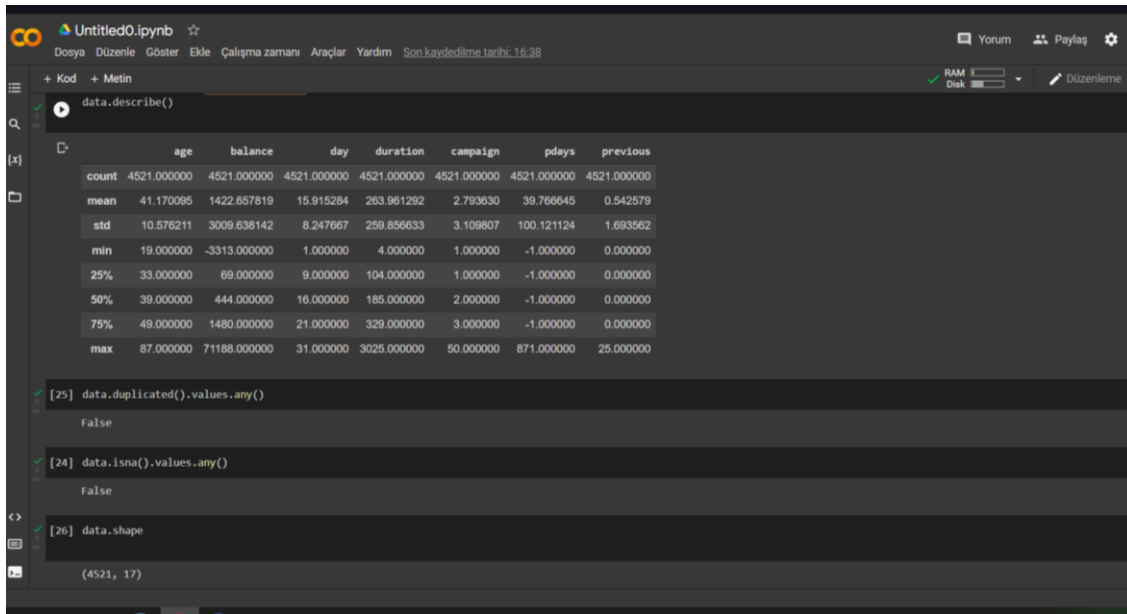


Intern: Onur Baltacı



The screenshot shows a Jupyter Notebook interface with a dark theme. The top bar includes the Jupyter logo, the filename 'Untitled0.ipynb', and various menu options like 'Dosya', 'Düzenle', 'Göster', 'Ekle', 'Çalışma zamanı', 'Araçlar', 'Yardım', and 'Son kaydedilme tarihi: 16:38'. On the right, there are icons for 'Yorum', 'Paylaş', and 'Düzenleme', along with RAM and Disk usage indicators. The left sidebar shows a file explorer with a folder icon and a search icon. The main area displays the code 'data.describe()' and its output as a table with 8 columns: count, age, balance, day, duration, campaign, pdays, and previous. The output shows summary statistics for each column.

```
data.describe()
```

	age	balance	day	duration	campaign	pdays	previous
count	4521.000000	4521.000000	4521.000000	4521.000000	4521.000000	4521.000000	4521.000000
mean	41.170095	1422.657819	15.915284	263.961292	2.793630	39.766645	0.542579
std	10.576211	3009.638142	8.247667	259.856633	3.109807	100.121124	1.693562
min	19.000000	-3313.000000	1.000000	4.000000	1.000000	-1.000000	0.000000
25%	33.000000	69.000000	9.000000	104.000000	1.000000	-1.000000	0.000000
50%	39.000000	444.000000	16.000000	185.000000	2.000000	-1.000000	0.000000
75%	49.000000	1480.000000	21.000000	329.000000	3.000000	-1.000000	0.000000
max	87.000000	71188.000000	31.000000	3025.000000	50.000000	871.000000	25.000000

```
[25] data.duplicated().values.any()
```

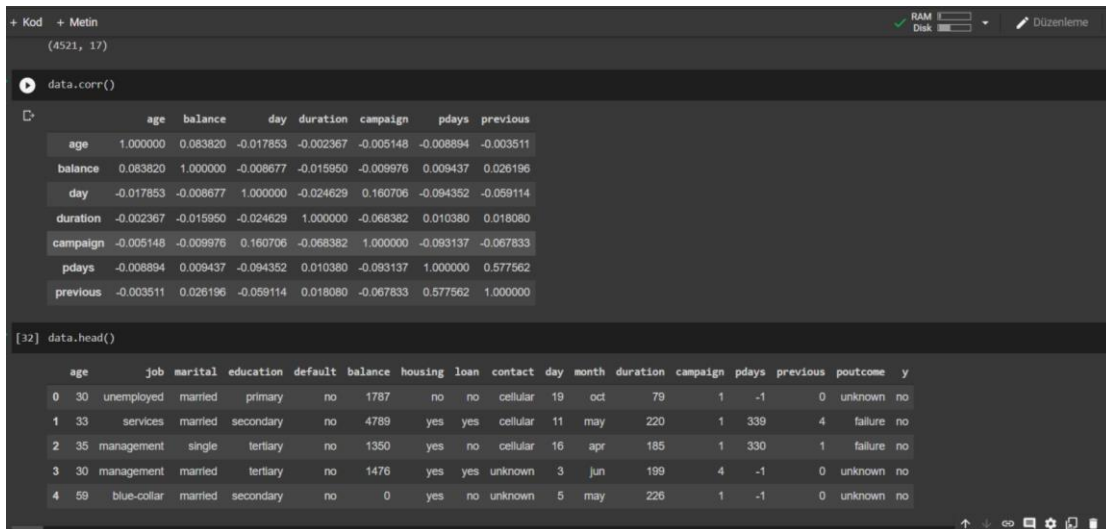
```
False
```

```
[24] data.isna().values.any()
```

```
False
```

```
[26] data.shape
```

```
(4521, 17)
```



The screenshot shows the same Jupyter Notebook interface. The code 'data.corr()' is executed, showing a correlation matrix for the numerical variables: age, balance, day, duration, campaign, pdays, and previous. Below this, the code 'data.head()' is executed, showing the first 5 rows of the dataset, which include both numerical and categorical variables.

```
data.corr()
```

	age	balance	day	duration	campaign	pdays	previous
age	1.000000	0.083820	-0.017853	-0.002367	-0.005148	-0.008894	-0.003511
balance	0.083820	1.000000	-0.008677	-0.015950	-0.009976	0.009437	0.026196
day	-0.017853	-0.008677	1.000000	-0.024629	0.160706	-0.094352	-0.059114
duration	-0.002367	-0.015950	-0.024629	1.000000	-0.068382	0.010380	0.018080
campaign	-0.005148	-0.009976	0.160706	-0.068382	1.000000	-0.093137	-0.067833
pdays	-0.008894	0.009437	-0.094352	0.010380	-0.093137	1.000000	0.577562
previous	-0.003511	0.026196	-0.059114	0.018080	-0.067833	0.577562	1.000000

```
[32] data.head()
```

	age	job	marital	education	default	balance	housing	loan	contact	day	month	duration	campaign	pdays	previous	poutcome	y
0	30	unemployed	married	primary	no	1787	no	no	cellular	19	oct	79	1	-1	0	unknown	no
1	33	services	married	secondary	no	4789	yes	yes	cellular	11	may	220	1	339	4	failure	no
2	35	management	single	tertiary	no	1350	yes	no	cellular	16	apr	185	1	330	1	failure	no
3	30	management	married	tertiary	no	1476	yes	yes	unknown	3	jun	199	4	-1	0	unknown	no
4	59	blue-collar	married	secondary	no	0	yes	no	unknown	5	may	226	1	-1	0	unknown	no

We got both numerical and categorical data.

There is no NA or duplicated values.