

Pandas - Fixing Wrong Data



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Wrong Data

"Wrong data" does not have to be "empty cells" or "wrong format", it can just be wrong, like if someone registered "199" instead of "1.99".

Sometimes you can spot wrong data by looking at the data set, because you have an expectation of what it should be.

If you take a look at our data set, you can see that in row 7, the duration is 450, but for all the other rows the duration is between 30 and 60.

It doesn't have to be wrong, but taking in consideration that this is the data set of someone's workout sessions, we conclude with the fact that this person did not work out in 450 minutes.

	Duration	Date	Pulse	Maxpulse	Calories
0	60	'2020/12/01'	110	130	409.1
1	60	'2020/12/02'	117	145	479.0
2	60	'2020/12/03'	103	135	340.0
3	45	'2020/12/04'	109	175	282.4
4	45	'2020/12/05'	117	148	406.0
5	60	'2020/12/06'	102	127	300.0
6	60	'2020/12/07'	110	136	374.0
7	450	'2020/12/08'	104	134	253.3
8	30	'2020/12/09'	109	133	195.1
9	60	'2020/12/10'	98	124	269.0
10	60	'2020/12/11'	103	147	329.3
11	60	'2020/12/12'	100	120	250.7
12	60	'2020/12/12'	100	120	250.7
13	60	'2020/12/13'	106	128	345.3

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18	45	'2020/12/18'	90	112	NaN			
19	60	'2020/12/19'	103	123	323.0			
20	45	'2020/12/20'	97	125	243.0			
21	60	'2020/12/21'	108	131	364.2			
22	45	NaN	100	119	282.0			
23	60	'2020/12/23'	130	101	300.0			
24	45	'2020/12/24'	105	132	246.0			
25	60	'2020/12/25'	102	126	334.5			
26	60	20201226	100	120	250.0			
27	60	'2020/12/27'	92	118	241.0			
28	60	'2020/12/28'	103	132	NaN			
29	60	'2020/12/29'	100	132	280.0			
30	60	'2020/12/30'	102	129	380.3			
31	60	'2020/12/31'	92	115	243.0			

How can we fix wrong values, like the one for "Duration" in row 7?

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Replacing Values

One way to fix wrong values is to replace them with something else.

In our example, it is most likely a typo, and the value should be "45" instead of "450", and we could just insert "45" in row 7:



```
df.loc[7, 'Duration'] = 45
```

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For small data sets you might be able to replace the wrong data one by one, but not for big data sets.

To replace wrong data for larger data sets you can create some rules, e.g. set some boundaries for legal values, and replace any values that are outside of the boundaries.

Example

Loop through all values in the "Duration" column.

If the value is higher than 120, set it to 120:

```
for x in df.index:
if df.loc[x, "Duration"] > 120:
   df.loc[x, "Duration"] = 120
```

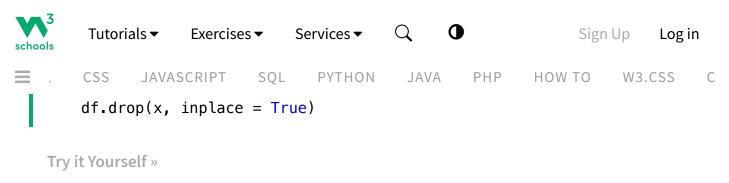
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Removing Rows

Another way of handling wrong data is to remove the rows that contains wrong data.

This way you do not have to find out what to replace them with, and there is a good chance you do not need them to do your analyses.

Example



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