PROGRAM

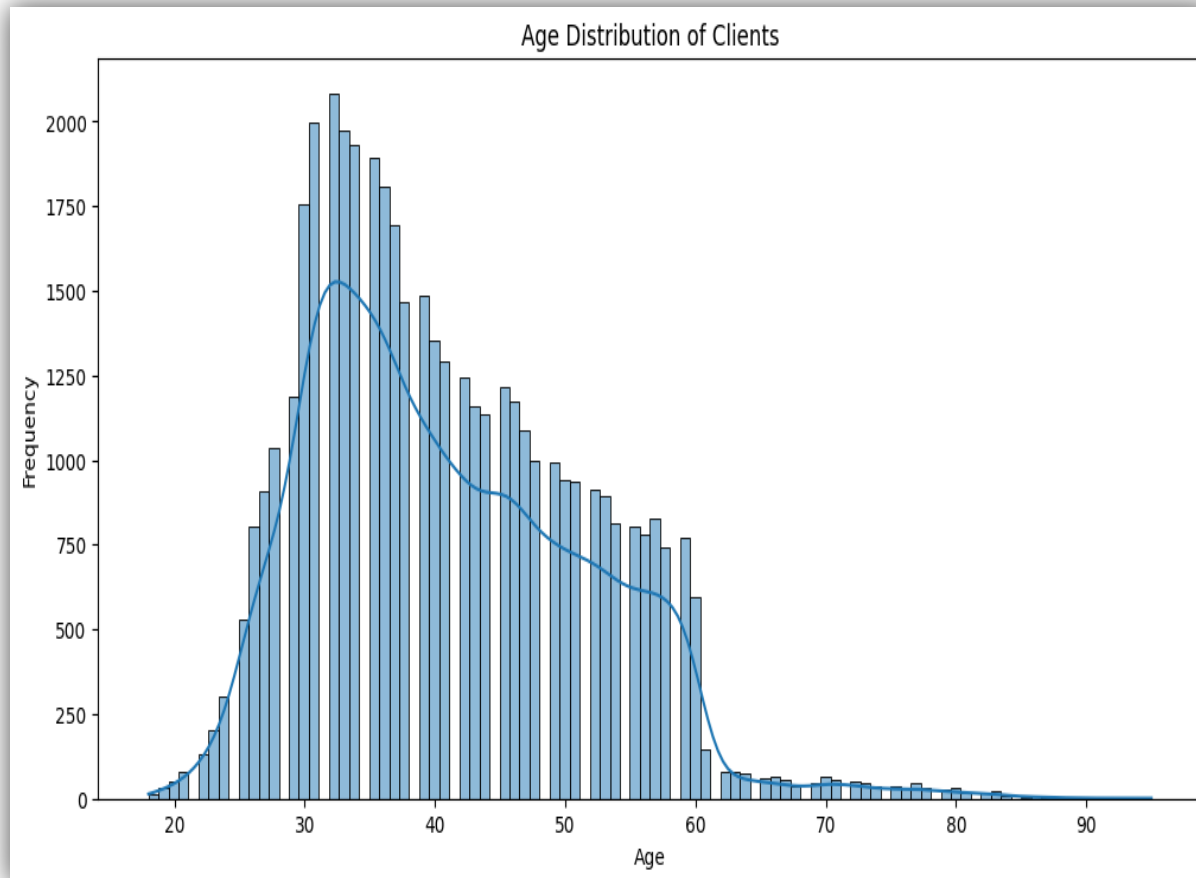
In this case project, we have been given a real-time data set of a marketing campaign run by a Portuguese Bank to sell term deposits to its prospective customers.

Submitted by: Vedanshi Aggarwal

This script provides a comprehensive approach to predict if a client will subscribe to a term deposit.

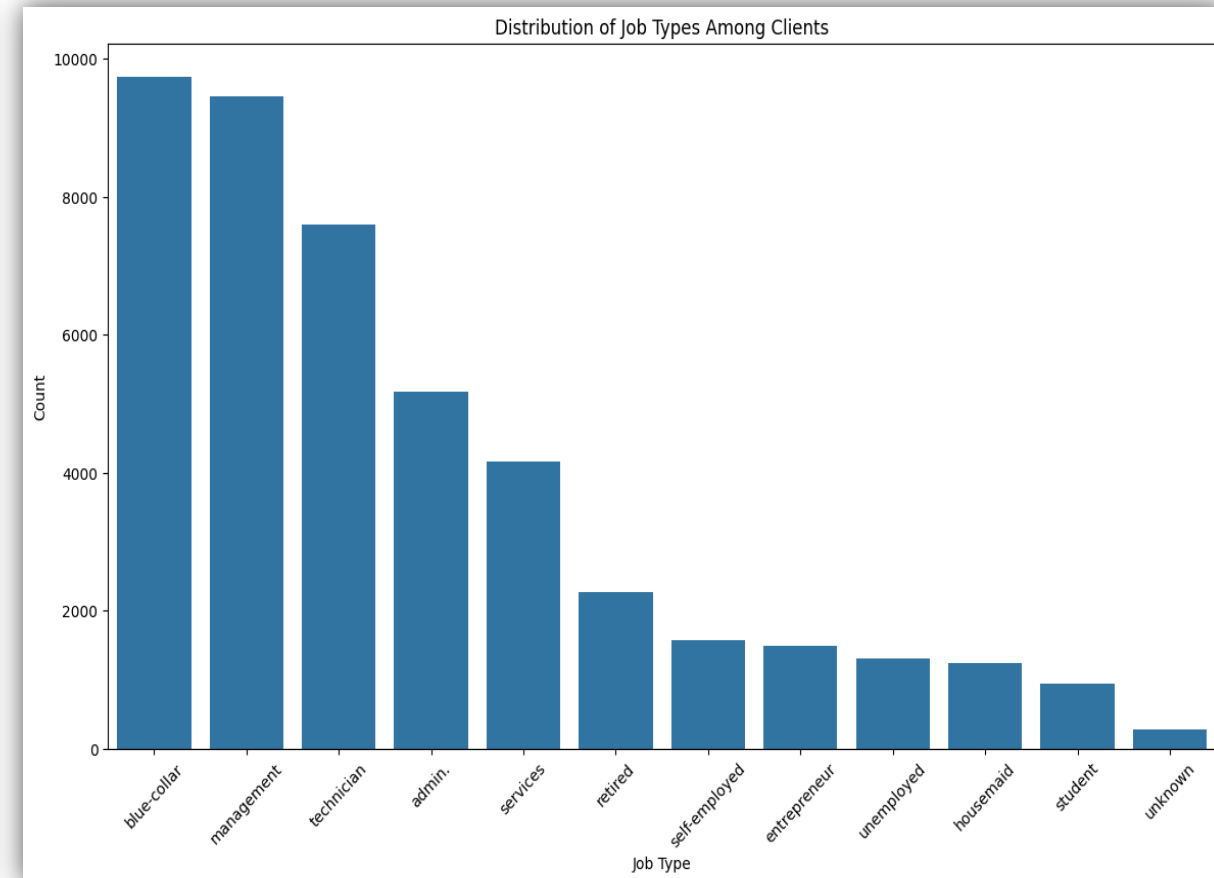
## Age Distribution

- The age of clients spans a wide range, with a significant concentration in the 30-40 age group.
- This age group might be more open to financial investments like term deposits, indicating a potential target segment.



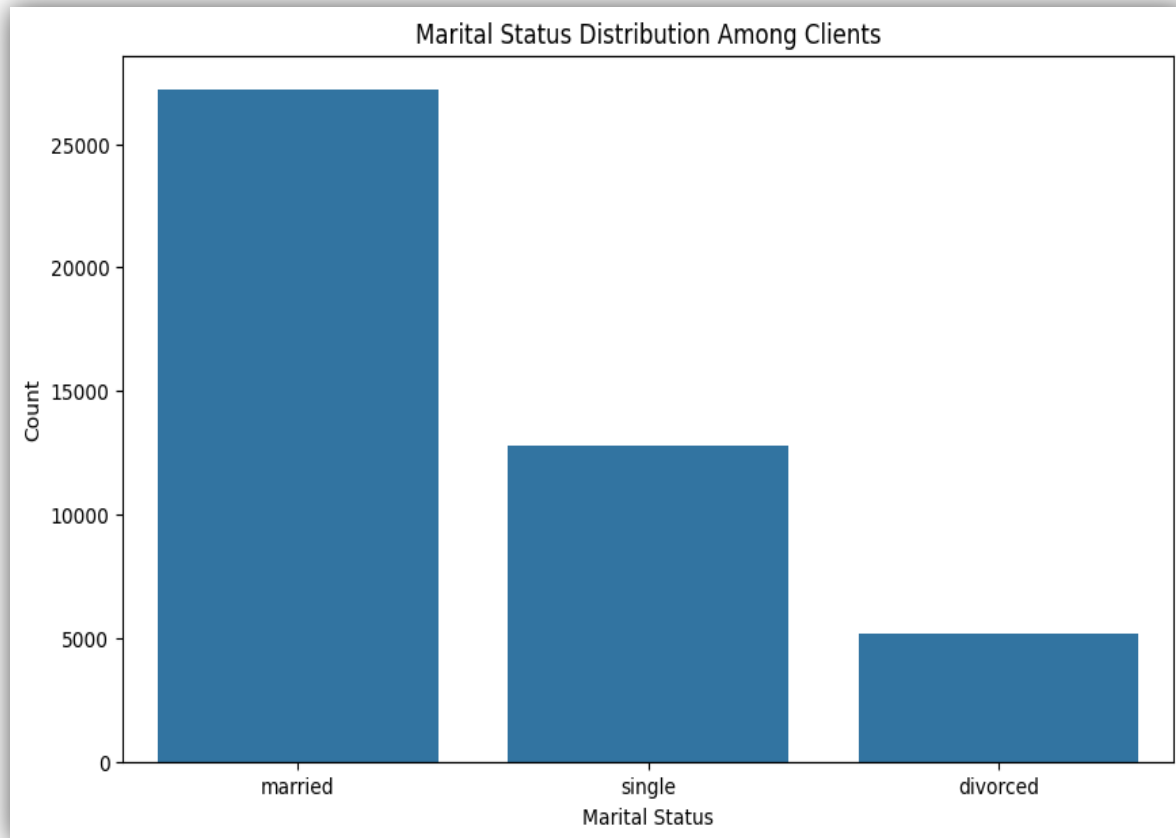
## Job type Variation

- There are diverse job types among clients, with significant numbers in blue-collar, management, and technician roles.
- Understanding job distribution helps in tailoring communication strategies to different professional groups.



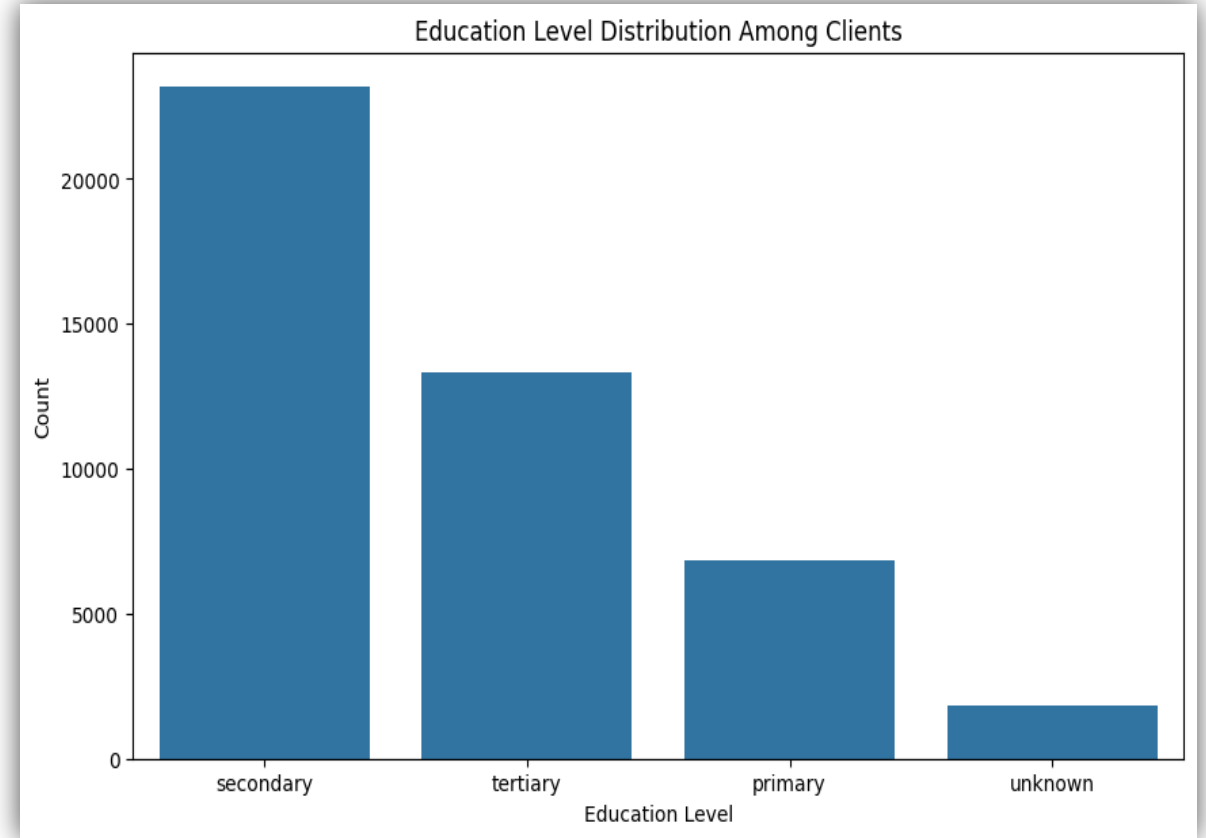
## Marital Status Distribution

- Most clients are married, followed by single and divorced.
- Married clients might have different financial priorities, which can influence their decision to subscribe to term deposits.



## Education Level

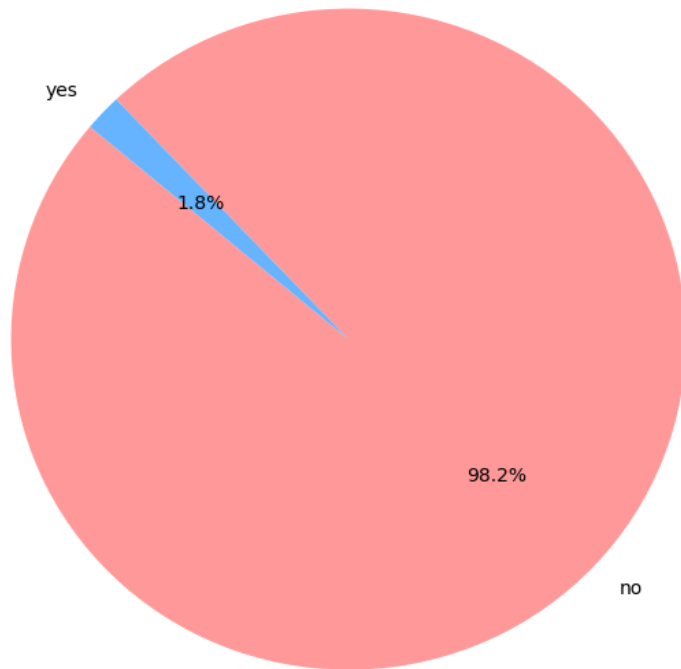
- Education levels are varied, with a majority having secondary education.
- Higher education levels might correlate with better financial literacy, impacting their investment decisions.



## Credit in Default

- A small proportion of clients have credit in default.

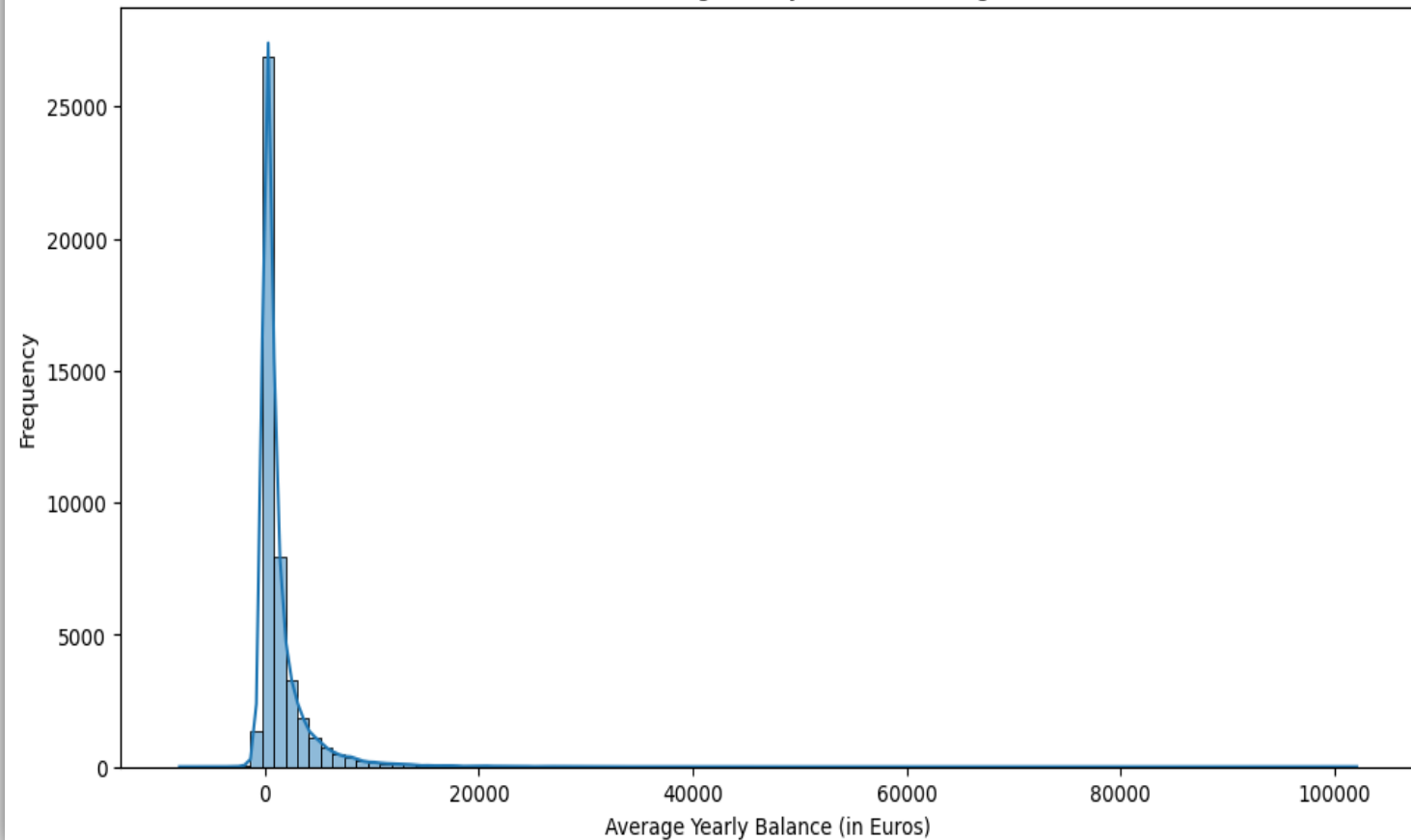
Proportion of Clients with Credit in Default



## Average Yearly Balance

- The average yearly balance shows a wide range, with some clients having significantly lower balances.

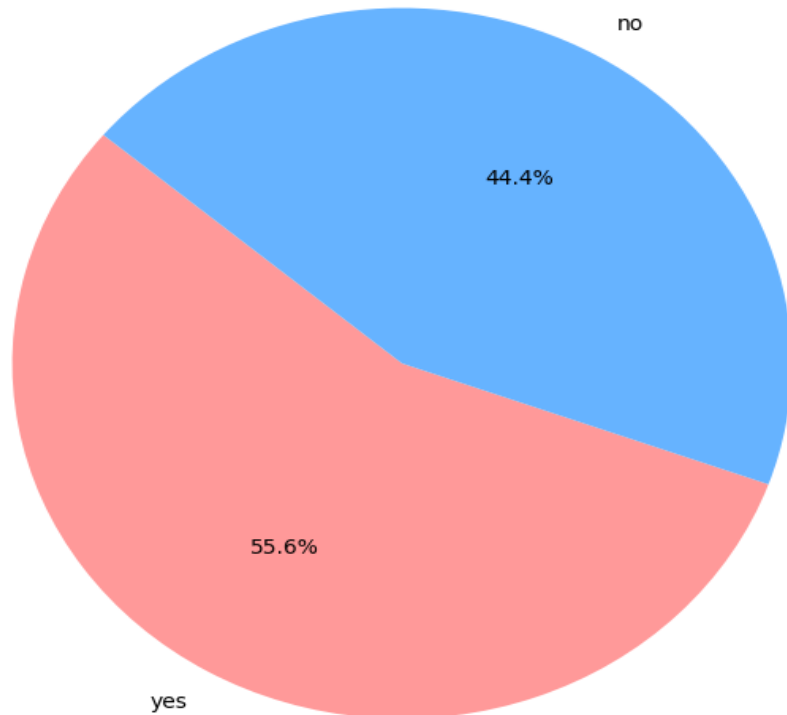
Distribution of Average Yearly Balance Among Clients



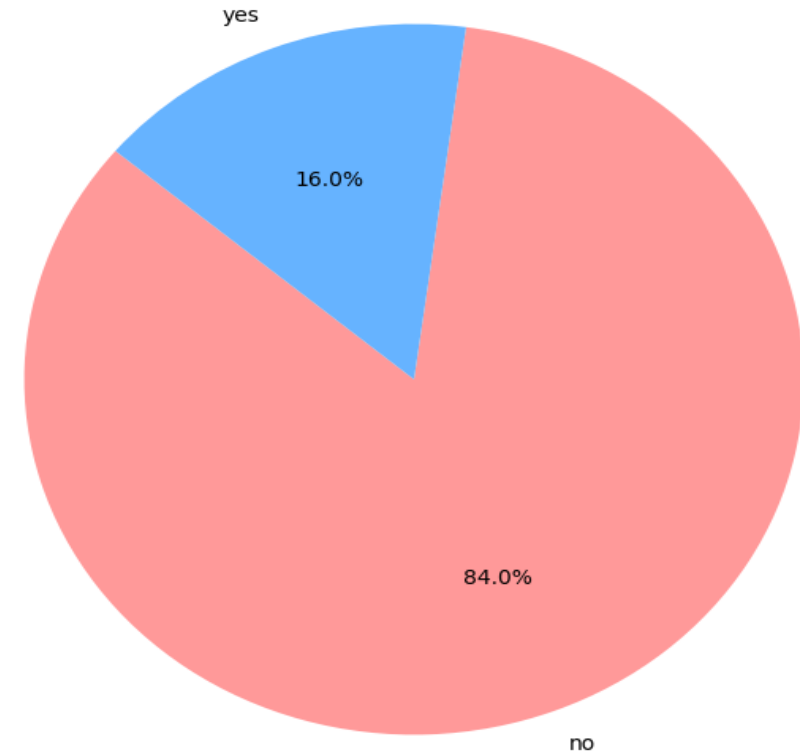
## House and Personal Loans

- A small proportion of clients have personal loans but about half portion of clients have housing loans.
- The presence of loans can affect clients' investment decisions due to existing financial commitments.

Proportion of clients with housing loans

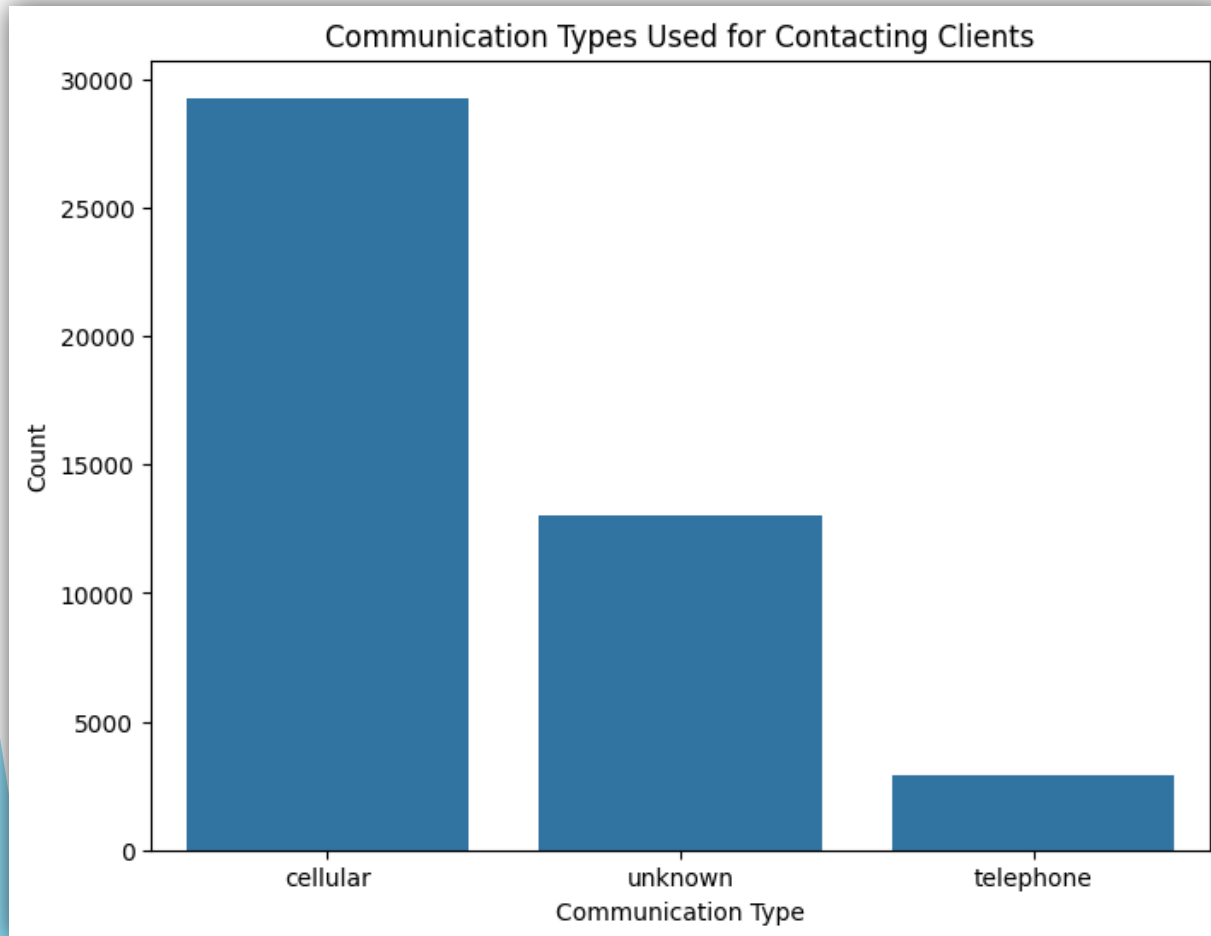


Proportion of clients with personal loans



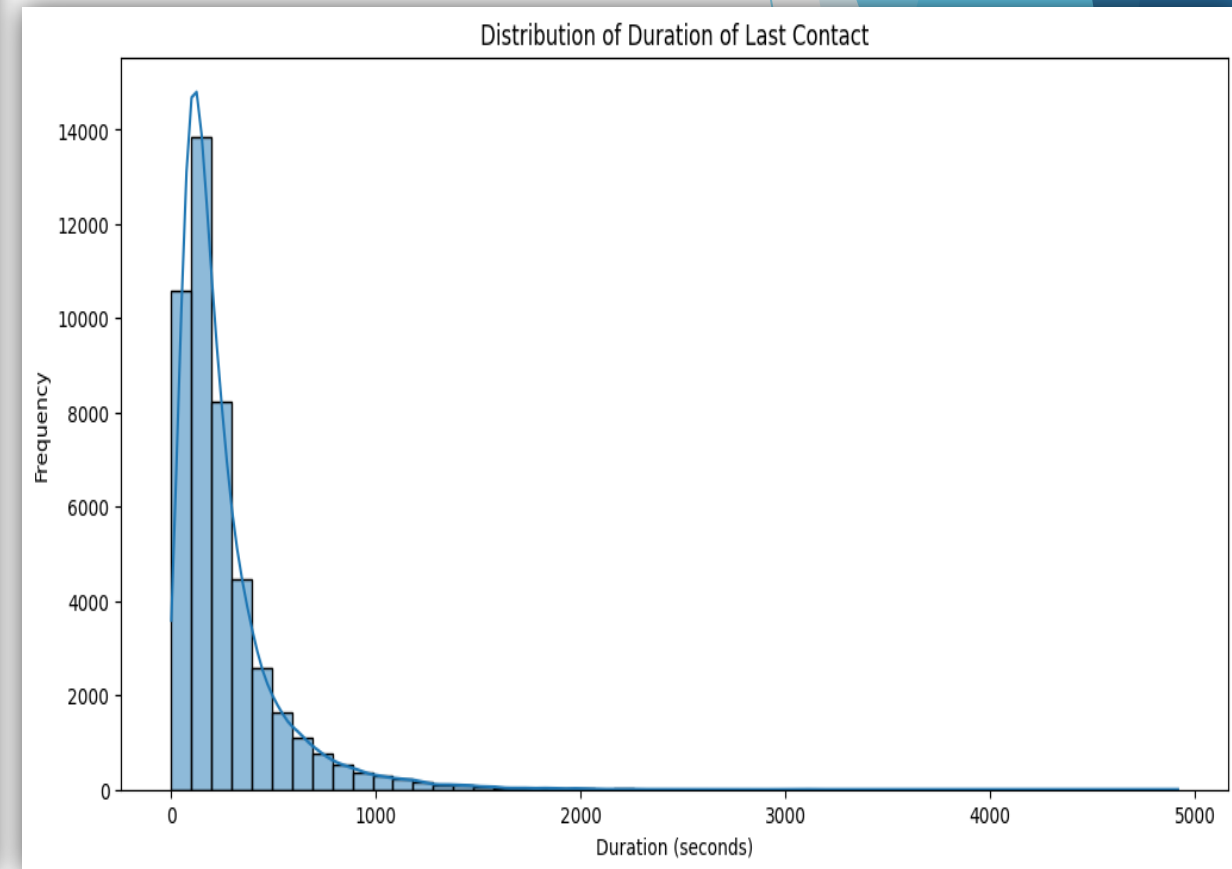
## Communication Types

- The primary method of contact is cellular.
- Understanding the effectiveness of each method can help optimize outreach strategies.



## Duration of Last Contact

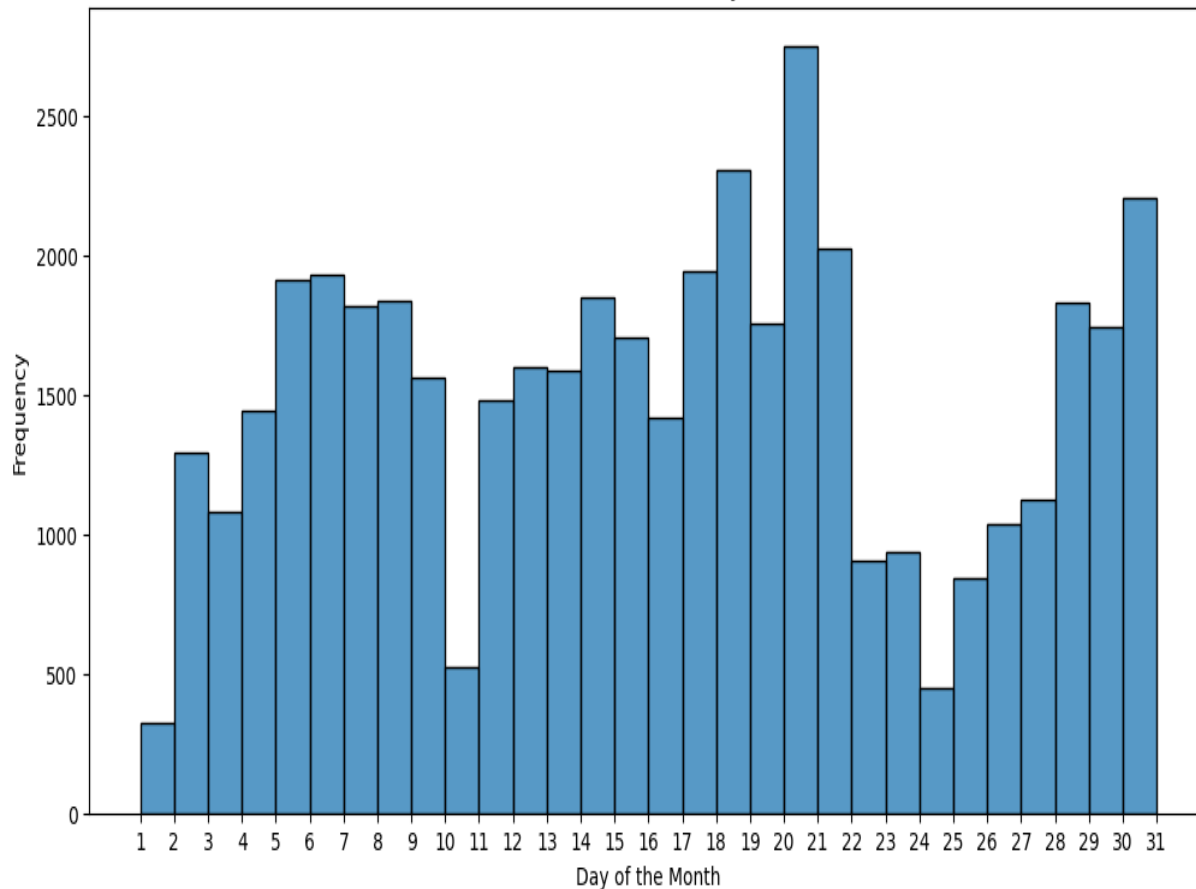
- Longer contact durations are often associated with successful subscriptions. This suggests the importance of quality interactions over the phone.
- This data shows the longer contact duration with only fewer clients which doesn't give positive results.



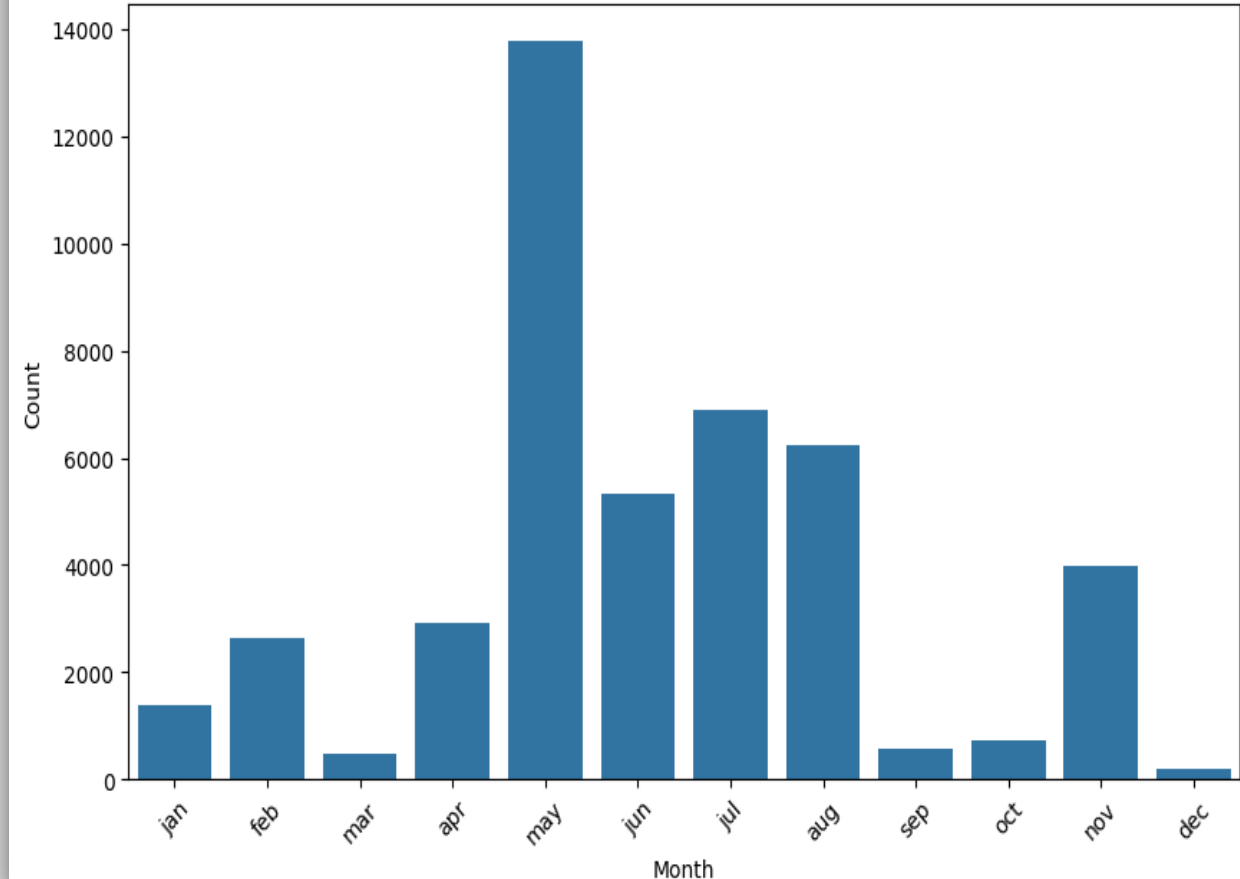
## Last Contact Day and Month

- The distribution of the last contact day is not fairly uniform.
- The last contact month shows variability, which might be influenced by seasonal factors or specific campaign timings.

Distribution of Last Contact Day of the Month



Last Contact Month Variation Among Clients



## Campaign and Previous Contacts

### **Number of Contacts During Campaign:**

- The number of contacts made during the campaign varies, with a small number receiving a high volume of contacts.
- There is an optimal number of contacts beyond which the likelihood of subscription does not increase significantly.

### **Days Since Last Contact:**

- Some clients have not been contacted for a long period, indicating gaps in follow-up.
- Regular follow-up might improve subscription rates.

### **Previous Campaign Contacts:**

- The number of contacts in previous campaigns is generally low.
- Historical engagement data can provide insights into clients' responsiveness.

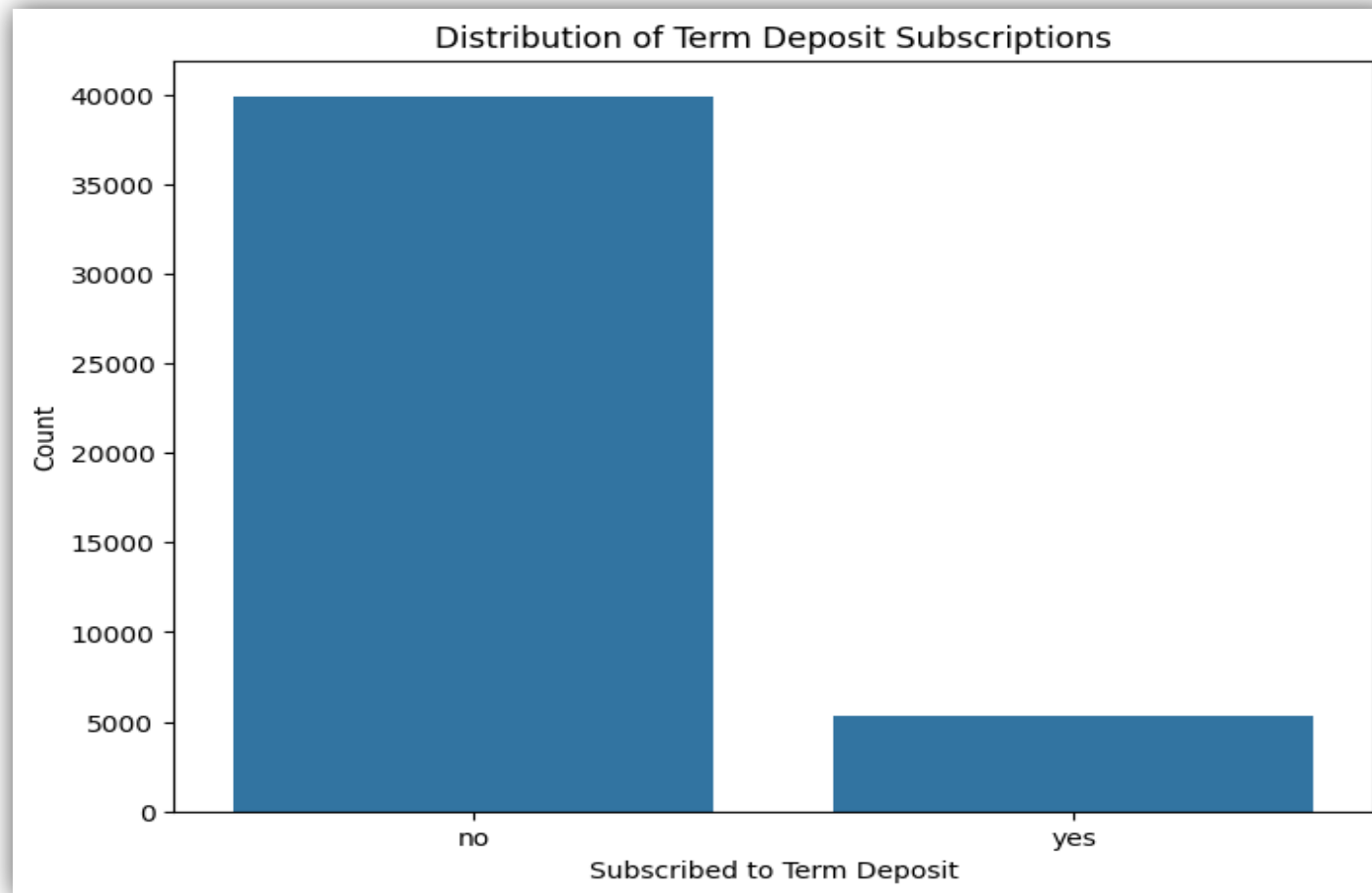
### **Outcome of Previous Campaigns:**

- The outcomes of previous campaigns (success, failure) provide valuable feedback.
- Clients with previous successful outcomes are more likely to subscribe again.



## Subscription to Term Deposit

- The dataset shows the number of clients who subscribed and who did not.
- Identifying key characteristics of those who subscribed helps in refining targeting strategies.



# Practical Implications and Recommendations

## **Target Age Groups and Job Types:**

- Focus marketing efforts on age groups and job types with higher subscription rates.
- Tailor messages to different professional segments based on their financial behaviors.

## **Marital Status and Education Level:**

- Create customized campaigns for married individuals, considering their potential for long-term investments.
- Educate clients with secondary education on the benefits of term deposits to increase their interest.

## **Balance and Loans:**

- Prioritize clients with higher balances for term deposit offers.
- Address concerns of clients without housing personal loans by highlighting flexible investment options.

## **Effective Communication Channels:**

- Optimize the use of cellular communication, which might be more effective than traditional telephone calls.
- Train call center agents to extend the duration of calls to ensure thorough client engagement.

### **Timing and Frequency of Contacts:**

- Avoid over-contacting clients within short periods to prevent annoyance.
- Implement regular follow-ups based on pdays to keep the bank's offerings top-of-mind for clients.

### **Leverage Historical Campaign Data:**

- Use data from previous campaign outcomes to identify and re-target clients with a history of positive responses.
- Learn from previous failures to improve future campaign strategies.

### **Holistic Client Profiles:**

- Build detailed client profiles considering all factors such as age, job, balance, and loan status.
- Use these profiles to predict the likelihood of subscription and tailor campaigns accordingly.

By leveraging these insights, banks can significantly enhance their marketing strategies, improve client engagement, and increase the subscription rates for term deposits, thereby optimizing their resources and achieving better results.

**Thank You ...**