

How can I read CSV files with Pandas using the ultimate guide?

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The ultimate guide to reading CSV files with Pandas is a comprehensive resource that provides step-by-step instructions for utilizing the Pandas library to efficiently and accurately read and manipulate CSV files. This guide offers a detailed explanation of the process, along with helpful tips and tricks, making it a valuable tool for anyone looking to work with CSV files using Pandas. By following this ultimate guide, individuals can easily and effectively access and analyze data from CSV files for a variety of purposes.

The Ultimate Guide: Read CSV Files with Pandas

CSV (comma-separated value) files are one of the most common ways to store data.

Fortunately the pandas function `read_csv()` allows you to easily read in CSV files into Python in almost any format you'd like.

This tutorial explains several ways to read CSV files into Python using the following CSV file named 'data.csv':

playerID,team,points

1,Lakers,26

2,Mavs,19

3,Bucks,24

4,Spurs,22

Example 1: Read CSV File into pandas DataFrame

The following code shows how to read the CSV file into a pandas DataFrame:

```
#import CSV file as DataFrame
df = pd.read_csv('data.csv')#view DataFrame
df
```

```
playerID team points
0 1 Lakers 26
1 2 Mavs 19
2 3 Bucks 24
3 4 Spurs 22
```

Example 2: Read Specific Columns from CSV File

The following code shows how to read only the columns titled 'playerID' and 'points' in the CSV file into a pandas DataFrame:

```
#import only specific columns from CSV file
df = pd.read_csv('data.csv', usecols=)#view DataFrame
df
```

```
playerID points
0 1 26
1 2 19
```

2 3 24

3 4 22

Alternatively you can specify column indices to read into a pandas DataFrame:

```
#import only specific columns from CSV file  
df = pd.read_csv('data.csv', usecols=)#view DataFrame  
df
```

playerID team

0 1 Lakers

1 2 Mavs

2 3 Bucks

3 4 Spurs

Example 3: Specify Header Row when Importing CSV File

In some cases, the header row might not be the first row in a CSV file.

For example, consider the following CSV file in which the header row actually appears in the second row:

random,data,values

playerID,team,points

1,Lakers,26

2,Mavs,19

3,Bucks,24

4,Spurs,22

To read this CSV file into a pandas DataFrame, we can specify `header=1` as follows:

#import from CSV file and specify that header starts on second row

```
df = pd.read_csv('data.csv', header=1)#view DataFrame  
df
```

playerID team points

0 1 Lakers 26

1 2 Mavs 19

2 3 Bucks 24

3 4 Spurs 22

Example 4: Skip Rows when Importing CSV File

You can also easily skip rows when importing a CSV file by using the `skiprows` argument.

For example, the following code shows how to skip the second row when importing the CSV file:

```
#import from CSV file and skip second row  
df = pd.read_csv('data.csv', skiprows=1)#view DataFrame  
df
```

```
playerID team points  
0 2 Mavs 19  
1 3 Bucks 24  
2 4 Spurs 22
```

And the following code shows how to skip the second *and* third row when importing the CSV file:

```
#import from CSV file and skip second and third rows  
df = pd.read_csv('data.csv', skiprows=2)#view DataFrame  
df
```

```
playerID team points  
1 3 Bucks 24  
2 4 Spurs 22
```

Example 5: Read CSV Files with Custom Delimiter

Occasionally you may have a CSV file with a delimiter that is different from a comma.

For example, suppose our CSV file has an underscore as a delimiter:

```
playerID_team_points  
1_Lakers_26  
2_Mavs_19  
3_Bucks_24  
4_Spurs_22
```

To read this CSV file into pandas, we can use the `sep` argument to specify the delimiter to use when reading the file:

```
#import from CSV file and specify delimiter to use  
df = pd.read_csv('data.csv', sep='_')#view DataFrame  
df
```

```
playerID team points  
0 1 Lakers 26  
1 2 Mavs 19  
2 3 Bucks 24  
3 4 Spurs 22
```

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

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