## example

March 29, 2023

#### 1 Basic on dataframe

```
[110]: import pandas as pd
   mydataset = {
        'cars': ["BMW", "Volvo", "Ford"],
        'passings': [3, 7, 2]
   }
   print(pd.DataFrame(mydataset))

data = {
        "calories": [420, 380, 390],
        "duration": [50, 40, 45]
   }
   print(pd.DataFrame(data, index=["Feb", "Mar", "Apr"]))
```

```
      cars
      passings

      0
      BMW
      3

      1
      Volvo
      7

      2
      Ford
      2

      calories
      duration

      Feb
      420
      50

      Mar
      380
      40

      Apr
      390
      45
```

## 2 check the pandas.Series()

```
cbound method Series.to_string of x
y 4
z 6
dtype: int64>
```

## 3 Operations on Example-data.csv

MAX_ROWS =	60			
Durati	on :	Pulse	Maxpulse	Calories
0	60	110	130	409.1
1	60	117	145	479.0
2	60	103	135	340.0
3	45	109	175	282.4
4	45	117	148	406.0
		••	•••	•••
164	60	105	140	290.8
165	60	110	145	300.0
166	60	115	145	310.2
167	75	120	150	320.4
168	75	125	150	330.4

[169 rows x 4 columns]

### 3.1 lets print complete dataset

```
[113]: # lets print all the first 30 dataset in string format
print(df.head(30).to_string())
# print out the dataset information
print(df.info())
```

	Duration	Pulse	Maxpulse	Calories
0	60	110	130	409.1
1	60	117	145	479.0
2	60	103	135	340.0
3	45	109	175	282.4
4	45	117	148	406.0
5	60	102	127	300.0
6	60	110	136	374.0

```
7
           45
                  104
                              134
                                       253.3
8
           30
                  109
                              133
                                       195.1
9
           60
                   98
                              124
                                       269.0
10
           60
                  103
                              147
                                       329.3
                  100
11
           60
                              120
                                       250.7
12
           60
                  106
                              128
                                       345.3
13
           60
                  104
                              132
                                       379.3
14
           60
                   98
                              123
                                       275.0
15
           60
                   98
                              120
                                       215.2
                              120
                                       300.0
16
           60
                  100
17
           45
                   90
                              112
                                          NaN
           60
                  103
                              123
                                       323.0
18
           45
                   97
                                       243.0
19
                              125
20
                  108
                                       364.2
           60
                              131
                                       282.0
21
           45
                  100
                              119
22
           60
                  130
                              101
                                       300.0
23
           45
                  105
                              132
                                       246.0
                                       334.5
24
           60
                  102
                              126
25
           60
                  100
                              120
                                       250.0
26
           60
                   92
                              118
                                       241.0
27
           60
                  103
                              132
                                          NaN
28
           60
                  100
                              132
                                       280.0
29
           60
                  102
                              129
                                       380.3
```

<class 'pandas.core.frame.DataFrame'>

RangeIndex: 169 entries, 0 to 168

Data columns (total 4 columns):

	· · · · · · · · · · · · · · · · · · ·		•
#	Column	Non-Null Count	Dtype
0	Duration	169 non-null	int64
1	Pulse	169 non-null	int64
2	Maxpulse	169 non-null	int64
3	Calories	164 non-null	float64

dtypes: float64(1), int64(3)

memory usage: 5.4 KB

None

Inference from dateframe.info() is calories has 169 - 164 no of NULL entries

#### 3.2 Lets remove the NULL entries

```
[114]: print(df.head(30).dropna().to_string()) # removed the NULL entries
# the above command didn't change the original dataframe

# to change the original dataframe
df.dropna(inplace=True)
print(df.head(30).to_string())
```

```
Duration Pulse Maxpulse Calories
0 60 110 130 409.1
```

1	60	117	145	479.0
2	60	103	135	340.0
3	45	109	175	282.4
4	45	117	148	406.0
5	60	102	127	300.0
6	60	110	136	374.0
7	45	104	134	253.3
8	30	109	133	195.1
9	60	98	124	269.0
10	60	103	147	329.3
11	60	100	120	250.7
12	60	106	128	345.3
13	60	104	132	379.3
14	60	98	123	275.0
15	60	98	120	215.2
16	60	100	120	300.0
18	60	103	123	323.0
19	45	97	125	243.0
20	60	108	131	364.2
21	45	100	119	282.0
22	60	130	101	300.0
23	45	105	132	246.0
24	60	103	126	334.5
25	60	102	120	250.0
	60			
26		92	118	241.0
28	60	100 102	132	280.0 380.3
29	60		129	380 3
0	Duration	Pulse	Maxpulse	Calories
0	Duration 60	Pulse 110	Maxpulse 130	Calories 409.1
1	Duration 60 60	Pulse 110 117	Maxpulse 130 145	Calories 409.1 479.0
1 2	Duration 60 60 60	Pulse 110 117 103	Maxpulse 130 145 135	Calories 409.1 479.0 340.0
1 2 3	Duration 60 60 60 45	Pulse 110 117 103 109	Maxpulse 130 145 135 175	Calories 409.1 479.0 340.0 282.4
1 2 3 4	Duration 60 60 60 45 45	Pulse 110 117 103 109 117	Maxpulse 130 145 135 175 148	Calories 409.1 479.0 340.0 282.4 406.0
1 2 3 4 5	Duration 60 60 60 45 45	Pulse 110 117 103 109 117 102	Maxpulse 130 145 135 175 148 127	Calories 409.1 479.0 340.0 282.4 406.0 300.0
1 2 3 4 5	Duration 60 60 60 45 45 60 60	Pulse 110 117 103 109 117 102 110	Maxpulse 130 145 135 175 148 127 136	Calories 409.1 479.0 340.0 282.4 406.0 300.0 374.0
1 2 3 4 5 6 7	Duration 60 60 60 45 45 60 60	Pulse 110 117 103 109 117 102 110	Maxpulse 130 145 135 175 148 127 136 134	Calories 409.1 479.0 340.0 282.4 406.0 300.0 374.0 253.3
1 2 3 4 5 6 7 8	Duration 60 60 60 45 45 60 60 45 30	Pulse 110 117 103 109 117 102 110 104 109	Maxpulse 130 145 135 175 148 127 136 134 133	Calories 409.1 479.0 340.0 282.4 406.0 300.0 374.0 253.3 195.1
1 2 3 4 5 6 7 8 9	Duration 60 60 60 45 45 60 60 45 30 60	Pulse 110 117 103 109 117 102 110 104 109 98	Maxpulse 130 145 135 175 148 127 136 134 133	Calories 409.1 479.0 340.0 282.4 406.0 300.0 374.0 253.3 195.1 269.0
1 2 3 4 5 6 7 8 9 10	Duration 60 60 45 45 60 60 45 30 60 60	Pulse 110 117 103 109 117 102 110 104 109 98 103	Maxpulse 130 145 135 175 148 127 136 134 133 124 147	Calories 409.1 479.0 340.0 282.4 406.0 300.0 374.0 253.3 195.1 269.0 329.3
1 2 3 4 5 6 7 8 9 10 11	Duration 60 60 60 45 45 60 60 45 30 60 60 60	Pulse 110 117 103 109 117 102 110 104 109 98 103 100	Maxpulse 130 145 135 175 148 127 136 134 133 124 147 120	Calories 409.1 479.0 340.0 282.4 406.0 300.0 374.0 253.3 195.1 269.0 329.3 250.7
1 2 3 4 5 6 7 8 9 10 11 12	Duration 60 60 60 45 45 60 60 60 60 60 60	Pulse 110 117 103 109 117 102 110 104 109 98 103 100 106	Maxpulse 130 145 135 175 148 127 136 134 133 124 147 120 128	Calories 409.1 479.0 340.0 282.4 406.0 300.0 374.0 253.3 195.1 269.0 329.3 250.7 345.3
1 2 3 4 5 6 7 8 9 10 11 12 13	Duration 60 60 60 45 45 60 60 60 60 60 60 60	Pulse 110 117 103 109 117 102 110 104 109 98 103 100 106 104	Maxpulse 130 145 135 175 148 127 136 134 133 124 147 120 128 132	Calories 409.1 479.0 340.0 282.4 406.0 300.0 374.0 253.3 195.1 269.0 329.3 250.7 345.3 379.3
1 2 3 4 5 6 7 8 9 10 11 12 13 14	Duration 60 60 60 45 45 60 60 60 60 60 60 60 60	Pulse 110 117 103 109 117 102 110 104 109 98 103 100 106 104 98	Maxpulse 130 145 135 175 148 127 136 134 133 124 147 120 128 132 123	Calories 409.1 479.0 340.0 282.4 406.0 300.0 374.0 253.3 195.1 269.0 329.3 250.7 345.3 379.3 275.0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	Duration 60 60 60 45 45 60 60 60 60 60 60 60 60 60 60	Pulse 110 117 103 109 117 102 110 104 109 98 103 100 106 104 98 98	Maxpulse 130 145 135 175 148 127 136 134 133 124 147 120 128 132 123 120	Calories 409.1 479.0 340.0 282.4 406.0 300.0 374.0 253.3 195.1 269.0 329.3 250.7 345.3 379.3 275.0 215.2
1 2 3 4 5 6 7 8 9 10 11 12 13 14	Duration 60 60 60 45 45 60 60 60 60 60 60 60 60 60 60 60	Pulse 110 117 103 109 117 102 110 104 109 98 103 100 106 104 98 98 100	Maxpulse 130 145 135 175 148 127 136 134 133 124 147 120 128 132 123 120 120	Calories 409.1 479.0 340.0 282.4 406.0 300.0 374.0 253.3 195.1 269.0 329.3 250.7 345.3 379.3 275.0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 18	Duration 60 60 60 45 45 60 60 60 60 60 60 60 60 60 60 60 60 60	Pulse 110 117 103 109 117 102 110 104 109 98 103 100 106 104 98 98 100 103	Maxpulse 130 145 135 175 148 127 136 134 133 124 147 120 128 132 123 120 120 123	Calories 409.1 479.0 340.0 282.4 406.0 300.0 374.0 253.3 195.1 269.0 329.3 250.7 345.3 379.3 275.0 215.2 300.0 323.0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 18	Duration 60 60 60 45 45 45 60 60 60 60 60 60 60 60 60 60 60 60 60	Pulse 110 117 103 109 117 102 110 104 109 98 103 100 106 104 98 98 100 103 97	Maxpulse 130 145 135 175 148 127 136 134 133 124 147 120 128 132 123 120 120 123 125	Calories 409.1 479.0 340.0 282.4 406.0 300.0 374.0 253.3 195.1 269.0 329.3 250.7 345.3 379.3 275.0 215.2 300.0 323.0 243.0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 18	Duration 60 60 60 45 45 60 60 60 60 60 60 60 60 60 60 60 60 60	Pulse 110 117 103 109 117 102 110 104 109 98 103 100 106 104 98 98 100 103	Maxpulse 130 145 135 175 148 127 136 134 133 124 147 120 128 132 123 120 120 123	Calories 409.1 479.0 340.0 282.4 406.0 300.0 374.0 253.3 195.1 269.0 329.3 250.7 345.3 379.3 275.0 215.2 300.0 323.0

```
21
                 100
                                     282.0
           45
                            119
22
           60
                 130
                            101
                                     300.0
23
           45
                 105
                            132
                                     246.0
24
           60
                 102
                            126
                                     334.5
25
                 100
                            120
                                     250.0
           60
26
           60
                  92
                            118
                                     241.0
                                     280.0
28
           60
                 100
                            132
                 102
                            129
                                     380.3
29
           60
30
           60
                  92
                            115
                                     243.0
31
           45
                  90
                            112
                                     180.1
```

#### 3.3 replace the missing values from STANDARD GLOBAL CONSTRANT

	Duration	Pulse	Maxpulse	Calories
0	60	110	130	409.1
1	60	117	145	479.0
2	60	103	135	340.0
3	45	109	175	282.4
4	45	117	148	406.0
5	60	102	127	300.0
6	60	110	136	374.0
7	45	104	134	253.3
8	30	109	133	195.1
9	60	98	124	269.0
10	60	103	147	329.3
11	60	100	120	250.7
12	60	106	128	345.3
13	60	104	132	379.3
14	60	98	123	275.0
15	60	98	120	215.2
16	60	100	120	300.0
17	45	90	112	999999.0
18	60	103	123	323.0
19	45	97	125	243.0
20	60	108	131	364.2

```
282.0
21
           45
                  100
                              119
22
           60
                  130
                              101
                                        300.0
23
                                        246.0
           45
                  105
                              132
24
           60
                  102
                              126
                                       334.5
25
                  100
                              120
                                        250.0
           60
26
           60
                   92
                              118
                                        241.0
27
           60
                  103
                              132
                                    999999.0
                  100
                                        280.0
28
           60
                              132
29
           60
                  102
                              129
                                        380.3
    Duration
                Pulse
                        Maxpulse
                                    Calories
0
                  110
                                        409.1
           60
                              130
1
           60
                  117
                              145
                                       479.0
2
           60
                  103
                                        340.0
                              135
3
           45
                  109
                              175
                                        282.4
4
           45
                  117
                                       406.0
                              148
5
           60
                  102
                              127
                                        300.0
6
           60
                  110
                              136
                                        374.0
7
           45
                  104
                                       253.3
                              134
8
           30
                  109
                              133
                                        195.1
9
           60
                   98
                              124
                                        269.0
10
           60
                  103
                              147
                                        329.3
11
           60
                  100
                              120
                                       250.7
12
           60
                  106
                              128
                                        345.3
13
           60
                  104
                              132
                                        379.3
14
           60
                   98
                              123
                                       275.0
15
           60
                    98
                              120
                                       215.2
                                       300.0
16
           60
                  100
                              120
17
           45
                   90
                                      1300.0
                              112
                                        323.0
18
           60
                  103
                              123
19
           45
                   97
                              125
                                        243.0
20
           60
                  108
                              131
                                        364.2
21
           45
                  100
                              119
                                       282.0
22
                                       300.0
           60
                  130
                              101
23
           45
                  105
                              132
                                       246.0
24
           60
                  102
                              126
                                        334.5
25
                                       250.0
           60
                  100
                              120
26
           60
                   92
                                        241.0
                              118
27
           60
                  103
                              132
                                      1300.0
28
           60
                  100
                              132
                                        280.0
29
           60
                  102
                              129
                                       380.3
```

#### 3.4 replace the mean, median, mode

```
[116]: df = pd.read_csv("example-data.csv")
# x = df["Calories"].mean()
# x = df["Calories"].median()
x = df["Calories"].mode()[0]
```

```
df["Calories"].fillna(x, inplace = True)
print(df.head(30).to_string())
```

	Duration	Pulse	Maxpulse	Calories
0	60	110	130	409.1
1	60	117	145	479.0
2	60	103	135	340.0
3	45	109	175	282.4
4	45	117	148	406.0
5	60	102	127	300.0
6	60	110	136	374.0
7	45	104	134	253.3
8	30	109	133	195.1
9	60	98	124	269.0
10	60	103	147	329.3
11	60	100	120	250.7
12	60	106	128	345.3
13	60	104	132	379.3
14	60	98	123	275.0
15	60	98	120	215.2
16	60	100	120	300.0
17	45	90	112	300.0
18	60	103	123	323.0
19	45	97	125	243.0
20	60	108	131	364.2
21	45	100	119	282.0
22	60	130	101	300.0
23	45	105	132	246.0
24	60	102	126	334.5
25	60	100	120	250.0
26	60	92	118	241.0
27	60	103	132	300.0
28	60	100	132	280.0
29	60	102	129	380.3

# 4 Operations in Dataset data.csv

```
[117]: df = pd.read_csv("data.csv")
    df['Date'] = pd.to_datetime(df['Date'], format="%d-%m-%Y")
    print(df.to_string())
```

	Duration	Pulse	Maxpulse	Calories	Date
0	60	110	130	409.1	2020-12-01
1	60	117	145	479.0	2020-12-02
2	60	103	135	340.0	2020-12-03
3	45	109	175	282.4	2020-12-04
4	45	117	148	406.0	2020-12-05

5	60	102	127	300.0	2020-12-06
6	60	110	136	374.0	2020-12-07
7	45	104	134	253.3	2020-12-08
8	45	104	134	253.3	2020-12-08
9	30	109	133	195.1	2020-12-09
10	60	98	124	269.0	2020-12-10
11	60	103	147	329.3	2020-12-11
12	60	100	120	250.7	2020-12-12
13	60	106	128	345.3	2020-12-13
14	60	104	132	379.3	2020-12-14
15	60	98	123	275.0	2020-12-15
16	60	98	120	215.2	2020-12-16
17	60	100	120	300.0	2020-12-17
18	45	90	112	NaN	2020-12-18
19	60	103	123	323.0	2020-12-19
20	45	97	125	243.0	2020-12-20
21	60	108	131	364.2	2020-12-21
22	45	100	119	282.0	2020-12-22
23	60	130	101	300.0	2020-12-23
24	45	105	132	246.0	2020-12-24
25	60	102	126	334.5	2020-12-25
26	60	100	120	250.0	2020-12-26
27	60	92	118	241.0	2020-12-27
28	60	103	132	NaN	2020-12-28
29	60	100	132	280.0	2020-12-29
30	60	102	129	380.3	2020-12-30

## 4.1 drop the row having Nan

# [118]: print(df.dropna().to\_string())

	Duration	Pulse	Maxpulse	Calories	Date
0	60	110	130	409.1	2020-12-01
1	60	117	145	479.0	2020-12-02
2	60	103	135	340.0	2020-12-03
3	45	109	175	282.4	2020-12-04
4	45	117	148	406.0	2020-12-05
5	60	102	127	300.0	2020-12-06
6	60	110	136	374.0	2020-12-07
7	45	104	134	253.3	2020-12-08
8	45	104	134	253.3	2020-12-08
9	30	109	133	195.1	2020-12-09
10	60	98	124	269.0	2020-12-10
11	60	103	147	329.3	2020-12-11
12	60	100	120	250.7	2020-12-12
13	60	106	128	345.3	2020-12-13
14	60	104	132	379.3	2020-12-14
15	60	98	123	275.0	2020-12-15

```
16
          60
                  98
                            120
                                    215.2 2020-12-16
17
          60
                 100
                            120
                                    300.0 2020-12-17
19
          60
                 103
                            123
                                    323.0 2020-12-19
20
          45
                  97
                            125
                                    243.0 2020-12-20
21
          60
                 108
                            131
                                    364.2 2020-12-21
22
                                    282.0 2020-12-22
          45
                 100
                            119
23
                 130
                            101
                                    300.0 2020-12-23
          60
                                    246.0 2020-12-24
24
          45
                 105
                            132
25
          60
                 102
                            126
                                    334.5 2020-12-25
26
          60
                 100
                            120
                                    250.0 2020-12-26
27
          60
                  92
                                    241.0 2020-12-27
                            118
29
          60
                 100
                            132
                                    280.0 2020-12-29
30
          60
                 102
                            129
                                    380.3 2020-12-30
```

### 4.2 replacing data in specific row and attribute

```
[119]: df.loc[6, 'Duration'] = 500000
print(df)
```

	Duration	Pulse	Maxpulse	Calories	Date
0	60	110	130	409.1	2020-12-01
1	60	117	145	479.0	2020-12-02
2	60	103	135	340.0	2020-12-03
3	45	109	175	282.4	2020-12-04
4	45	117	148	406.0	2020-12-05
5	60	102	127	300.0	2020-12-06
6	500000	110	136	374.0	2020-12-07
7	45	104	134	253.3	2020-12-08
8	45	104	134	253.3	2020-12-08
9	30	109	133	195.1	2020-12-09
10	60	98	124	269.0	2020-12-10
11	60	103	147	329.3	2020-12-11
12	60	100	120	250.7	2020-12-12
13	60	106	128	345.3	2020-12-13
14	60	104	132	379.3	2020-12-14
15	60	98	123	275.0	2020-12-15
16	60	98	120	215.2	2020-12-16
17	60	100	120	300.0	2020-12-17
18	45	90	112	NaN	2020-12-18
19	60	103	123	323.0	2020-12-19
20	45	97	125	243.0	2020-12-20
21	60	108	131	364.2	2020-12-21
22	45	100	119	282.0	2020-12-22
23	60	130	101	300.0	2020-12-23
24	45	105	132	246.0	2020-12-24
25	60	102	126	334.5	2020-12-25
26	60	100	120	250.0	2020-12-26
27	60	92	118	241.0	2020-12-27

```
28
                60
                      103
                                 132
                                           NaN 2020-12-28
      29
                60
                      100
                                 132
                                         280.0 2020-12-29
      30
                60
                      102
                                 129
                                         380.3 2020-12-30
[120]: print(df.info())
       for x in df.index:
         if df.loc[x, 'Maxpulse'] > 120:
           df.loc[x, "Maxpulse"] = 120
       print(df.to_string())
      <class 'pandas.core.frame.DataFrame'>
      RangeIndex: 31 entries, 0 to 30
      Data columns (total 5 columns):
           Column
                     Non-Null Count Dtype
       0
           Duration 31 non-null
                                      int64
```

1 Pulse 31 non-null int64 2 Maxpulse 31 non-null int64 3 Calories 29 non-null float64 Date 31 non-null datetime64[ns] dtypes: datetime64[ns](1), float64(1), int64(3)

memory usage: 1.3 KB

None

	Duration	Pulse	Maxpulse	Calories	Date
0	60	110	120	409.1	2020-12-01
1	60	117	120	479.0	2020-12-02
2	60	103	120	340.0	2020-12-03
3	45	109	120	282.4	2020-12-04
4	45	117	120	406.0	2020-12-05
5	60	102	120	300.0	2020-12-06
6	500000	110	120	374.0	2020-12-07
7	45	104	120	253.3	2020-12-08
8	45	104	120	253.3	2020-12-08
9	30	109	120	195.1	2020-12-09
10	60	98	120	269.0	2020-12-10
11	60	103	120	329.3	2020-12-11
12	60	100	120	250.7	2020-12-12
13	60	106	120	345.3	2020-12-13
14	60	104	120	379.3	2020-12-14
15	60	98	120	275.0	2020-12-15
16	60	98	120	215.2	2020-12-16
17	60	100	120	300.0	2020-12-17
18	45	90	112	NaN	2020-12-18
19	60	103	120	323.0	2020-12-19
20	45	97	120	243.0	2020-12-20
21	60	108	120	364.2	2020-12-21
22	45	100	119	282.0	2020-12-22
23	60	130	101	300.0	2020-12-23

```
24
           45
                 105
                             120
                                     246.0 2020-12-24
25
           60
                 102
                             120
                                     334.5 2020-12-25
26
           60
                 100
                             120
                                     250.0 2020-12-26
27
           60
                  92
                             118
                                     241.0 2020-12-27
28
                 103
                                       NaN 2020-12-28
           60
                             120
29
           60
                 100
                             120
                                     280.0 2020-12-29
30
           60
                 102
                             120
                                     380.3 2020-12-30
```

#### 4.3 remove duplicates

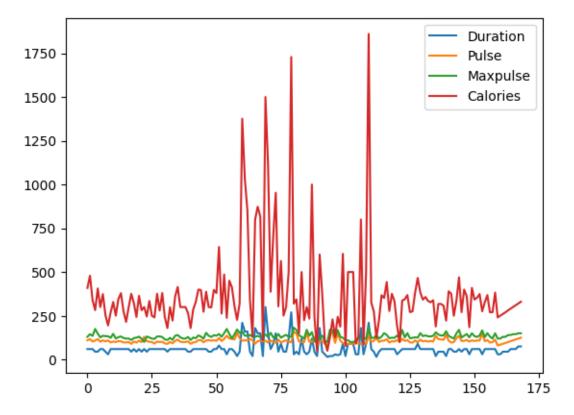
```
[121]: print(df.drop_duplicates().to_string())
```

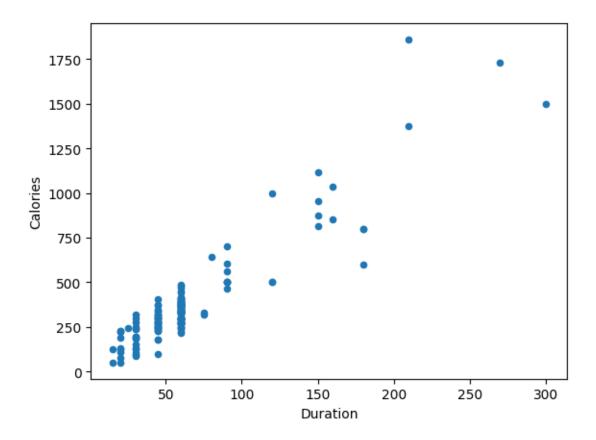
```
Duration Pulse
                       Maxpulse
                                  Calories
                                                   Date
0
           60
                 110
                             120
                                     409.1 2020-12-01
1
           60
                 117
                             120
                                     479.0 2020-12-02
2
                 103
                                     340.0 2020-12-03
           60
                             120
3
                                     282.4 2020-12-04
           45
                 109
                             120
4
                                     406.0 2020-12-05
           45
                 117
                             120
5
           60
                 102
                             120
                                     300.0 2020-12-06
6
      500000
                 110
                             120
                                     374.0 2020-12-07
7
                 104
           45
                             120
                                     253.3 2020-12-08
9
           30
                 109
                             120
                                     195.1 2020-12-09
10
           60
                  98
                             120
                                     269.0 2020-12-10
11
           60
                 103
                             120
                                     329.3 2020-12-11
12
           60
                 100
                             120
                                     250.7 2020-12-12
13
           60
                 106
                             120
                                     345.3 2020-12-13
14
           60
                 104
                             120
                                     379.3 2020-12-14
15
                  98
                             120
                                     275.0 2020-12-15
           60
                                     215.2 2020-12-16
16
           60
                  98
                             120
17
           60
                 100
                             120
                                     300.0 2020-12-17
18
                  90
                                       NaN 2020-12-18
           45
                             112
                                     323.0 2020-12-19
19
           60
                 103
                             120
20
                  97
                                     243.0 2020-12-20
           45
                             120
21
           60
                 108
                             120
                                     364.2 2020-12-21
22
           45
                 100
                             119
                                     282.0 2020-12-22
23
           60
                 130
                             101
                                     300.0 2020-12-23
24
           45
                 105
                             120
                                     246.0 2020-12-24
25
           60
                 102
                             120
                                     334.5 2020-12-25
26
                 100
                                     250.0 2020-12-26
           60
                             120
27
           60
                  92
                             118
                                     241.0 2020-12-27
28
           60
                 103
                             120
                                       NaN 2020-12-28
29
           60
                 100
                             120
                                     280.0 2020-12-29
30
           60
                 102
                                     380.3 2020-12-30
                             120
```

```
[122]: import pandas as pd
import matplotlib.pyplot as plt

df = pd.read_csv('example-data.csv')
```

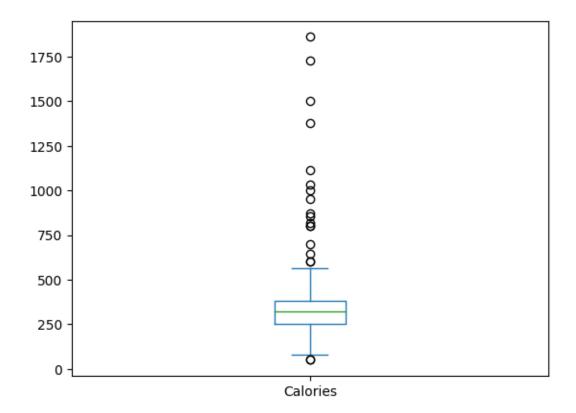
```
x = df["Calories"].mean()
df["Calories"].fillna(x, inplace=True)
df.plot()
df.plot(kind = 'scatter', x = 'Duration', y = 'Calories')
plt.show()
plt.show()
```





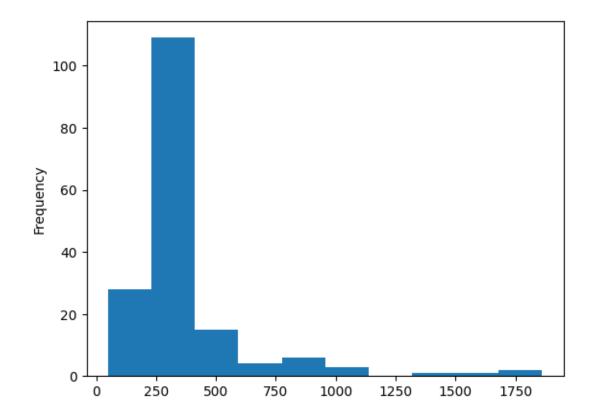
```
[123]: # Histogram Plot
df["Calories"].plot(kind="box")
plt.plot()
```

[123]: []



```
[124]: df["Calories"].plot(kind="hist")
```

[124]: <Axes: ylabel='Frequency'>



positive skewed for calories