ANALYSIS REPORT -

Bank marketing dataset

In this project we study different approaches to predict the success of bank telemarketing.

The size of the dataset is considerably large. We have 45211 observations, with eighteen features.

FEATURES DESCRIPTION –

	Feature	Description
1.	age	numeric
2.	job	type of job, 12 categories
3.	marital	marital status, 3 categories
4.	education	education level, 4 categories
5.	housing	has a housing loan? (Yes, No)
6.	duration	contact duration with a customer
7.	loan	has a personal loan? (Yes, No)
8.	contact	contact communication type
9.	day	last contact day of the week (days)
10.	month	last contact month of year (twelve categories, months)
11.	campaign	number of contacts performed during this campaign and for this customer
12.	pdays	the number of days that passed by after the customer was last contacted from a previous campaign
13.	previous	number of contacts made before this campaign and for this customer
14.	poutcome	previous marketing campaign (failure, unknown, other, success)
15.	y	Desired outcome, did the customer took the subscription

Graph 1 - Represents count of customers in a particular job field.

```
Job
blue-collar      9732
management       9458
technician       7597
admin.           5171
services         4154
retired          2264
self-employed    1579
entrepreneur     1487
unemployed       1303
housemaid        1240
student           938
unknown           288
```
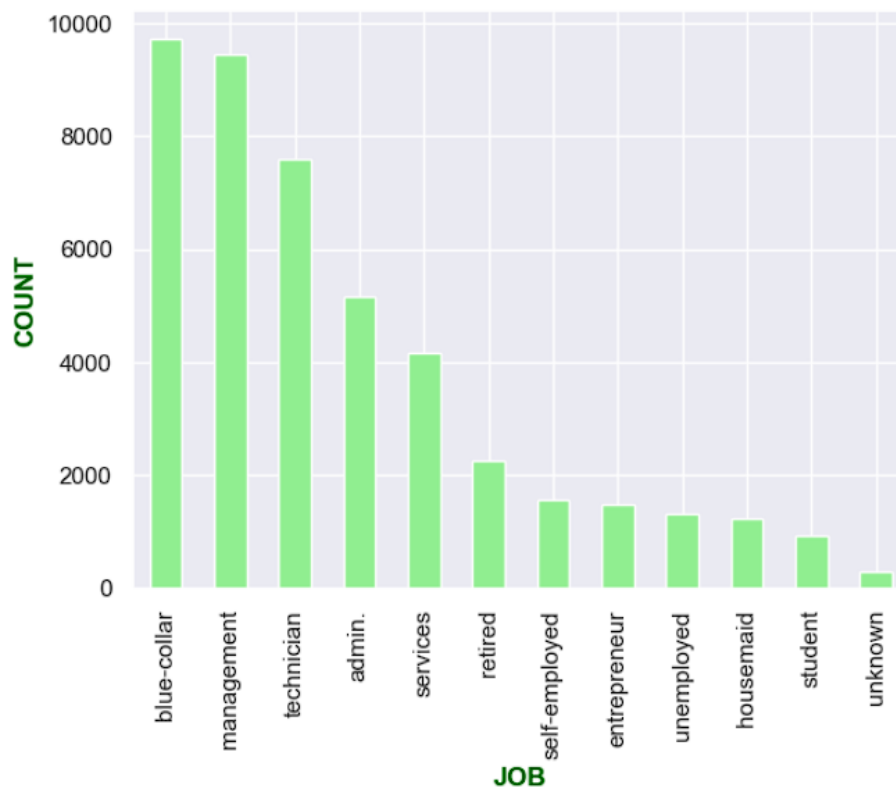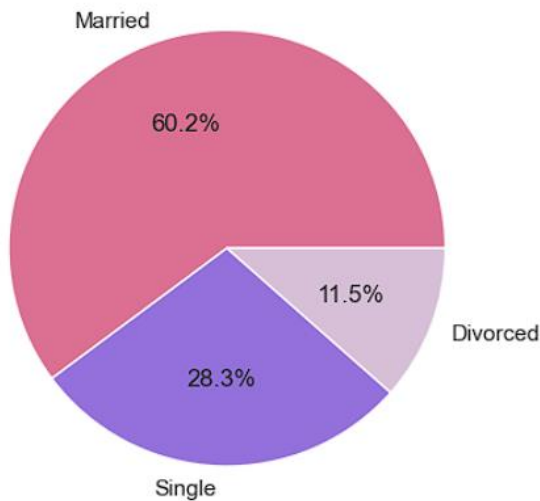

From the visual, we can conclude that people with blue-collar jobs took part the most in the campaign.
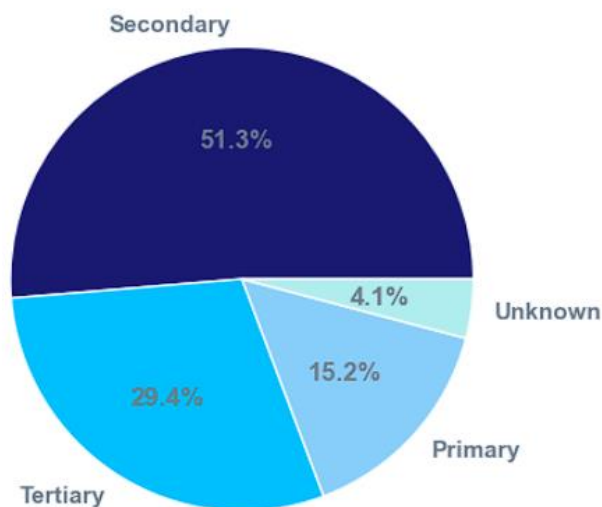
Graph 2 - Represents marital status of customers.

```
marital
married      27214
single       12790
divorced      5207
```


There are more married people who took part in the campaign than single people or those with unknown marital statuses.

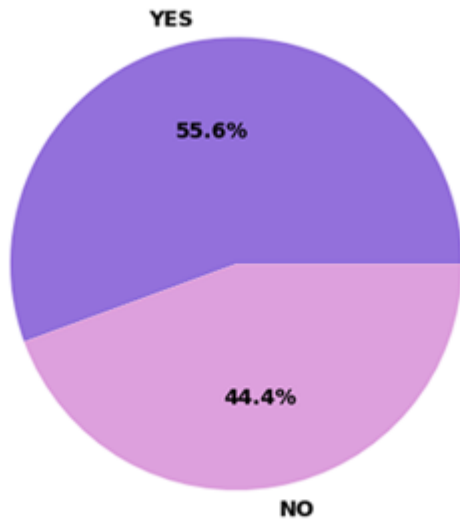## Graph 3 - Represents highest education pursued by the customers in contact.

```
education
secondary    23202
tertiary     13301
primary       6851
unknown       1857
```


There are more customers who had a secondary education who had taken part in the campaign.
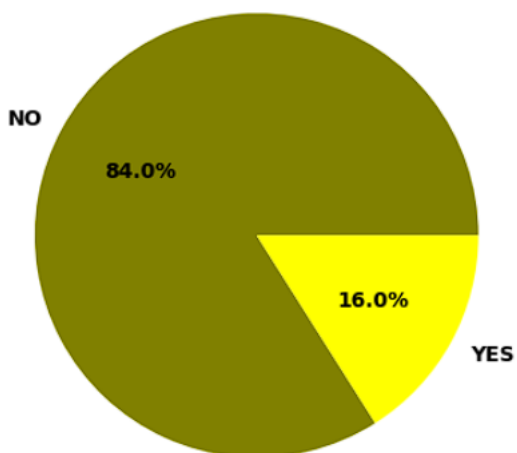
Graph 4 - Represents customers who took a housing loan.

```
housing
yes     25130
no      2008
```


Most of the customers don't have a housing loan.

Graph 5 - Represents customers who took a personal loan.
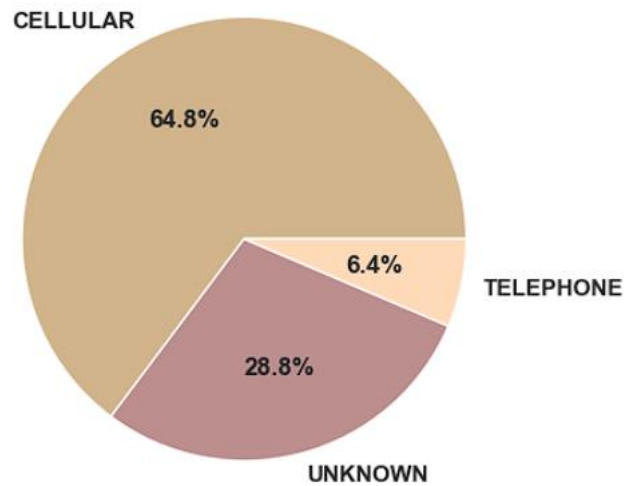
```
loan
no      37967
yes      7244
```


Most of the customers had not taken a personal loan.

## Graph 6 - Represents the contact communication type customer prefer.

```
contact
cellular     29285
unknown      13020
telephone     2906
```


Graph 7 - Represents the number of days last contact was made with the customer.

```
day
20    2752
18    2308
21    2026
17    1939
6     1932
5     1910
14    1848
8     1842
28    1830
7     1817
19    1757
29    1745
15    1703
12    1603
13    1585
30    1566
9     1561
11    1479
4     1445
16    1415
2     1293
27    1121
3     1079
```
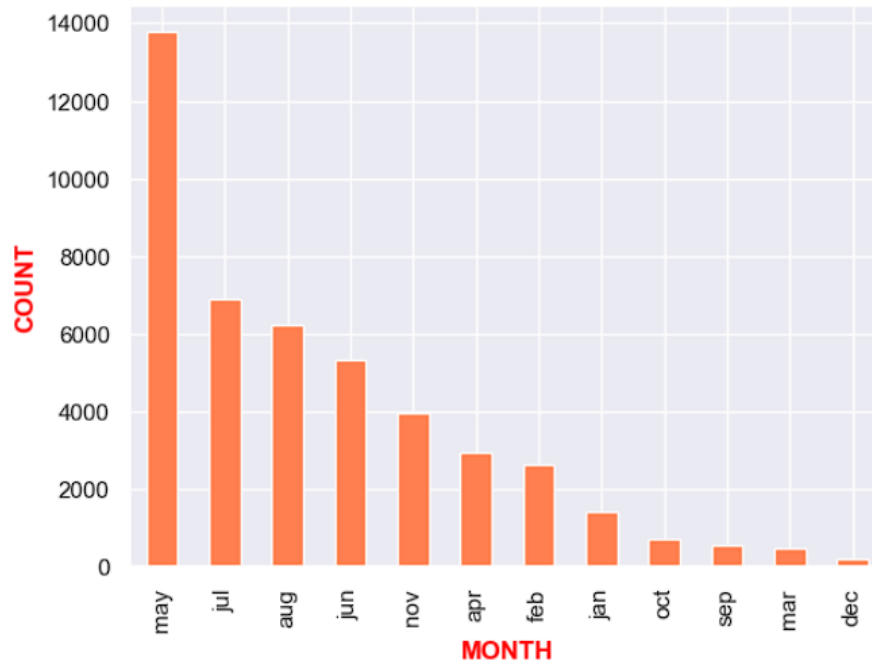
```
26    1035
23     939
22     905
25     840
31     643
10     524
24     447
1      322
```
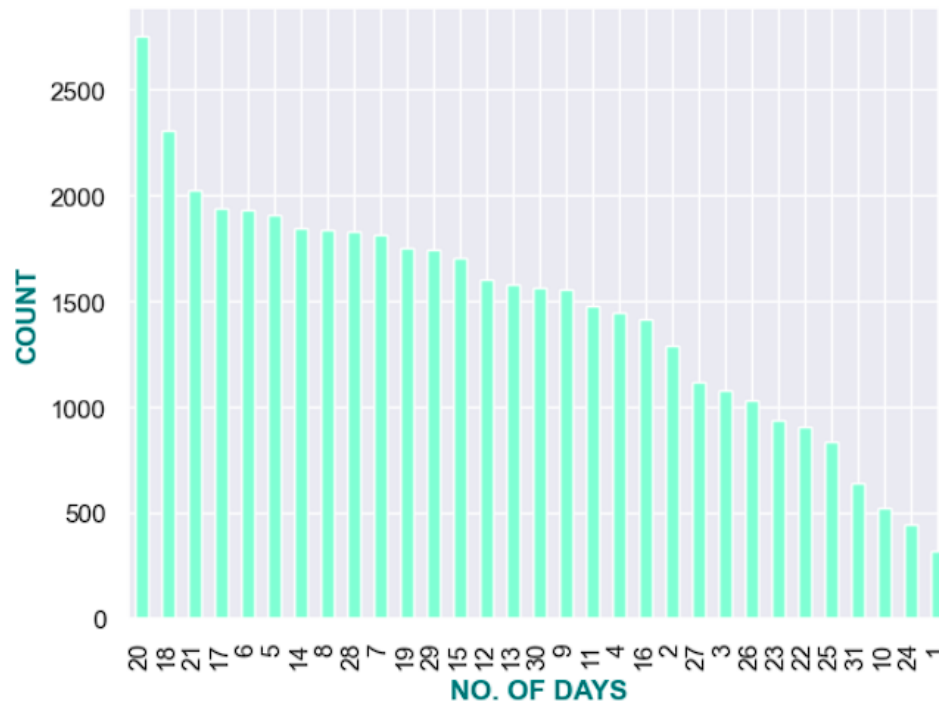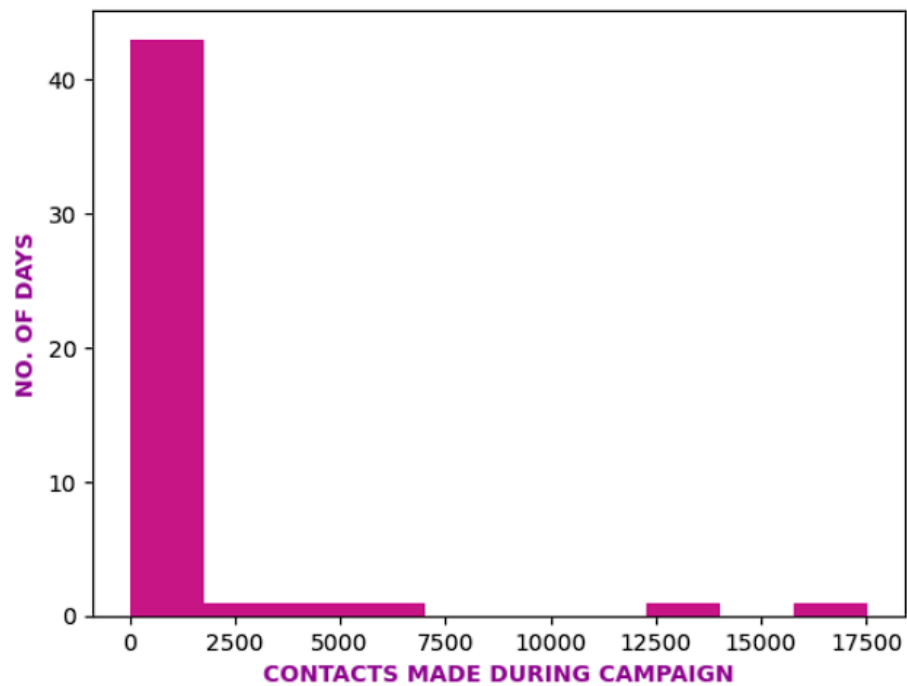

**Graph 8 - Represents the last month of contact made in the year with the customer.**

```
month
may    13766
jul     6895
aug     6247
jun     5341
nov     3970
apr     2932
feb     2649
jan     1403
oct      738
sep      579
mar      477
dec      214
```
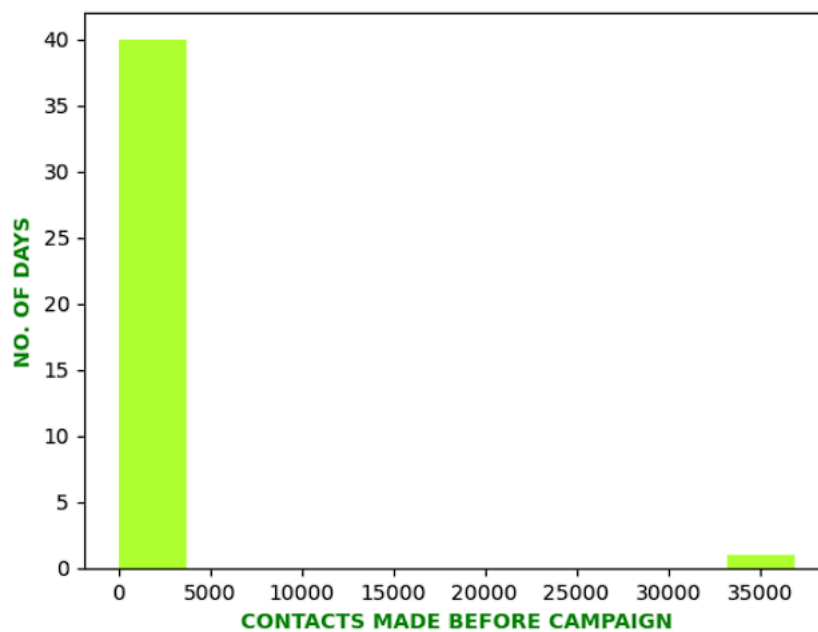
Graph 9 - Represents the number of contacts made during the campaign.

Graph 10 - Represents the number of days that passed by after the customer was last contacted from a previous campaign.
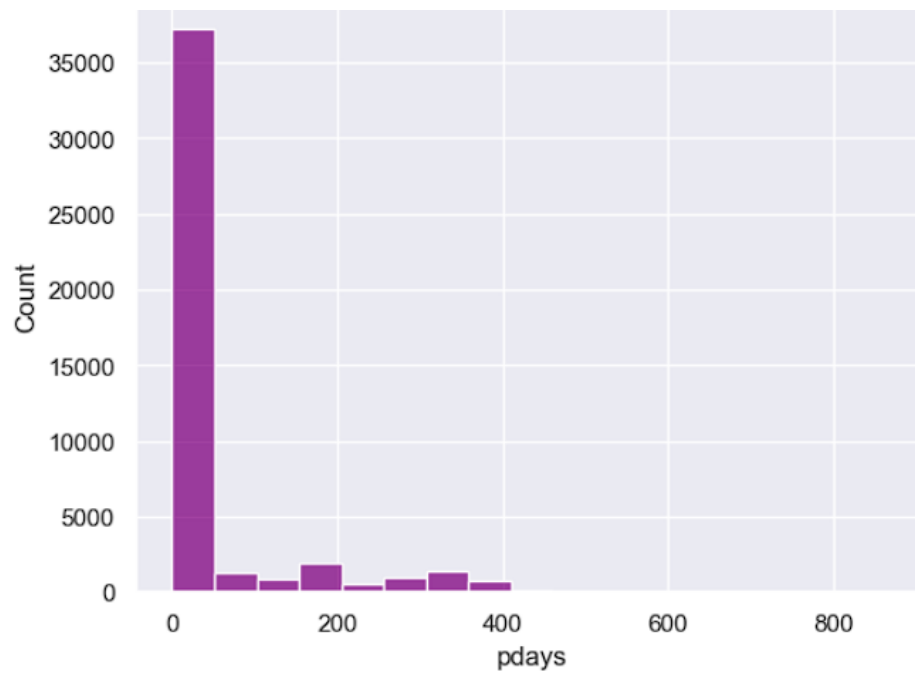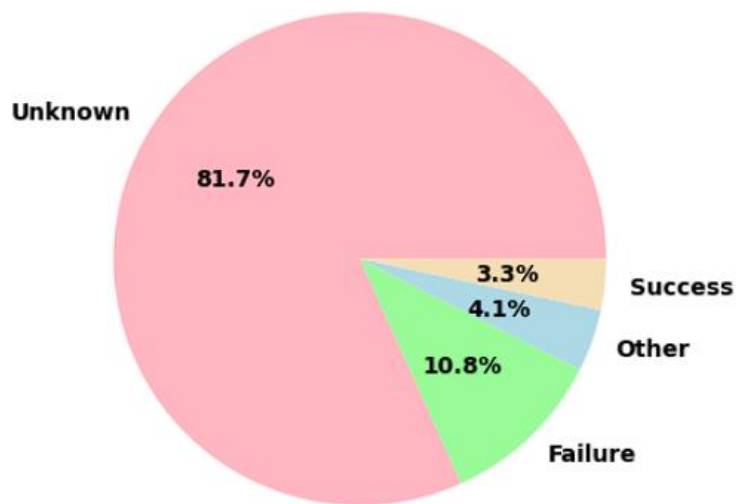

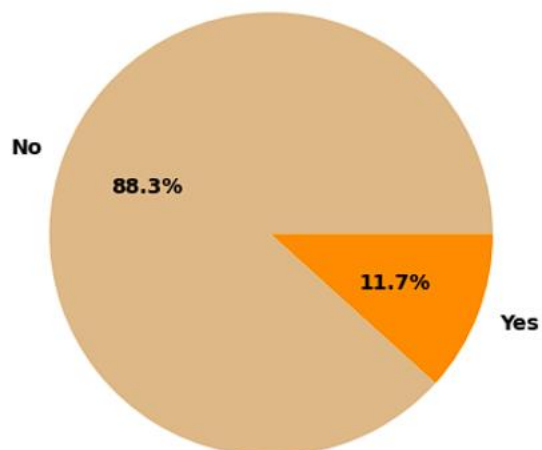**Graph 11 – Represents the number of contacts made before the campaign.**

## Graph 12 - Represents the previous marketing campaign's reviews.

## Graph 13 - Represents whether the customer took the subscription.

Graph 14 - Represents count of educational level as per the job.

job	education	
admin.	secondary	4219
	tertiary	572
	primary	209
	unknown	171
blue-collar	secondary	5371
	primary	3758
	unknown	454
	tertiary	149
entrepreneur	tertiary	686
	secondary	542
	primary	183
	unknown	76
housemaid	primary	627
	secondary	395
	tertiary	173
	unknown	45
management	tertiary	7801
	secondary	1121
	primary	294
	unknown	242
retired	secondary	984
	primary	795
	tertiary	366
	unknown	119
self-employed	tertiary	833
	secondary	577
	primary	130
	unknown	39
services	secondary	3457
	primary	345
	tertiary	202
	unknown	150
student	secondary	508
	tertiary	223
	unknown	163
	primary	44
technician	secondary	5229
	tertiary	1968
	unknown	242
	primary	158
unemployed	secondary	728
	tertiary	289
	primary	257
	unknown	29
unknown	unknown	127
	secondary	71
	primary	51
	tertiary	39
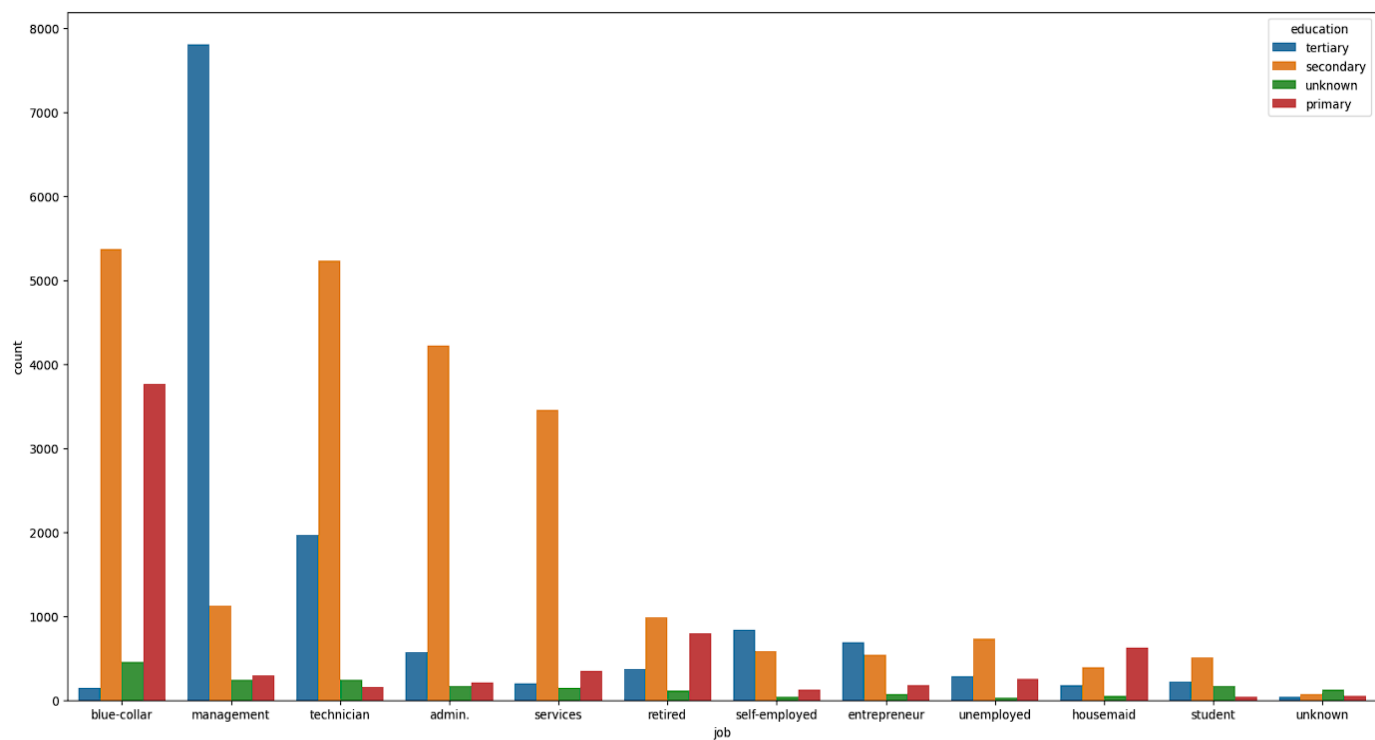
Graph 15 - Represents various distributions
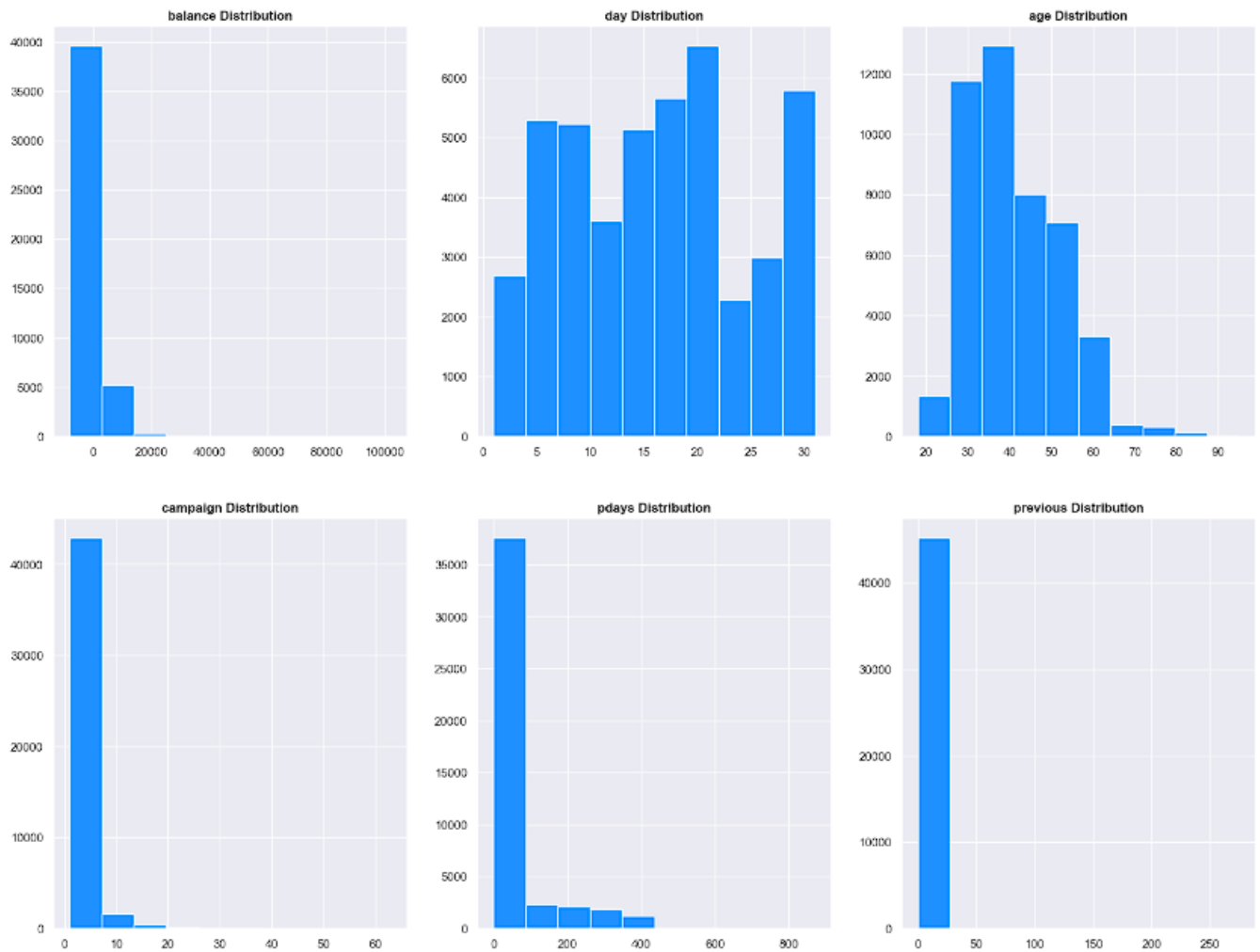
IN A NUTSHELL,

About people's decision on agreeing for the terms and services provided by this particular bank telemarketing company, we can say that it is influenced by the quality of marketing campaign and whether the customer has a loan or not. As for the marketing campaign, the number of contacts performed to a particular customer during a marketing campaign was unable to explain whether a customer was interested in subscription or not. On the contrary, the contact duration to a particular customer, was able to explain customer's interest on subscription.