

```
In [3]: import pandas as pd
bank=pd.read_csv("bank_marketing_dataset.csv")
bank.head()
```

```
Out[3]:
```

	age	job	marital	education	default	balance	housing	loan	contact	day	month	duration	campaign
0	30	unemployed	married	primary	no	1787	no	no	cellular	19	oct	79.0	1
1	33	services	married	secondary	no	4789	yes	yes	cellular	11	may	220.0	1
2	35	management	single	tertiary	no	1350	yes	no	cellular	16	apr	185.0	1
3	30	management	married	tertiary	no	1476	yes	yes	unknown	3	jun	199.0	1
4	59	blue-collar	married	secondary	no	0	yes	no	unknown	5	may	226.0	1

```
In [5]: bank.tail()
```

```
Out[5]:
```

	age	job	marital	education	default	balance	housing	loan	contact	day	month	duration	campaign
4516	33	services	married	secondary	no	-333	yes	no	cellular	30	jul	329.0	1
4517	57	self-employed	married	tertiary	yes	-3313	yes	yes	unknown	9	may	153.0	1
4518	57	technician	married	secondary	no	295	no	no	cellular	19	aug	151.0	1
4519	28	blue-collar	married	secondary	no	1137	no	no	cellular	6	feb	129.0	1
4520	44	entrepreneur	single	tertiary	no	1136	yes	yes	cellular	3	apr	345.0	1

In [8]: `bank.dropna()`

Out[8]:

	age	job	marital	education	default	balance	housing	loan	contact	day	month	duration
0	30	unemployed	married	primary	no	1787	no	no	cellular	19	oct	79.0
1	33	services	married	secondary	no	4789	yes	yes	cellular	11	may	220.0
2	35	management	single	tertiary	no	1350	yes	no	cellular	16	apr	185.0
3	30	management	married	tertiary	no	1476	yes	yes	unknown	3	jun	199.0
4	59	blue-collar	married	secondary	no	0	yes	no	unknown	5	may	226.0
...
4516	33	services	married	secondary	no	-333	yes	no	cellular	30	jul	329.0
4517	57	self-employed	married	tertiary	yes	-3313	yes	yes	unknown	9	may	153.0
4518	57	technician	married	secondary	no	295	no	no	cellular	19	aug	151.0
4519	28	blue-collar	married	secondary	no	1137	no	no	cellular	6	feb	129.0
4520	44	entrepreneur	single	tertiary	no	1136	yes	yes	cellular	3	apr	345.0

4521 rows × 17 columns



In [12]: `bank.dropna(how="any")`

Out[12]:

	age	job	marital	education	default	balance	housing	loan	contact	day	month	duration
0	30	unemployed	married	primary	no	1787	no	no	cellular	19	oct	79.0
1	33	services	married	secondary	no	4789	yes	yes	cellular	11	may	220.0
2	35	management	single	tertiary	no	1350	yes	no	cellular	16	apr	185.0
3	30	management	married	tertiary	no	1476	yes	yes	unknown	3	jun	199.0
4	59	blue-collar	married	secondary	no	0	yes	no	unknown	5	may	226.0
...
4516	33	services	married	secondary	no	-333	yes	no	cellular	30	jul	329.0
4517	57	self-employed	married	tertiary	yes	-3313	yes	yes	unknown	9	may	153.0
4518	57	technician	married	secondary	no	295	no	no	cellular	19	aug	151.0
4519	28	blue-collar	married	secondary	no	1137	no	no	cellular	6	feb	129.0
4520	44	entrepreneur	single	tertiary	no	1136	yes	yes	cellular	3	apr	345.0

4521 rows × 17 columns



In [14]: `bank.dropna(how="all")`

Out[14]:

	age	job	marital	education	default	balance	housing	loan	contact	day	month	duration
0	30	unemployed	married	primary	no	1787	no	no	cellular	19	oct	79.0
1	33	services	married	secondary	no	4789	yes	yes	cellular	11	may	220.0
2	35	management	single	tertiary	no	1350	yes	no	cellular	16	apr	185.0
3	30	management	married	tertiary	no	1476	yes	yes	unknown	3	jun	199.0
4	59	blue-collar	married	secondary	no	0	yes	no	unknown	5	may	226.0
...
4516	33	services	married	secondary	no	-333	yes	no	cellular	30	jul	329.0
4517	57	self-employed	married	tertiary	yes	-3313	yes	yes	unknown	9	may	153.0
4518	57	technician	married	secondary	no	295	no	no	cellular	19	aug	151.0
4519	28	blue-collar	married	secondary	no	1137	no	no	cellular	6	feb	129.0
4520	44	entrepreneur	single	tertiary	no	1136	yes	yes	cellular	3	apr	345.0

4521 rows × 17 columns



In [18]: `bank.dropna(axis=1)`

Out[18]:

	age	job	marital	education	default	balance	housing	loan	contact	day	month	duration
0	30	unemployed	married	primary	no	1787	no	no	cellular	19	oct	79.0
1	33	services	married	secondary	no	4789	yes	yes	cellular	11	may	220.0
2	35	management	single	tertiary	no	1350	yes	no	cellular	16	apr	185.0
3	30	management	married	tertiary	no	1476	yes	yes	unknown	3	jun	199.0
4	59	blue-collar	married	secondary	no	0	yes	no	unknown	5	may	226.0
...
4516	33	services	married	secondary	no	-333	yes	no	cellular	30	jul	329.0
4517	57	self-employed	married	tertiary	yes	-3313	yes	yes	unknown	9	may	153.0
4518	57	technician	married	secondary	no	295	no	no	cellular	19	aug	151.0
4519	28	blue-collar	married	secondary	no	1137	no	no	cellular	6	feb	129.0
4520	44	entrepreneur	single	tertiary	no	1136	yes	yes	cellular	3	apr	345.0

4521 rows × 17 columns

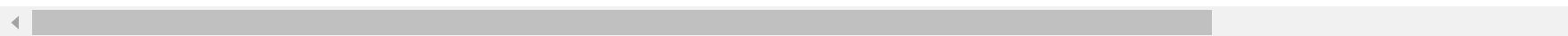


In [21]: `bank.dropna(axis=0)`

Out[21]:

	age	job	marital	education	default	balance	housing	loan	contact	day	month	duration
0	30	unemployed	married	primary	no	1787	no	no	cellular	19	oct	79.0
1	33	services	married	secondary	no	4789	yes	yes	cellular	11	may	220.0
2	35	management	single	tertiary	no	1350	yes	no	cellular	16	apr	185.0
3	30	management	married	tertiary	no	1476	yes	yes	unknown	3	jun	199.0
4	59	blue-collar	married	secondary	no	0	yes	no	unknown	5	may	226.0
...
4516	33	services	married	secondary	no	-333	yes	no	cellular	30	jul	329.0
4517	57	self-employed	married	tertiary	yes	-3313	yes	yes	unknown	9	may	153.0
4518	57	technician	married	secondary	no	295	no	no	cellular	19	aug	151.0
4519	28	blue-collar	married	secondary	no	1137	no	no	cellular	6	feb	129.0
4520	44	entrepreneur	single	tertiary	no	1136	yes	yes	cellular	3	apr	345.0

4521 rows × 17 columns



In [23]: `bank.dropna(subset=["balance"])`

Out[23]:

	age	job	marital	education	default	balance	housing	loan	contact	day	month	duration
0	30	unemployed	married	primary	no	1787	no	no	cellular	19	oct	79.0
1	33	services	married	secondary	no	4789	yes	yes	cellular	11	may	220.0
2	35	management	single	tertiary	no	1350	yes	no	cellular	16	apr	185.0
3	30	management	married	tertiary	no	1476	yes	yes	unknown	3	jun	199.0
4	59	blue-collar	married	secondary	no	0	yes	no	unknown	5	may	226.0
...
4516	33	services	married	secondary	no	-333	yes	no	cellular	30	jul	329.0
4517	57	self-employed	married	tertiary	yes	-3313	yes	yes	unknown	9	may	153.0
4518	57	technician	married	secondary	no	295	no	no	cellular	19	aug	151.0
4519	28	blue-collar	married	secondary	no	1137	no	no	cellular	6	feb	129.0
4520	44	entrepreneur	single	tertiary	no	1136	yes	yes	cellular	3	apr	345.0

4521 rows × 17 columns

In []: