How to Easily Insert a Row at a Specific Index in a Pandas DataFrame

Authored by

stats writer

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In order to insert a row at a specific index position in a Pandas DataFrame, you can use the loc method to select the desired index position and then assign the row values to the DataFrame. This will insert the row at the specified index position. You can also use the insert method and pass in the index position and the row values to insert the row. After the row is inserted, you should reindex the DataFrame to ensure the index values are in the desired order.

You can use the following basic syntax to insert a row into a a specific index position in a pandas DataFrame:

#insert row in between index position 2 and 3
df.loc = value1, value2, value3, value4

#sort index
df = df.sort_index().reset_index(drop=True)

The following example shows how to use this syntax in practice.

Example: Insert Row at Specific Index Position in Pandas

Suppose we have the following pandas DataFrame:

import pandas as pd

#create DataFrame
df = pd.DataFrame({'team': ,
'points': ,
'assists': ,
'rebounds': })

#view DataFrame
print(df)

team points assists rebounds
0 A 18 5 11
1 B 22 7 8
2 C 19 7 10
3 D 14 9 6
4 E 14 12 6
5 F 11 9 5
6 G 20 9 9

7 H 28 4 12

We can use the following syntax to insert a row in between index position 2 and 3:

#insert row in between index position 2 and 3
df.loc = 'Z', 10, 5, 7

#sort index
df = df.sort_index().reset_index(drop=True)

#view updated DataFrame
print(df)

team points assists rebounds
0 A 18 5 11
1 B 22 7 8
2 C 19 7 10
3 Z 10 5 7
4 D 14 9 6
5 E 14 12 6
6 F 11 9 5
7 G 20 9 9
8 H 28 4 12

Notice that a row has been inserted in between the previous index position 2 and 3 with the following information:

team: Z
points: 10
assists: 5
rebounds: 7

By using the **sort_index()** and **reset_index()** functions, we were then able to reassign values to the index ranging from 0 to 8.

Note that the new row must contain the same number of values as the number of existing columns.

For example, if we attempted to insert a new row with only three values, we would receive an error:

#attempt to insert row with only three values
df.loc = 10, 5, 7

ValueError: cannot set a row with mismatched columns

We receive a because the number of values in the new row does not match the number of existing columns in the DataFrame.