

```
In [1]: import pandas as pd

bank=pd.read_csv("bank_marketing_dataset.csv")
bank.head()
```

Out[1]:

	age	job	marital	education	default	balance	housing	loan	contact	day	month	duration	ca
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	

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```
In [2]: bank["balance"].rank(ascending=False).astype(int)
bank["vasim_ban"] = bank["balance"].rank(ascending=False).astype(int)

bank
```

Out[2]:

	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 × 18 columns



In [3]: `bank.sort_values(by=["vasim_ban", "balance"])`

Out[3]:

	age	job	marital	education	default	balance	housing	loan	contact	day	month	duration
3700	60	retired	married	primary	no	71188	no	no	cellular	6	oct	205.0
2989	42	entrepreneur	married	tertiary	no	42045	no	no	cellular	8	aug	205.0
1483	43	technician	single	tertiary	no	27733	yes	no	unknown	3	jun	164.0
1881	36	management	married	tertiary	no	27359	yes	no	unknown	3	jun	71.0
3830	57	technician	married	tertiary	no	27069	no	yes	unknown	20	jun	174.0
...
3584	46	blue-collar	married	secondary	no	-1400	yes	no	telephone	6	may	309.0
856	49	technician	married	secondary	yes	-1680	yes	yes	unknown	27	jun	92.0
2538	44	management	married	secondary	no	-1746	yes	no	unknown	20	jun	218.0
2398	51	entrepreneur	married	secondary	yes	-2082	no	yes	cellular	28	jul	123.0
4517	57	self-employed	married	tertiary	yes	-3313	yes	yes	unknown	9	may	153.0

4521 rows × 18 columns



In [4]: `bank.sort_values(by=["vasim_ban", "balance"]).tail(50)`

Out[4]:

	age	job	marital	education	default	balance	housing	loan	contact	day	month	duration
1235	32	services	married	secondary	no	-632	yes	yes	cellular	20	apr	18.0
715	30	admin.	single	secondary	no	-635	no	no	cellular	25	jul	250.0
3548	39	admin.	married	secondary	no	-650	no	no	cellular	15	may	123.0
2319	44	management	married	secondary	no	-665	no	no	cellular	30	jul	342.0
3688	38	unemployed	married	secondary	no	-673	yes	no	unknown	26	may	364.0
3555	44	blue-collar	married	secondary	no	-674	yes	no	unknown	5	may	257.0
1868	42	management	married	primary	no	-679	yes	yes	cellular	6	may	159.0
3493	36	management	single	tertiary	no	-679	yes	yes	cellular	7	may	172.0
295	49	entrepreneur	divorced	unknown	yes	-701	yes	no	cellular	30	jul	988.0
2564	50	technician	divorced	secondary	no	-701	yes	yes	cellular	24	jul	148.0
3155	55	technician	single	tertiary	no	-703	yes	no	cellular	8	may	123.0
2974	44	management	divorced	tertiary	no	-710	yes	no	cellular	10	jul	183.0
132	43	blue-collar	married	unknown	yes	-715	yes	no	unknown	30	may	67.0
1884	39	technician	married	secondary	no	-735	yes	no	cellular	30	jan	144.0
4219	26	housemaid	married	secondary	no	-759	yes	no	cellular	11	jul	191.0
3565	38	services	married	secondary	no	-762	yes	yes	unknown	30	may	408.0
1937	30	unemployed	single	secondary	yes	-770	yes	no	unknown	28	may	87.0
3819	46	technician	divorced	secondary	no	-824	yes	no	cellular	7	aug	429.0
524	45	services	married	secondary	no	-839	yes	no	unknown	28	may	68.0
2748	40	blue-collar	married	secondary	no	-839	yes	yes	cellular	16	jul	1018.0
48	32	entrepreneur	single	primary	yes	-849	yes	yes	cellular	4	feb	204.0