

Python Write CSV File

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Summary: in this tutorial, you'll learn how to write data into a CSV file using the built-in `csv` module.

Steps for writing a CSV file

To write data into a CSV file, you follow these steps:

- First, open the CSV file for writing (`w` mode) by using the `open()` function.
- Second, create a CSV writer object by calling the `writer()` function of the `csv` module.
- Third, write data to CSV file by calling the `writerow()` or `writerows()` method of the CSV writer object.
- Finally, close the file once you complete writing data to it.

The following code illustrates the above steps:

```
import csv

# open the file in the write mode
f = open('path/to/csv_file', 'w')
```

```
# create the csv writer
writer = csv.writer(f)

# write a row to the csv file
writer.writerow(row)

# close the file
f.close()
```

It'll be shorter if you use the `with` statement so that you don't need to call the `close()` method to explicitly close the file:

```
import csv

# open the file in the write mode
with open('path/to/csv_file', 'w') as f:
    # create the csv writer
    writer = csv.writer(f)

    # write a row to the csv file
    writer.writerow(row)
```

If you're dealing with non-ASCII characters, you need to specify the character encoding in the `open()` function.

The following illustrates how to write UTF-8 characters to a CSV file:

```
import csv

# open the file in the write mode
with open('path/to/csv_file', 'w', encoding='UTF8') as f:
    # create the csv writer
    writer = csv.writer(f)
```

```
# write a row to the csv file  
writer.writerow(row)
```

Writing to CSV files example

The following example shows how to write data to the CSV file:

```
import csv  
  
header = ['name', 'area', 'country_code2', 'country_code3']  
data = ['Afghanistan', 652090, 'AF', 'AFG']  
  
with open('countries.csv', 'w', encoding='UTF8') as f:  
    writer = csv.writer(f)  
  
    # write the header  
    writer.writerow(header)  
  
    # write the data  
    writer.writerow(data)
```

If you open the `countries.csv`, you'll see one issue that the file contents have an additional blank line between two subsequent rows:

To remove the blank line, you pass the keyword argument `newline=''` to the `open()` function as follows:

```
import csv  
  
header = ['name', 'area', 'country_code2', 'country_code3']
```

```
data = ['Afghanistan', 652090, 'AF', 'AFG']
```

```
with open('countries.csv', 'w', encoding='UTF8', newline='') as f:
    writer = csv.writer(f)

    # write the header
    writer.writerow(header)

    # write the data
    writer.writerow(data)
```

Output:

Writing multiple rows to CSV files

To write multiple rows to a CSV file at once, you use the `writerows()` method of the CSV writer object.

The following uses the `writerows()` method to write multiple rows into the `countries.csv` file:

```
import csv

header = ['name', 'area', 'country_code2', 'country_code3']
data = [
    ['Albania', 28748, 'AL', 'ALB'],
    ['Algeria', 2381741, 'DZ', 'DZA'],
    ['American Samoa', 199, 'AS', 'ASM'],
    ['Andorra', 468, 'AD', 'AND'],
    ['Angola', 1246700, 'AO', 'AGO']
]
```

```
with open('countries.csv', 'w', encoding='UTF8', newline='') as f:
    writer = csv.writer(f)

    # write the header
    writer.writerow(header)

    # write multiple rows
    writer.writerows(data)
```

Writing to CSV files using the DictWriter class

If each row of the CSV file is a dictionary, you can use the `DictWriter` class of the `csv` module to write the dictionary to the CSV file.

The example illustrates how to use the `DictWriter` class to write data to a CSV file:

```
import csv

# csv header
fieldnames = ['name', 'area', 'country_code2', 'country_code3']

# csv data
rows = [
    {'name': 'Albania',
     'area': 28748,
     'country_code2': 'AL',
     'country_code3': 'ALB'},
    {'name': 'Algeria',
     'area': 2381741,
     'country_code2': 'DZ',
     'country_code3': 'DZA'},
    {'name': 'American Samoa',
     'area': 199,
```

```
'country_code2': 'AS',  
'country_code3': 'ASM'}  
]
```

```
with open('countries.csv', 'w', encoding='UTF8', newline='') as f:  
    writer = csv.DictWriter(f, fieldnames=fieldnames)  
    writer.writeheader()  
    writer.writerows(rows)
```

How it works.

- First, define variables that hold the field names and data rows of the CSV file.
- Next, open the CSV file for writing by calling the `open()` function.
- Then, create a new instance of the `DictWriter` class by passing the file object (`f`) and `fieldnames` argument to it.
- After that, write the header for the CSV file by calling the `writeheader()` method.
- Finally, write data rows to the CSV file using the `writerows()` method.

Summary

- Use the CSV Writer or the `DictWriter` class to write data to a CSV file.