How to Easily Create a Pandas DataFrame with Random Data

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Creating a Pandas DataFrame with random data is an easy and efficient way to create a dataset for data analysis. You can use the np.random module to generate random data, and then use the DataFrame class to create a DataFrame object from the generated data. The DataFrame object can then be used for further operations and analysis. After the DataFrame is created, you can also add additional columns and rows as needed. Additionally, you can set the index of the DataFrame for easy access to the data.

You can use the following basic syntax to create a pandas DataFrame that is filled with random integers:

df = pd.DataFrame(np.random.randint(0,100,size=(10, 3)), columns=list('ABC'))

This particular example creates a DataFrame with **10** rows and **3** columns where each value in the DataFrame is a random integer between **0** and **100**.

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

Example 1: Create Pandas DataFrame with Random Data

The following code shows how to create a pandas DataFrame with 10 rows and 3 columns where each value in the DataFrame is a random integer between 0 and 100:

```
import pandas as pd
import numpy as np

#create DataFrame
df = pd.DataFrame(np.random.randint(0,100,size=(10, 3)), columns=list('ABC'))

#view DataFrame
print(df)
```

```
A B C
0 72 70 27
1 87 85 7
2 4 42 84
3 85 87 63
4 79 72 30
5 96 99 79
6 26 47 90
7 35 69 56
8 42 47 0
```

9 97 4 59

Note that each time you run this code, the random integers in the DataFrame will be different.

If you'd like to create a reproducible example where the random integers are the same each time, you can use the following piece of code immediately before you create the DataFrame:

np.random.seed(0)

Now each time you run the code, the random integers in the DataFrame will be the same.

Example 2: Add Column of Random Data to Existing DataFrame

Suppose we have the following existing 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 code to add a new column called "rand" that contains random integers between 0 and 100:

import numpy as np

```
#add 'rand' column that contains 8 random integers between 0 and 100
df = np.random.randint(0,100,size=(8, 1))

#view updated DataFrame
print(df)
```

```
team points assists rebounds rand
0 A 18 5 11 47
1 B 22 7 8 64
2 C 19 7 10 82
3 D 14 9 6 99
4 E 14 12 6 88
5 F 11 9 5 49
6 G 20 9 9 29
7 H 28 4 12 19
```

Notice that the new column "rand" has been added to the existing DataFrame.