```python
import pandas as pd
import numpy as np
```

```python
df = pd.read_csv("wine.csv")
df
```

	Wine	Alcohol	Malic.acid	Ash	Acl	Mg	Phenols	Flavanoids	Nonflavanoid.phenols	Proanth	Color.int	Hue	OD	Proline
0	1	14.23	1.71	2.43	15.6	127	2.80	3.06	0.28	2.29	5.64	1.04	3.92	1065
1	1	13.20	1.78	2.14	11.2	100	2.65	2.76	0.26	1.28	4.38	1.05	3.40	1050
2	1	13.16	2.36	2.67	18.6	101	2.80	3.24	0.30	2.81	5.68	1.03	3.17	1185
3	1	14.37	1.95	2.50	16.8	113	3.85	3.49	0.24	2.18	7.80	0.86	3.45	1480
4	1	13.24	2.59	2.87	21.0	118	2.80	2.69	0.39	1.82	4.32	1.04	2.93	735
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
173	3	13.71	5.65	2.45	20.5	95	1.68	0.61	0.52	1.06	7.70	0.64	1.74	740
174	3	13.40	3.91	2.48	23.0	102	1.80	0.75	0.43	1.41	7.30	0.70	1.56	750
175	3	13.27	4.28	2.26	20.0	120	1.59	0.69	0.43	1.35	10.20	0.59	1.56	835
176	3	13.17	2.59	2.37	20.0	120	1.65	0.68	0.53	1.46	9.30	0.60	1.62	840
177	3	14.13	4.10	2.74	24.5	96	2.05	0.76	0.56	1.35	9.20	0.61	1.60	560

178 rows × 14 columns

```python
def standardize_if_not(attr,df):
    sdev = df[attr].std()
    mean = df[attr].mean()
    if sdev == 1 and mean == 0:
        print(f"Attribute : {attr} already standardized")
        return

    print(f"Standardizing attribute {attr}")
    df[attr] = (df[attr] - mean) / sdev
```

```python
for col in df.columns:
    standardize_if_not(col, df)
df
```

```
Standardizing attribute Wine
Standardizing attribute Alcohol
Standardizing attribute Malic.acid
Standardizing attribute Ash
Standardizing attribute Acl
Standardizing attribute Mg
Standardizing attribute Phenols
Standardizing attribute Flavanoids
Standardizing attribute Nonflavanoid.phenols
Standardizing attribute Proanth
Standardizing attribute Color.int
Standardizing attribute Hue
Standardizing attribute OD
Standardizing attribute Proline
```

	Wine	Alcohol	Malic.acid	Ash	Acl	Mg	Phenols	Flavanoids	Nonflavanoid.phenols	Proanth	Color.int	Hue	OD	Proline
0	-1.210529	1.514341	-0.560668	0.231400	-1.166303	1.908522	0.806722	1.031908	-0.657708	1.221438	0.251009	0.361158	1.842721	1.010159
1	-1.210529	0.245597	-0.498009	-0.825667	-2.483841	0.018094	0.567048	0.731565	-0.818411	-0.543189	-0.292496	0.404908	1.110317	0.962526
2	-1.210529	0.196325	0.021172	1.106214	-0.267982	0.088110	0.806722	1.212114	-0.497005	2.129959	0.268263	0.317409	0.786369	1.391224
3	-1.210529	1.686791	-0.345835	0.486554	-0.806975	0.928300	2.484437	1.462399	-0.979113	1.029251	1.182732	-0.426341	1.180741	2.328007
4	-1.210529	0.294868	0.227053	1.835226	0.450674	1.278379	0.806722	0.661485	0.226158	0.400275	-0.318377	0.361158	0.448336	-0.037767
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
173	1.370000	0.873810	2.966176	0.304301	0.300954	-0.331985	-0.982841	-1.420891	1.270726	-0.927563	1.139596	-1.388840	-1.227742	-0.021890
174	1.370000	0.491955	1.408636	0.413653	1.049555	0.158126	-0.791103	-1.280731	0.547563	-0.316058	0.967055	-1.126341	-1.481267	0.009866
175	1.370000	0.331822	1.739837	-0.388260	0.151234	1.418411	-1.126646	-1.340800	0.547563	-0.420888	2.217979	-1.607590	-1.481267	0.279786
176	1.370000	0.208643	0.227053	0.012696	0.151234	1.418411	-1.030776	-1.350811	1.351077	-0.228701	1.829761	-1.563840	-1.396759	0.295664
177	1.370000	1.391162	1.578712	1.361368	1.498716	-0.261969	-0.391646	-1.270720	1.592131	-0.420888	1.786626	-1.520090	-1.424928	-0.593486

178 rows × 14 columns