

Data Storytelling

The primary purpose is to improve marketing campaign of a bank by analyzing their past marketing campaign data and recommending which customer to target efficiently. Dataset contained 20 different features for 41188 clients with target outcome for the Term Deposit (Yes or No).

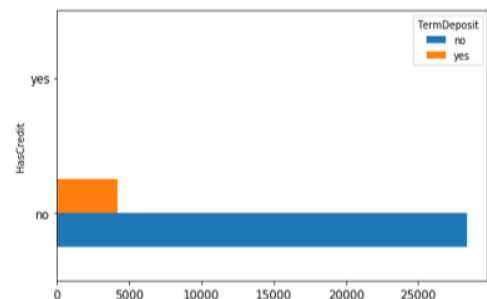
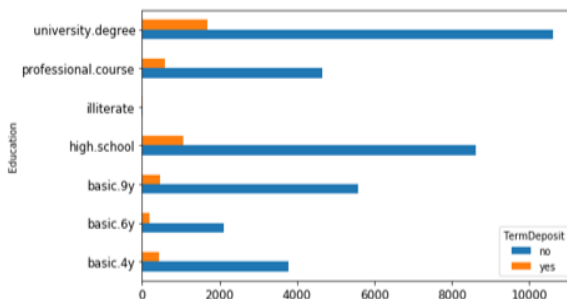
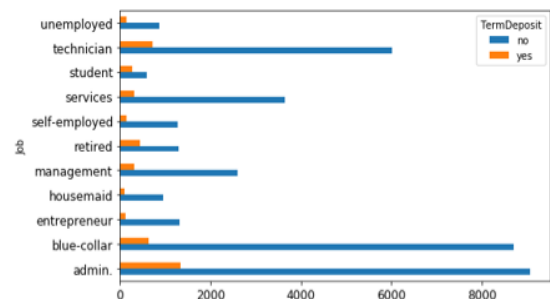
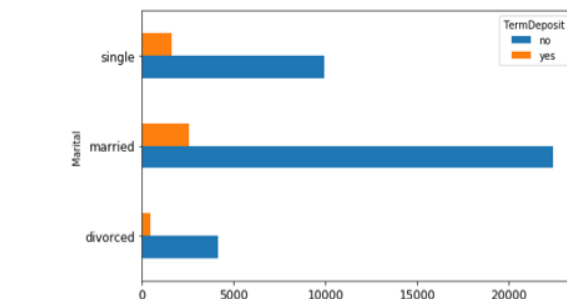
Based on the available clean data after applying data wrangling techniques, we will plot the bar graph for the features Marital Status, Job, Education, Has any House Loan, Any Personal Loan, Previous Contact Type (Cellular / Telephone), Last Contact Period Month, Last Contact Period Day of the week, Previous Outcome from conversation and see how many clients open the Term Deposit(Which Bank offers). We need to see what category of these features has more Yes and how it can be improved in a combination of these features to have more clients open Term Deposit.

```
categorical_variables = ['Marital', 'Job', 'Education', 'HasCredit', 'HouseLoan', 'PersonalLoan', 'ContactType', 'LastContactMonth', 'LastContactDay', 'PreviousOutcome']
nrows=5
ncols=int(len(categorical_variables)/nrows)
fig,ax2d=plt.subplots(nrows,ncols, figsize=(20,30))

fig.subplots_adjust(wspace=0.5, hspace=0.3)
ax=np.ravel(ax2d)

for count,col in enumerate(categorical_variables):
    df3 = pd.crosstab(df[col], df['TermDeposit'])
    df3.plot(ax=ax[count], kind='barh', fontsize=12)

plt.show()
```



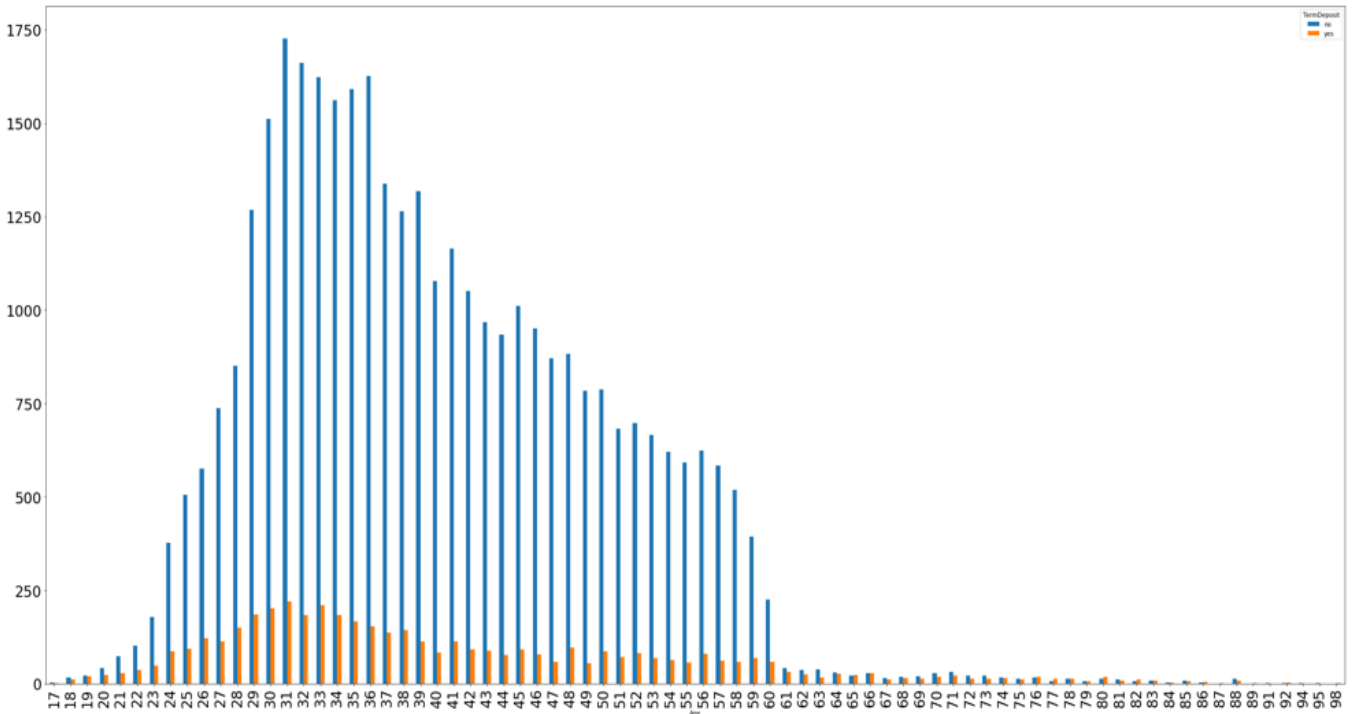


The above subplot clearly tells us high percentage of clients from the previous campaign did not open the Term Deposit, so bank has to come up with better marketing campaign to target more clients for opening Term Deposit. Some insights from above subplot:

- Target more people with better strategy for clients whose marital status is married with better education (University Degree) and has more qualified job (Admin, Blue Collar).
- Clients having personal loan rather than house loan should be considered. It looks like not enough people with personal loan have been contacted.
- More existing clients who already have Term Deposit should be considered for future marketing and these clients may more likely to open another one .

We will try to analyze if age have any impact on opening Term Deposit.

```
f, ax = plt.subplots(1, 1, figsize = (40, 20))
pd.crosstab(df['Age'],df['TermDeposit']).plot(kind='bar', ax=ax)
plt.xticks(fontsize=24)
plt.yticks(fontsize=24)
plt.show()
```



Age group (26-40) has good target for client as per previous campaign but also tells more big percentage didn't opt for Term Deposit. It clearly indicates that older people (above 55) have been neglected, but the good amount of people who have been contacted did open the account. So bank should definitely consider contact more older people for future campaign.