

How can I find the maximum value across multiple columns in Pandas?

Authored by
stats writer

June 27, 2024

RECOMMENDED CITATION

stats writer (2024). *How can I find the maximum value across multiple columns in Pandas?*. PSYCHOLOGICAL SCALES. Retrieved from <https://scales.arabpsychology.com/?p=155081>

Pandas is a popular data analysis library in Python that offers various functions to manipulate and analyze data efficiently. One of its useful functions is finding the maximum value across multiple columns in a dataset. This can be achieved by using the "max" function, which returns the maximum value from a specific column or a series of columns in a Pandas DataFrame. Additionally, the "max" function also allows users to specify the axis on which the maximum value should be calculated, making it suitable for finding the highest value across rows or columns. Overall, Pandas' "max" function provides a convenient and efficient way to find the maximum value across multiple columns in a DataFrame, making it an essential tool for data analysis tasks.

Pandas: Find Max Value Across Multiple Columns

You can use the following methods to find the max value across multiple columns in a pandas DataFrame:

Method 1: Find Max Value Across Multiple Columns

```
df].max(axis=1)
```

Method 2: Add New Column Containing Max Value Across Multiple Columns

```
df = df].max(axis=1)
```

The following examples show how to use each of these methods in practice with the following pandas DataFrame:

```
import pandas as pd
```

```
#create DataFrame
```

```
df = pd.DataFrame({'player': ,  
'points': ,  
'rebounds': ,  
'assists': })
```

```
#view DataFrame
```

```
print(df)
```

```
player points rebounds assists
```

```
0 A 28 5 10
```

```
1 B 17 6 13
```

```
2 C 19 4 7
```

```
3 D 14 7 8
```

```
4 E 23 14 4
```

```
5 F 26 12 5
```

```
6 G 5 9 8
```

Example 1: Find Max Value Across Multiple Columns

The following code shows how to find the max value in each row across the points and rebounds columns:

```
#find max value across points and rebounds columns  
df].max(axis=1)
```

0 28

1 17

2 19

3 14

4 23

5 26

6 9

dtype: int64

Here's how to interpret the output:

The max value across the points and rebounds columns for the first row was 28. The max value across the points and rebounds columns for the second row was 17. The max value across the points and rebounds columns for the third row was 19.

And so on.

Example 2: Add New Column Containing Max Value Across Multiple Columns

The following code shows how to add a new column to the DataFrame that contains the max value in each row across the points and rebounds columns:

```
#add new column that contains max value across  
points and rebounds columns
```

```
df = df].max(axis=1)
```

```
#view updated DataFrame
```

```
print(df)
```

```
player points rebounds assists max_points_rebs
```

```
0 A 28 5 10 28
```

```
1 B 17 6 13 17
```

```
2 C 19 4 7 19
```

```
3 D 14 7 8 14
```

```
4 E 23 14 4 23
```

```
5 F 26 12 5 26
```

```
6 G 5 9 8 9
```

The new column titled `max_points_rebs` now contains the max value across the points and rebounds columns for each row in the DataFrame.

The following tutorials explain how to perform other common tasks in pandas: