Reading CSV files in Python

riturajsaha

A **CSV (Comma Separated Values)** file is a form of plain text document which uses a particular format to organize tabular information. CSV file format is a bounded text document that uses a comma to distinguish the values. Every row in the document is a data log. Each log is composed of one or more fields, divided by commas. It is the most popular file format for importing and exporting spreadsheets and databases.

Reading a CSV File

There are various ways to read a CSV file that uses either the CSV module or the pandas library.

- **csv Module:** The CSV module is one of the modules in Python which provides classes for reading and writing tabular information in CSV file format.
- **pandas Library:** The pandas library is one of the open-source Python libraries that provide high-performance, convenient data structures and data analysis tools and techniques for Python programming.

Reading a CSV File Format in Python:

Consider the below CSV file named ‘Giants.CSV’:

Organiztion	CEO	Established
Alphabet	Sundar Pichai	02-Oct-15
Microsoft	Satya Nadella	04-Apr-75
Aamzon	Jeff Bezos	05-Jul-94

- **USing csv.reader():** At first, the CSV file is opened using the open() method in 'r' mode(specifies read mode while opening a file) which returns the file object then it is read by using the reader() method of CSV module that returns the reader object that iterates throughout the lines in the specified CSV document.
  Note: The 'with' keyword is used along with the open() method as it simplifies exception handling and automatically closes the CSV file.

Python3

```
import csv

# opening the CSV file
with open('Giants.csv', mode ='r')as file:

  # reading the CSV file
  csvFile = csv.reader(file)

  # displaying the contents of the CSV file
  for lines in csvFile:
        print(lines)
```

Output:

```
['Organization', 'CEO', 'Established']
['Alphabet', 'Sundar Pichai', '02-Oct-15']
['Microsoft', 'Satya Nadella', '04-Apr-75']
['Amazon', 'Jeff Bezos', '05-Jul-94']
```

In the above program reader() method is used to read the Giants.csv file which maps the data into lists.

- **Using csv.DictReader() class:** It is similar to the previous method, the CSV file is first opened using the open() method then it is read by using the DictReader class of csv module which works like a regular reader but maps the information in the CSV file into a dictionary. The very first line of the file consists of dictionary keys.

Python3

```
import csv

# opening the CSV file
with open('Giants.csv', mode ='r') as file:

        # reading the CSV file
        csvFile = csv.DictReader(file)

        # displaying the contents of the CSV file
        for lines in csvFile:
             print(lines)
```

Output:

OrderedDict([('Organization', 'Alphabet'), ('CEO', 'Sundar Pichai'), ('Established', '02-Oct-15')])
OrderedDict([('Organization', 'Microsoft'), ('CEO', 'Satya Nadella'), ('Established', '04-Apr-75')])
OrderedDict([('Organization', 'Amazon'), ('CEO', 'Jeff Bezos'), ('Established', '05-Jul-94')])

- **Using pandas.read_csv() method:** It is very easy and simple to read a CSV file using pandas library functions. Here read_csv() method of pandas library is used to read data from CSV files.

Python3

```
import pandas

# reading the CSV file
csvFile = pandas.read_csv('Giants.csv')

# displaying the contents of the CSV file
print(csvFile)
```

Output:

```
 Organization            CEO Established
 0   Alphabet  Sundar Pichai   02-Oct-15
 1   Microsoft  Satya Nadella   04-Apr-75
 2   Amazon     Jeff Bezos   05-Jul-94
```

In the above program, the csv_read() method of pandas library reads the Giants.csv file and maps its data into a 2D list.

Note: To know more about pandas.csv_read() click here.

Last Updated : 03 Dec, 2021

29

Similar Reads

1. Reading and Writing CSV Files in Python
2. How to create multiple CSV files from existing CSV file using Pandas ?
3. Python program to read CSV without CSV module
4. How to skip rows while reading csv file using Pandas?
5. Reading specific columns of a CSV file using Pandas
6. Uploading and Reading a CSV File in Flask
7. Python | Reading .ini Configuration Files
8. Reading and Writing to text files in Python

9. Reading and Writing XML Files in Python

10. Writing CSV files in Python

Related Tutorials

1. Data Analysis Tutorial

2. Flask Tutorial

3. Natural Language Processing (NLP) Tutorial

4. Data Science for Beginners

5. Data Science With Python Tutorial

Next

Working with csv files in Python

Article Contributed By :

riturajsaha
riturajsaha

Vote for difficulty

Current difficulty : Easy

Easy | Normal | Medium | Hard | Expert

Improved By : varshagumber28, kk9826225

Article Tags : python-csv, Python

Practice Tags : python

Improve Article | Report Issue

A-143, 9th Floor, Sovereign Corporate Tower, Sector-136, Noida, Uttar Pradesh - 201305

feedback@geeksforgeeks.org

GATE CS Notes

Operating Systems

Computer Network

Database Management System

Software Engineering

Digital Logic Design

Engineering Maths

Data Science & ML

Data Science With Python

Data Science For Beginner

Machine Learning Tutorial

Maths For Machine Learning

Pandas Tutorial

NumPy Tutorial

NLP Tutorial

Deep Learning Tutorial

Competitive Programming

Top DSA for CP

Top 50 Tree Problems

Top 50 Graph Problems

Top 50 Array Problems

Top 50 String Problems

Top 50 DP Problems

Top 15 Websites for CP

Interview Corner

Company Preparation

Preparation for SDE

Company Interview Corner

Experienced Interview

Internship Interview

Competitive Programming

Aptitude

Commerce

Python Programming Examples

Django Tutorial

Python Projects

Python Tkinter

OpenCV Python Tutorial

Python Interview Question

DevOps

Git

AWS

Docker

Kubernetes

Azure

GCP

System Design

What is System Design

Monolithic and Distributed SD

Scalability in SD

Databases in SD

High Level Design or HLD

Low Level Design or LLD

Top SD Interview Questions

GfG School

CBSE Notes for Class 8

CBSE Notes for Class 9

CBSE Notes for Class 10

CBSE Notes for Class 11

CBSE Notes for Class 12

English Grammar

UPSC

Accountancy

Business Studies

Microeconomics

Macroeconomics

Statistics for Economics

Indian Economic Development

Polity Notes

Geography Notes

History Notes

Science and Technology Notes

Economics Notes

Important Topics in Ethics

UPSC Previous Year Papers

SSC/ BANKING

SSC CGL Syllabus

SBI PO Syllabus

SBI Clerk Syllabus

IBPS PO Syllabus

IBPS Clerk Syllabus

Aptitude Questions

SSC CGL Practice Papers

Write & Earn

Write an Article

Improve an Article

Pick Topics to Write

Write Interview Experience

Internships

Video Internship