

Home

MAIN FLOW TASK 2

localhost:8888/notebooks/MAIN%20FLOW%20TASK%202.ipynb

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JupyterLab Python 3 (ipykernel)

[1]: import pandas as pd

[3]: data = pd.read_csv('C:\\Users\\aadil\\Downloads\\01.Data Cleaning and Preprocessing.csv')

[5]: type(data)

[5]: pandas.core.frame.DataFrame

[7]: data.info

[7]: <bound method DataFrame.info of
0 31-00:00 23.10 16.520 121.717 1177.607 169.805
1 31-01:00 27.60 16.810 79.022 1328.360 341.327
2 31-02:00 23.19 16.709 79.562 1329.407 239.161
3 31-03:00 23.60 16.478 81.011 1334.877 213.527
4 31-04:00 22.90 15.618 93.244 1334.168 243.131
.. ..
319 10-16:00 23.75 12.667 93.450 1178.252 276.955
320 9-19:00 19.80 12.558 94.352 1184.119 297.071
321 9-20:00 23.01 12.550 90.842 1188.517 289.826
322 9-21:00 24.32 13.083 88.910 1192.879 318.006
323 9-22:00 25.75 13.417 85.451 1186.342 248.312

T-upperExt-2 T-lowerExt-2 UCZAA WhiteFlow-4 ... SteamFlow-4 \
0 358.282 329.545 1.443 599.253 ... 67.122
1 351.050 329.067 1.549 537.201 ... 60.012
2 350.022 329.260 1.600 549.611 ... 61.304
3 350.938 331.142 1.604 623.362 ... 68.496
4 351.640 332.709 NaN 638.672 ... 70.022
.. ..
319 347.286 310.970 1.523 513.956 ... 61.141
320 399.135 319.576 1.451 570.058 ... 67.667
321 373.633 314.591 1.457 549.306 ... 66.446
322 364.081 308.559 1.523 504.852 ... 61.054

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0257.32554.612252.077NaN

1241.18246.603251.40629.11

2237.27251.795251.335NaN

3239.47854.846250.31229.02

4215.37254.186249.91629.01

... ..

319381.64345.264252.94730.86

32025.49450.528252.09230.70

3210.63845.549252.438NaN

3220.00043.725253.17631.13

3231.27643.840253.216NaN

[324 rows x 23 columns]>

[9]: data.describe()

[9]:

	Y-Kappa	ChipRate	BF-CMratio	BlowFlow	ChipLevel4	T-upperExt-2	T-lowerExt-2	UCZAA	WhiteFlow-4	AAWhiteSt-4	...	SteamFlow-4	Lower-HeatT-3	UpperHeatT
count	324.000000	319.000000	307.000000	308.000000	323.000000	322.000000	322.000000	299.000000	323.000000	173.000000	...	323.000000	322.000000	322.0000
mean	20.635370	14.347937	87.464456	1237.837614	258.164483	356.904295	324.020180	1.492010	591.732260	6.140410	...	66.668285	325.567820	300.5256
std	3.070036	1.499095	7.995012	100.593735	87.987452	9.209290	7.621402	0.105923	67.016351	0.081609	...	5.708587	4.609862	4.5684
min	12.170000	9.983000	68.645000	0.000000	0.000000	339.168000	284.633000	1.182000	405.111000	5.890000	...	48.568000	318.051000	293.3120
25%	18.382500	13.358000	81.823000	1193.215250	213.527000	350.241250	321.420000	1.431500	540.989500	6.089000	...	62.518000	321.385500	296.5132
50%	20.845000	14.308000	86.739000	1273.138500	271.792000	356.843000	325.669000	1.498000	592.895000	6.135000	...	67.429000	324.741000	299.1260
75%	23.032500	15.517000	92.372000	1289.196000	321.680000	362.242250	329.175000	1.560500	639.480500	6.199000	...	71.522000	329.845250	304.2447
max	27.600000	16.958000	121.717000	1351.240000	419.014000	399.135000	337.012000	1.747000	731.394000	6.340000	...	76.147000	333.854000	311.1460

8 rows x 22 columns

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75%

23.032500

15.517000

92.372000

1289.196000

321.680000

362.242250

329.175000

1.560500

639.480500

6.199000

...

71.522000

329.845250

304.2447

max

27.600000

16.958000

121.717000

1351.240000

419.014000

399.135000

337.012000

1.747000

731.394000

6.340000

...

76.147000

333.854000

311.1460

8 rows × 22 columns

[13]: data = data.drop_duplicates()
data

[13]:

	Observation	Y-Kappa	ChipRate	BF-CMratio	BlowFlow	ChipLevel4	T-upperExt-2	T-lowerExt-2	UCZAA	WhiteFlow-4	...	SteamFlow-4	Lower-HeatT-3	Upper-HeatT-3	ChipMass-4	WeakLiq
0	31-00:00	23.10	16.520	121.717	1177.607	169.805	358.282	329.545	1.443	599.253	...	67.122	329.432	303.099	175.964	112:
1	31-01:00	27.60	16.810	79.022	1328.360	341.327	351.050	329.067	1.549	537.201	...	60.012	330.823	304.879	163.202	66:
2	31-02:00	23.19	16.709	79.562	1329.407	239.161	350.022	329.260	1.600	549.611	...	61.304	329.140	303.383	164.013	67:
3	31-03:00	23.60	16.478	81.011	1334.877	213.527	350.938	331.142	1.604	623.362	...	68.496	328.875	302.254	181.487	76:
4	31-04:00	22.90	15.618	93.244	1334.168	243.131	351.640	332.709	NaN	638.672	...	70.022	328.352	300.954	183.929	88:
...
298	12-09:00	20.90	15.167	84.640	1283.706	339.440	354.803	311.041	1.635	532.419	...	65.561	332.924	307.626	145.299	83:
299	12-10:00	24.98	NaN	85.034	1278.345	368.564	357.723	321.387	NaN	520.365	...	65.729	332.523	307.169	151.544	90:
300	12-11:00	21.00	NaN	88.013	1307.722	278.842	357.438	323.757	NaN	553.070	...	65.795	331.263	306.400	157.954	90:
301	12-12:00	21.40	NaN	85.490	1255.986	273.484	361.365	322.689	NaN	590.199	...	71.456	333.032	308.732	174.069	98:
307	31-05:00	20.89	14.308	94.172	1327.832	251.120	351.263	332.485	1.522	631.514	...	71.286	328.699	300.706	180.229	90:

301 rows × 23 columns

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JupyterLab Python 3 (ipykernel)

301 rows x 23 columns

```
[15]: data.isnull()
```

```
[15]:
```

	Observation	Y-Kappa	ChipRate	BF-CMratio	BlowFlow	ChipLevel4	upperExt-2	T-lowerExt-2	UCZAA	WhiteFlow-4	...	SteamFlow-4	Lower-HeatT-3	Upper-HeatT-3	ChipMass-4	WeakLiqu
0	False	False	False	False	False	False	False	False	False	False	...	False	False	False	False	F
1	False	False	False	False	False	False	False	False	False	False	...	False	False	False	False	F
2	False	False	False	False	False	False	False	False	False	False	...	False	False	False	False	F
3	False	False	False	False	False	False	False	False	False	False	...	False	False	False	False	F
4	False	False	False	False	False	False	False	False	True	False	...	False	False	False	False	F
...
298	False	False	False	False	False	False	False	False	False	False	...	False	False	False	False	F
299	False	False	True	False	False	False	False	False	True	False	...	False	False	False	False	F
300	False	False	True	False	False	False	False	False	True	False	...	False	False	False	False	F
301	False	False	True	False	False	False	False	False	True	False	...	False	False	False	False	F
307	False	False	False	False	False	False	False	False	False	False	...	False	False	False	False	F

301 rows x 23 columns

```
[17]: data.isnull().sum()
```

```
[17]: Observation      0
```

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Code

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JupyterLab Python 3 (ipykernel)

[17]: data.isnull().sum()

[17]:

Observation	0
Y-Kappa	0
ChipRate	4
BF-CMratio	14
BlowFlow	13
ChipLevel4	1
T-upperExt-2	1
T-lowerExt-2	1
UCZAA	24
WhiteFlow-4	1
AAWhiteSt-4	141
AA-Wood-4	1
ChipMoisture-4	1
SteamFlow-4	1
Lower-HeatT-3	1
Upper-HeatT-3	1
ChipMass-4	1
WeakLiquorF	1
BlackFlow-2	1
WeakWashF	1
SteamHeatF-3	1
T-Top-Chips-4	1
SulphidityL-4	141
dtype:	int64

[19]: data.notnull()

[19]:

Observation	Y-Kappa	ChipRate	BF-CMratio	BlowFlow	ChipLevel4	T-upperExt-2	T-lowerExt-2	UCZAA	WhiteFlow-4	...	SteamFlow-4	Lower-HeatT-3	Upper-HeatT-3	ChipMass-4	WeakLiquorF
0	True	True	True	True	True	True	True	True	True	...	True	True	True	True	True

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Python 3 (ipykernel)

SteamHeatF-31

T-Top-Chips-41

SulphidityL-4141

dtype: int64

[19]:

data.notnull()

[19]:

	Observation	Y-Kappa	ChipRate	BF-CMratio	BlowFlow	ChipLevel4	upperExt-2	T-lowerExt-2	UCZAA	WhiteFlow-4	...	SteamFlow-4	Lower-HeatT-3	Upper-HeatT-3	ChipMass-4	WeakLiqu
0		True	True	True	True	True	True	True	True	True	...	True	True	True	True	
1		True	True	True	True	True	True	True	True	True	...	True	True	True	True	
2		True	True	True	True	True	True	True	True	True	...	True	True	True	True	
3		True	True	True	True	True	True	True	True	True	...	True	True	True	True	
4		True	True	True	True	True	True	True	False	True	...	True	True	True	True	
...		
298		True	True	True	True	True	True	True	True	True	...	True	True	True	True	
299		True	True	False	True	True	True	True	False	True	...	True	True	True	True	
300		True	True	False	True	True	True	True	False	True	...	True	True	True	True	
301		True	True	False	True	True	True	True	False	True	...	True	True	True	True	
307		True	True	True	True	True	True	True	True	True	...	True	True	True	True	

301 rows x 23 columns

[21]:

data.isnull().sum().sum()

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```
[21]: data.isnull().sum().sum()
[21]: 352
```

```
[23]: data2 = data.fillna(value=0)
      data2
```

	Observation	Y-Kappa	ChipRate	BF-CMratio	BlowFlow	ChipLevel4	upperExt-2	T-lowerExt-2	UCZAA	WhiteFlow-4	SteamFlow-4	Lower-HeatT-3	Upper-HeatT-3	ChipMass-4	WeakLiq
0	31-00:00	23.10	16.520	121.717	1177.607	169.805	358.282	329.545	1.443	599.253	67.122	329.432	303.099	175.964	112.
1	31-01:00	27.60	16.810	79.022	1328.360	341.327	351.050	329.067	1.549	537.201	60.012	330.823	304.879	163.202	66.
2	31-02:00	23.19	16.709	79.562	1329.407	239.161	350.022	329.260	1.600	549.611	61.304	329.140	303.383	164.013	67.
3	31-03:00	23.60	16.478	81.011	1334.877	213.527	350.938	331.142	1.604	623.362	68.496	328.875	302.254	181.487	76.
4	31-04:00	22.90	15.618	93.244	1334.168	243.131	351.640	332.709	0.000	638.672	70.022	328.352	300.954	183.929	88.
...
298	12-09:00	20.90	15.167	84.640	1283.706	339.440	354.803	311.041	1.635	532.419	65.561	332.924	307.626	145.299	83.
299	12-10:00	24.98	0.000	85.034	1278.345	368.564	357.723	321.387	0.000	520.365	65.729	332.523	307.169	151.544	90.
300	12-11:00	21.00	0.000	88.013	1307.722	278.842	357.438	323.757	0.000	553.070	65.795	331.263	306.400	157.954	90.
301	12-12:00	21.40	0.000	85.490	1255.986	273.484	361.365	322.689	0.000	590.199	71.456	333.032	308.732	174.069	98.
307	31-05:00	20.89	14.308	94.172	1327.832	251.120	351.263	332.485	1.522	631.514	71.286	328.699	300.706	180.229	90.

301 rows × 23 columns

```
[25]: data2.isnull().sum().sum()
```

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Code

JupyterLabPython 3 (ipykernel)

[25]: data2.isnull().sum().sum()

[25]: 0

[27]: data

[27]:

	Observation	Y-Kappa	ChipRate	BF-CMratio	BlowFlow	ChipLevel4	T-upperExt-2	T-lowerExt-2	UCZAA	WhiteFlow-4	...	SteamFlow-4	Lower-HeatT-3	Upper-HeatT-3	ChipMass-4	WeakLiq
0	31-00:00	23.10	16.520	121.717	1177.607	169.805	358.282	329.545	1.443	599.253	...	67.122	329.432	303.099	175.964	112.7
1	31-01:00	27.60	16.810	79.022	1328.360	341.327	351.050	329.067	1.549	537.201	...	60.012	330.823	304.879	163.202	66.1
2	31-02:00	23.19	16.709	79.562	1329.407	239.161	350.022	329.260	1.600	549.611	...	61.304	329.140	303.383	164.013	67.1
3	31-03:00	23.60	16.478	81.011	1334.877	213.527	350.938	331.142	1.604	623.362	...	68.496	328.875	302.254	181.487	76.1
4	31-04:00	22.90	15.618	93.244	1334.168	243.131	351.640	332.709	NaN	638.672	...	70.022	328.352	300.954	183.929	88.1
...
298	12-09:00	20.90	15.167	84.640	1283.706	339.440	354.803	311.041	1.635	532.419	...	65.561	332.924	307.626	145.299	83.1
299	12-10:00	24.98	NaN	85.034	1278.345	368.564	357.723	321.387	NaN	520.365	...	65.729	332.523	307.169	151.544	90.1
300	12-11:00	21.00	NaN	88.013	1307.722	278.842	357.438	323.757	NaN	553.070	...	65.795	331.263	306.400	157.954	90.1
301	12-12:00	21.40	NaN	85.490	1255.986	273.484	361.365	322.689	NaN	590.199	...	71.456	333.032	308.732	174.069	98.1
307	31-05:00	20.89	14.308	94.172	1327.832	251.120	351.263	332.485	1.522	631.514	...	71.286	328.699	300.706	180.229	90.1

301 rows x 23 columns

[29]: data2 = data.fillna(value=0)

301 rows × 23 columns

```
[29]: data2 = data.fillna(value=0)
data2
```

[29]:

	Observation	Y-Kappa	ChipRate	BF-CMratio	BlowFlow	ChipLevel4	upperExt-2	T-lowerExt-2	UCZAA	WhiteFlow-4	...	SteamFlow-4	Lower-HeatT-3	Upper-HeatT-3	ChipMass-4	WeakLiq
0	31-00:00	23.10	16.520	121.717	1177.607	169.805	358.282	329.545	1.443	599.253	...	67.122	329.432	303.099	175.964	112.7
1	31-01:00	27.60	16.810	79.022	1328.360	341.327	351.050	329.067	1.549	537.201	...	60.012	330.823	304.879	163.202	66.5
2	31-02:00	23.19	16.709	79.562	1329.407	239.161	350.022	329.260	1.600	549.611	...	61.304	329.140	303.383	164.013	67.1
3	31-03:00	23.60	16.478	81.011	1334.877	213.527	350.938	331.142	1.604	623.362	...	68.496	328.875	302.254	181.487	76.1
4	31-04:00	22.90	15.618	93.244	1334.168	243.131	351.640	332.709	0.000	638.672	...	70.022	328.352	300.954	183.929	88.1
...
298	12-09:00	20.90	15.167	84.640	1283.706	339.440	354.803	311.041	1.635	532.419	...	65.561	332.924	307.626	145.299	83.1
299	12-10:00	24.98	0.000	85.034	1278.345	368.564	357.723	321.387	0.000	520.365	...	65.729	332.523	307.169	151.544	90.1
300	12-11:00	21.00	0.000	88.013	1307.722	278.842	357.438	323.757	0.000	553.070	...	65.795	331.263	306.400	157.954	90.1
301	12-12:00	21.40	0.000	85.490	1255.986	273.484	361.365	322.689	0.000	590.199	...	71.456	333.032	308.732	174.069	98.1
307	31-05:00	20.89	14.308	94.172	1327.832	251.120	351.263	332.485	1.522	631.514	...	71.286	328.699	300.706	180.229	90.1

301 rows × 23 columns

```
[31]: #forward filling
data3 = data.fillna(method='pad')
```

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JupyterLab Python 3 (ipykernel)

[31]:

#forward filling
data3 = data.fillna(method='pad')
data3

C:\Users\aadil\AppData\Local\Temp\ipykernel_1548\1103087296.py:2: FutureWarning: DataFrame.fillna with 'method' is deprecated and will raise in a future version. Use obj.ffill() or obj.bfill() instead.
data3 = data.fillna(method='pad')

[31]:

	Observation	Y-Kappa	ChipRate	BF-CMratio	BlowFlow	ChipLevel4	T-upperExt-2	T-lowerExt-2	UCZAA	WhiteFlow-4	...	SteamFlow-4	Lower-HeatT-3	Upper-HeatT-3	ChipMass-4	WeakLiq
0	31-00:00	23.10	16.520	121.717	1177.607	169.805	358.282	329.545	1.443	599.253	...	67.122	329.432	303.099	175.964	1127
1	31-01:00	27.60	16.810	79.022	1328.360	341.327	351.050	329.067	1.549	537.201	...	60.012	330.823	304.879	163.202	665
2	31-02:00	23.19	16.709	79.562	1329.407	239.161	350.022	329.260	1.600	549.611	...	61.304	329.140	303.383	164.013	675
3	31-03:00	23.60	16.478	81.011	1334.877	213.527	350.938	331.142	1.604	623.362	...	68.496	328.875	302.254	181.487	765
4	31-04:00	22.90	15.618	93.244	1334.168	243.131	351.640	332.709	1.604	638.672	...	70.022	328.352	300.954	183.929	885
...
298	12-09:00	20.90	15.167	84.640	1283.706	339.440	354.803	311.041	1.635	532.419	...	65.561	332.924	307.626	145.299	835
299	12-10:00	24.98	15.167	85.034	1278.345	368.564	357.723	321.387	1.635	520.365	...	65.729	332.523	307.169	151.544	905
300	12-11:00	21.00	15.167	88.013	1307.722	278.842	357.438	323.757	1.635	553.070	...	65.795	331.263	306.400	157.954	905
301	12-12:00	21.40	15.167	85.490	1255.986	273.484	361.365	322.689	1.635	590.199	...	71.456	333.032	308.732	174.069	985
307	31-05:00	20.89	14.308	94.172	1327.832	251.120	351.263	332.485	1.522	631.514	...	71.286	328.699	300.706	180.229	905

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JupyterLab Python 3 (ipykernel)

[33]:

#backward filling
data4=data.fillna(method='bfill')
data4

C:\Users\aadil\AppData\Local\Temp\ipykernel_1548\2431970698.py:2: FutureWarning: DataFrame.fillna with 'method' is deprecated and will raise in a future version. Use obj.ffill() or obj.bfill() instead.
data4=data.fillna(method='bfill')

[33]:

	Observation	Y-Kappa	ChipRate	BF-CMratio	BlowFlow	ChipLevel4	T-upperExt-2	T-lowerExt-2	UCZAA	WhiteFlow-4	...	SteamFlow-4	Lower-HeatT-3	Upper-HeatT-3	ChipMass-4	WeakLiq
0	31-00:00	23.10	16.520	121.717	1177.607	169.805	358.282	329.545	1.443	599.253	...	67.122	329.432	303.099	175.964	112
1	31-01:00	27.60	16.810	79.022	1328.360	341.327	351.050	329.067	1.549	537.201	...	60.012	330.823	304.879	163.202	66
2	31-02:00	23.19	16.709	79.562	1329.407	239.161	350.022	329.260	1.600	549.611	...	61.304	329.140	303.383	164.013	67
3	31-03:00	23.60	16.478	81.011	1334.877	213.527	350.938	331.142	1.604	623.362	...	68.496	328.875	302.254	181.487	76
4	31-04:00	22.90	15.618	93.244	1334.168	243.131	351.640	332.709	1.436	638.672	...	70.022	328.352	300.954	183.929	88
...
298	12-09:00	20.90	15.167	84.640	1283.706	339.440	354.803	311.041	1.635	532.419	...	65.561	332.924	307.626	145.299	83
299	12-10:00	24.98	14.308	85.034	1278.345	368.564	357.723	321.387	1.522	520.365	...	65.729	332.523	307.169	151.544	90
300	12-11:00	21.00	14.308	88.013	1307.722	278.842	357.438	323.757	1.522	553.070	...	65.795	331.263	306.400	157.954	90
301	12-12:00	21.40	14.308	85.490	1255.986	273.484	361.365	322.689	1.522	590.199	...	71.456	333.032	308.732	174.069	98
307	31-05:00	20.89	14.308	94.172	1327.832	251.120	351.263	332.485	1.522	631.514	...	71.286	328.699	300.706	180.229	90

301 rows x 23 columns

[35]:

import numpy as np
from scipy import stats

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```
[35]: import numpy as np
      from scipy import stats

[37]: #detect the outliers using IQR
      data2.columns

[37]: Index(['Observation', 'Y-Kappa', 'ChipRate', 'BF-CMratio', 'BlowFlow',
          'ChipLevel4 ', 'T-upperExt-2 ', 'T-lowerExt-2 ', 'UCZAA',
          'WhiteFlow-4 ', 'AAWhiteSt-4 ', 'AA-Wood-4 ', 'ChipMoisture-4 ',
          'SteamFlow-4 ', 'Lower-HeatT-3', 'Upper-HeatT-3 ', 'ChipMass-4 ',
          'WeakLiquorF ', 'BlackFlow-2 ', 'WeakWashF ', 'SteamHeatF-3 ',
          'T-Top-Chips-4 ', 'SulphidityL-4 '],
          dtype='object')

[39]: data2.drop(['Observation'], axis=1, inplace=True)
      data2.columns

[39]: Index(['Y-Kappa', 'ChipRate', 'BF-CMratio', 'BlowFlow', 'ChipLevel4 ',
          'T-upperExt-2 ', 'T-lowerExt-2 ', 'UCZAA', 'WhiteFlow-4 ',
          'AAWhiteSt-4 ', 'AA-Wood-4 ', 'ChipMoisture-4 ', 'SteamFlow-4 ',
          'Lower-HeatT-3', 'Upper-HeatT-3 ', 'ChipMass-4 ', 'WeakLiquorF ',
          'BlackFlow-2 ', 'WeakWashF ', 'SteamHeatF-3 ', 'T-Top-Chips-4 ',
          'SulphidityL-4 '],
          dtype='object')

[41]: Q1= data2.quantile(0.25)
      Q3= data2.quantile(0.75)
      IQR=Q3-Q1
      print(IQR)
```

Y-Kappa	4.550
ChipRate	2.233
BF-CMratio	10.912
BlowFlow	96.766
ChipLevel4	105.868
T-upperExt-2	11.994
T-lowerExt-2	7.609
UCZAA	0.152

[illegible]

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29620.5013.35897.6621304.597377.678347.672313.1471.546496.4606.340...60.119332.615308.575141.076997

29720.4014.23389.7901278.006379.458354.290315.5581.515491.3740.000...60.424331.980308.078140.301975

29820.9015.16784.6401283.706339.440354.803311.0411.635532.4196.340...65.561332.924307.626145.299832

30720.8914.30894.1721327.832251.120351.263332.4851.522631.5140.000...71.286328.699300.706180.229903

226 rows × 22 columns

[45]: data2.describe()

[45]:

	Y-Kappa	ChipRate	BF-CMratio	BlowFlow	ChipLevel4	T-upperExt-2	T-lowerExt-2	UCZAA	WhiteFlow-4	AAWhiteSt-4	...	SteamFlow-4	Lower-HeatT-3	UpperHeatT
count	226.000000	226.000000	226.000000	226.000000	226.000000	226.000000	226.000000	226.000000	226.000000	226.000000	...	226.000000	226.000000	226.0000
mean	20.690487	14.673491	85.882181	1255.288916	264.664912	356.861681	325.341124	1.487146	603.242482	3.098164	...	67.545478	324.752212	299.6554
std	2.982916	1.297369	7.033155	47.896055	74.345135	7.466897	5.557537	0.108054	61.052197	3.078138	...	4.914301	4.526481	4.3837
min	12.480000	10.833000	68.645000	1084.083000	61.783000	340.222000	310.421000	1.182000	468.841000	0.000000	...	52.962000	318.051000	293.3120
25%	18.457500	13.850000	80.984000	1221.926000	220.356000	350.704250	322.355500	1.429000	549.611000	0.000000	...	63.954000	321.179500	296.3385
50%	20.775000	14.729000	84.967000	1280.291500	270.965000	357.560500	326.508500	1.492000	602.508000	5.904500	...	68.147000	322.380000	297.6365
75%	23.010000	15.708000	91.178750	1289.254000	322.492000	361.555000	329.264500	1.556000	653.358500	6.140000	...	71.760750	329.575000	303.7770
max	27.600000	16.958000	108.104000	1351.240000	419.014000	375.047000	337.012000	1.712000	731.394000	6.340000	...	75.974000	333.223000	309.8540

8 rows × 22 columns

[]: