

## PySpark Tutorial

[Variables](https://sparkbyexamples.com/pyspark/pyspark-broadcast-variables/)  
(<https://sparkbyexamples.com/pyspark/pyspark-broadcast-variables/>)

local directory into DataFrame, applying

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## PySpark Read Csv file into DataFrame

 NNK

(<https://sparkbyexamples.com/author/admin/>). -

 PySpark

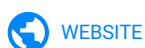
(<https://sparkbyexamples.com/category/pyspark/>).

PySpark provides `csv("path")` on `DataFrameReader` to read a CSV file into PySpark `DataFrame` and `dataframeObj.write.csv("path")` to save or write to the CSV file. In this tutorial, you will learn how to read a single file, multiple files, all files from a local directory into `DataFrame`, applying some transformations, and finally writing `DataFrame` back to CSV file using PySpark example.

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PySpark supports reading a CSV file with a pipe, comma, tab, space, or any other delimiter/separator files.



[PySpark – Accumulator  
\(https://sparkbyexamples.com/pyspark/pyspark-accumulator-with-example/\)](https://sparkbyexamples.com/pyspark/pyspark-accumulator-with-example/)

## PySpark DataFrame

[PySpark – Create a DataFrame  
\(https://sparkbyexamples.com/pyspark/different-ways-to-create-dataframe-in-pyspark/\)](https://sparkbyexamples.com/pyspark/different-ways-to-create-dataframe-in-pyspark/)

[PySpark – Create an empty DataFrame  
\(https://sparkbyexamples.com/pyspark/pyspark-create-an-empty-dataframe/\)](https://sparkbyexamples.com/pyspark/pyspark-create-an-empty-dataframe/)

[PySpark – Convert RDD to DataFrame  
\(https://sparkbyexamples.com/pyspark/convert-pyspark-rdd-to-dataframe/\)](https://sparkbyexamples.com/pyspark/convert-pyspark-rdd-to-dataframe/)

[PySpark – Convert DataFrame to Pandas  
\(https://sparkbyexamples.com/pyspark/convert-pyspark-dataframe-to-pandas/\)](https://sparkbyexamples.com/pyspark/convert-pyspark-dataframe-to-pandas/)

[PySpark – show\(\)  
\(https://sparkbyexamples.com/pyspark/pyspark-show-display-dataframe-contents-in-table/\)](https://sparkbyexamples.com/pyspark/pyspark-show-display-dataframe-contents-in-table/)

[PySpark – StructType & StructField  
\(https://sparkbyexamples.com/pyspark/pyspark-structtype-and-structfield/\)](https://sparkbyexamples.com/pyspark/pyspark-structtype-and-structfield/)

[PySpark – Row Class  
\(https://sparkbyexamples.com/pyspark/pyspark-row-using-rdd-dataframe/\)](https://sparkbyexamples.com/pyspark/pyspark-row-using-rdd-dataframe/)

[PySpark – Column Class  
\(https://sparkbyexamples.com/pyspark/pyspark-column-functions/\)](https://sparkbyexamples.com/pyspark/pyspark-column-functions/)

[PySpark – select\(\)  
\(https://sparkbyexamples.com/pyspark/select-columns-from-pyspark-dataframe/\)](https://sparkbyexamples.com/pyspark/select-columns-from-pyspark-dataframe/)

[PySpark – collect\(\)  
\(https://sparkbyexamples.com/pyspark/pyspark-collect/\)](https://sparkbyexamples.com/pyspark/pyspark-collect/)

[PySpark – withColumn\(\)  
\(https://sparkbyexamples.com/pyspark/pyspark-withcolumn/\)](https://sparkbyexamples.com/pyspark/pyspark-withcolumn/)

**Note:** PySpark out of the box supports reading files in CSV, JSON, and many more file formats into PySpark DataFrame.

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## 1. PySpark Read CSV File into DataFrame

Using `csv("path")` or `format("csv").load("path")` of `DataFrameReader`, you can read a CSV file into a PySpark DataFrame. These methods take a file path to read from as an argument. When you use `format("csv")` method, you can also specify the Data sources by their fully qualified name, but for built-in sources, you can simply use their short names (`csv`, `json`, `parquet`, `jdbc`, `text` e.t.c).

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[PySpark – withColumnRenamed\(\).](#)  
(<https://sparkbyexamples.com/pyspark/pyspark-rename-dataframe-column/>).

[PySpark – where\(\) & filter\(\).](#)  
(<https://sparkbyexamples.com/pyspark/pyspark-where-filter/>).

[PySpark – drop\(\) & dropDuplicates\(\).](#)  
(<https://sparkbyexamples.com/pyspark/pyspark-distinct-to-drop-duplicates/>).

[PySpark – orderBy\(\) and sort\(\).](#)  
(<https://sparkbyexamples.com/pyspark/pyspark-orderby-and-sort-explained/>).

[PySpark – groupBy\(\).](#)  
(<https://sparkbyexamples.com/pyspark/pyspark-groupby-explained-with-example/>).

[PySpark – join\(\).](#)  
(<https://sparkbyexamples.com/pyspark/pyspark-join-explained-with-examples/>).

[PySpark – union\(\) & unionAll\(\).](#)  
(<https://sparkbyexamples.com/pyspark/pyspark-union-and-unionall/>).

[PySpark – unionByName\(\).](#)  
(<https://sparkbyexamples.com/spark/spark-merge-two-dataframes-with-different-columns/>).

[PySpark – UDF \(User Defined Function\).](#)  
(<https://sparkbyexamples.com/pyspark/pyspark-udf-user-defined-function/>).

[PySpark – map\(\).](#)  
(<https://sparkbyexamples.com/pyspark/pyspark-map-transformation/>).

[PySpark – flatMap\(\).](#)  
(<https://sparkbyexamples.com/pyspark/pyspark-flatmap-transformation/>).

[pyspark – foreach\(\).](#)  
(<https://sparkbyexamples.com/pyspark/pyspark-loop-iterate-through-rows-in-dataframe/#use-foreach-loop-through-dataframe>).

[PySpark – sample\(\) vs sampleBy\(\).](#)

Refer dataset [zipcodes.csv](#) at GitHub  
(<https://github.com/spark-examples/pyspark-examples/blob/master/resources/zipcodes.csv>)

```
val spark = SparkSession.builder()
    .appName("SparkByExample")
    .getOrCreate()
df = spark.read.csv("/tmp/resources/zipcodes.csv")
df.printSchema()
```

Using fully qualified data source name, you can alternatively do the following.

```
df = spark.read.format("csv")
    .load("/tmp/resources/zipcodes.csv")

// or
df = spark.read.format("org.apache.spark.sql.csv")
    .load("/tmp/resources/zipcodes.csv")
df.printSchema()
```

This example reads the data into DataFrame columns "\_c0" for the first column and "\_c1" for the second and so on. and by default data type for all these columns is treated as String.

```
root
|-- _c0: string (nullable = true)
|-- _c1: string (nullable = true)
|-- _c2: string (nullable = true)
```

## 1.1 Using Header Record For Column Names

If you have a header with column names on your input file, you need to explicitly specify True for header option using [option\("header", True\)](#) not mentioning this, the API treats header as a data record.

[\(https://sparkbyexamples.com/pyspark/pyspark-sampling-example/\)](https://sparkbyexamples.com/pyspark/pyspark-sampling-example/)

[PySpark – fillna\(\) & fill\(\)  
\(https://sparkbyexamples.com/pyspark/pyspark-fillna-fill-replace-null-values/\)](https://sparkbyexamples.com/pyspark/pyspark-fillna-fill-replace-null-values/)

[PySpark – pivot\(\)\\_\(Row to Column\)  
\(https://sparkbyexamples.com/pyspark/pyspark-pivot-and-unpivot-dataframe/\)](https://sparkbyexamples.com/pyspark/pyspark-pivot-and-unpivot-dataframe/)

[PySpark – partitionBy\(\).  
\(https://sparkbyexamples.com/pyspark/pyspark-partitionby-example/\)](https://sparkbyexamples.com/pyspark/pyspark-partitionby-example/)

[PySpark – ArrayType Column \(Array\).  
\(https://sparkbyexamples.com/pyspark/pyspark-arraytype-column-with-examples/\)](https://sparkbyexamples.com/pyspark/pyspark-arraytype-column-with-examples/)

[PySpark – MapType \(Map/Dict\).  
\(https://sparkbyexamples.com/pyspark/pyspark-maptype-dict-examples/\)](https://sparkbyexamples.com/pyspark/pyspark-maptype-dict-examples/)

## PySpark SQL Functions

[PySpark – Aggregate Functions  
\(https://sparkbyexamples.com/pyspark/pyspark-aggregate-functions/\)](https://sparkbyexamples.com/pyspark/pyspark-aggregate-functions/)

[PySpark – Window Functions  
\(https://sparkbyexamples.com/pyspark/pyspark-window-functions/\)](https://sparkbyexamples.com/pyspark/pyspark-window-functions/)

[PySpark – Date and Timestamp Functions  
\(https://sparkbyexamples.com/pyspark/pyspark-sql-date-and-timestamp-functions/\)](https://sparkbyexamples.com/pyspark/pyspark-sql-date-and-timestamp-functions/)

[PySpark – JSON Functions  
\(https://sparkbyexamples.com/pyspark/pyspark-json-functions-with-examples/\)](https://sparkbyexamples.com/pyspark/pyspark-json-functions-with-examples/)

## PySpark Datasources

[PySpark – Read & Write CSV File  
\(https://sparkbyexamples.com/pyspark/pyspark-read-csv-file-into-dataframe/\)](https://sparkbyexamples.com/pyspark/pyspark-read-csv-file-into-dataframe/)

[PySpark – Read & Write Parquet File  
\(https://sparkbyexamples.com/pyspark/pyspark-read-write-parquet-file/\)](https://sparkbyexamples.com/pyspark/pyspark-read-write-parquet-file/)

```
df2 = spark.read.option("header", true) \
    .csv("/tmp/resources/zipcodes.csv")
```

As mentioned earlier, PySpark reads all columns as a string (StringType) by default. I will explain in later sections on how to read the schema (inferred schema) from the header record and derive the column type based on the data.

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## 1.2 Read Multiple CSV Files

Using the `read.csv()` method you can also read multiple csv files, just pass all file names by separating comma as a path, for example :

```
df = spark.read.csv("path1,path2,path3")
```

## 1.3 Read all CSV Files in a Directory

We can read all CSV files from a directory into DataFrame just by passing directory as a path to the `csv()` method.

```
df = spark.read.csv("Folder path")
```

## 2. Options While Reading CSV File

[pyspark/pyspark-read-and-write-parquet-file/](#)

[PySpark – Read & Write JSON file](#)  
(<https://sparkbyexamples.com/pyspark/pyspark-read-json-file-into-dataframe/>)

## PySpark Built-In Functions

[PySpark – when\(\)](#)  
(<https://sparkbyexamples.com/pyspark/pyspark-when-otherwise/>)

[PySpark – expr\(\)](#)  
(<https://sparkbyexamples.com/pyspark/pyspark-sql-expr-expression-function/>)

[PySpark – lit\(\)](#)  
(<https://sparkbyexamples.com/pyspark/pyspark-lit-add-literal-constant/>)

[PySpark – split\(\)](#)  
(<https://sparkbyexamples.com/pyspark/pyspark-convert-string-to-array-column/>)

[PySpark – concat\\_ws\(\)](#)  
(<https://sparkbyexamples.com/pyspark/pyspark-convert-array-column-to-string-column/>)

[Pyspark – substring\(\)](#)  
(<https://sparkbyexamples.com/pyspark/pyspark-substring-from-a-column/>)

[PySpark – translate\(\)](#)  
(<https://sparkbyexamples.com/pyspark/pyspark-replace-column-values/#translate-replace-character-by-character>)

[PySpark – regexp\\_replace\(\)](#)  
([https://sparkbyexamples.com/pyspark/pyspark-replace-column-values/#regexp\\_replace-replace-string-columns](https://sparkbyexamples.com/pyspark/pyspark-replace-column-values/#regexp_replace-replace-string-columns))

[PySpark – overlay\(\)](#)  
(<https://sparkbyexamples.com/pyspark/pyspark-replace-column-values/#overlay-function>)

[PySpark – to\\_timestamp\(\)](#)  
(<https://sparkbyexamples.com/spark/pyspark-to-timestamp->

PySpark CSV dataset provides multiple options to work with CSV files. Below are some of the most important options explained with examples.

You can either use chaining `option(self, key, value)` to use multiple options or use alternate `options(self, **options)` method.

## 2.1 delimiter

`delimiter` option is used to specify the column delimiter of the CSV file. By default, it is **comma (,)** character, but can be set to any character like **pipe(|)**, **tab (\t)**, **space** using this option.

```
df3 = spark.read.options(delimiter='|')  
      .csv("C:/apps/sparkbyexamples/CSV/employees.csv")
```

## 2.2 inferSchema

The default value set to this option is `False` when setting to `true` it automatically infers column types based on the data. Note that, it requires reading the data one more time to infer the schema.

```
df4 = spark.read.options(inferSchema='true')  
      .csv("src/main/resources/zipcodes.csv")
```

Alternatively you can also write this by chaining `option()` method.

```
df4 = spark.read.option("inferSchema", "true")  
      .option("delimiter", "|")  
      .csv("src/main/resources/zipcodes.csv")
```

## 2.3 header

This option is used to read the first line of the CSV file as column names. By default the value of this option

[convert-string-to-timestamp-type/](#)

[PySpark – to\\_date\(\) \(https://sparkbyexamples.com/pyspark/pyspark-to\\_date-convert-timestamp-to-date/\)](#)

[PySpark – date\\_format\(\) \(https://sparkbyexamples.com/pyspark/pyspark-date\\_format-convert-date-to-string-format/\)](#)

[PySpark – datediff\(\) \(https://sparkbyexamples.com/pyspark/pyspark-difference-between-two-dates-days-months-years/#datediff\)](#)

[PySpark – months\\_between\(\) \(https://sparkbyexamples.com/pyspark/pyspark-difference-between-two-dates-days-months-years/#months\\_between\(\)\)](#)

[PySpark – explode\(\) \(https://sparkbyexamples.com/pyspark/pyspark-explode-nested-array-into-rows/\)](#)

[PySpark – array\\_contains\(\) \(https://sparkbyexamples.com/pyspark/pyspark-arraytype-column-with-examples/#array\\_contains\)](#)

[PySpark – array\(\) \(https://sparkbyexamples.com/pyspark/pyspark-arraytype-column-with-examples/#array\)](#)

[PySpark – collect\\_list\(\) \(https://sparkbyexamples.com/pyspark/pyspark-aggregate-functions/#collect-list\)](#)

[PySpark – collect\\_set\(\) \(https://sparkbyexamples.com/pyspark/pyspark-aggregate-functions/#collect-set\)](#)

[PySpark – create\\_map\(\) \(https://sparkbyexamples.com/pyspark/pyspark-convert-dataframe-columns-to-maptype-dict/\)](#)

[PySpark – map\\_keys\(\) \(https://sparkbyexamples.com/pyspark/pyspark-maptype-dict-examples/#map\\_keys\)](#)

[PySpark – map\\_values\(\) \(https://sparkbyexamples.com/pyspark/pyspark-maptype-dict-examples/#map\\_values\)](#)

is False , and all column types are assumed to be a string.

```
df3 = spark.read.options(header='true', delimiter=';',  
    .csv("/tmp/resources/zipcodes
```

## 2.4 quotes

When you have a column with a delimiter that used to split the columns, use quotes option to specify the quote character, by default it is " and delimiters inside quotes are ignored. but using this option you can set any character.

## 2.5 nullValues

Using nullValues option you can specify the string in a CSV to consider as null. For example, if you want to consider a date column with a value "1900-01-01" set null on DataFrame.

## 2.6 dateFormat

dateFormat option is used to set the format of the input [DateType](#) ([https://sparkbyexamples.com/pyspark/pyspark-sql-date-and-timestamp-functions/#pyspark-sql-date-functions](#)) and [TimestampType](#) ([https://sparkbyexamples.com/pyspark/pyspark-sql-date-and-timestamp-functions/#pyspark-sql-timestamp-functions](#)) columns. Supports all java.text.SimpleDateFormat formats.

**Note:** Besides the above options, PySpark CSV API also supports many other options, [please refer to this article for details](#) ([https://docs.databricks.com/data/data-sources/read-csv.html](#)).

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[PySpark – struct\(\).](https://sparkbyexamples.com/pyspark/pyspark-structtype-and-structfield/#update-struct-function)  
(<https://sparkbyexamples.com/pyspark/pyspark-structtype-and-structfield/#update-struct-function>)

[PySpark – countDistinct\(\).](https://sparkbyexamples.com/pyspark/pyspark-count-distinct-from-dataframe/)  
(<https://sparkbyexamples.com/pyspark/pyspark-count-distinct-from-dataframe/>)

[PySpark – sum\(\).avg\(\).](https://sparkbyexamples.com/pyspark/pyspark-dataframe-groupby-and-sort-by-descending-order/)  
(<https://sparkbyexamples.com/pyspark/pyspark-dataframe-groupby-and-sort-by-descending-order/>)

[PySpark – row\\_number\(\).](https://sparkbyexamples.com/pyspark/pyspark-window-functions/#row_number)  
([https://sparkbyexamples.com/pyspark/pyspark-window-functions/#row\\_number](https://sparkbyexamples.com/pyspark/pyspark-window-functions/#row_number))

[PySpark – rank\(\).](https://sparkbyexamples.com/pyspark/pyspark-window-functions/#rank)  
(<https://sparkbyexamples.com/pyspark/pyspark-window-functions/#rank>)

[PySpark – dense\\_rank\(\).](https://sparkbyexamples.com/pyspark/pyspark-window-functions/#dense_rank)  
([https://sparkbyexamples.com/pyspark/pyspark-window-functions/#dense\\_rank](https://sparkbyexamples.com/pyspark/pyspark-window-functions/#dense_rank))

[PySpark – percent\\_rank\(\).](https://sparkbyexamples.com/pyspark/pyspark-window-functions/#percent_rank)  
([https://sparkbyexamples.com/pyspark/pyspark-window-functions/#percent\\_rank](https://sparkbyexamples.com/pyspark/pyspark-window-functions/#percent_rank))

[PySpark – typedLit\(\).](https://sparkbyexamples.com/pyspark/pyspark-lit-add-literal-constant/#typedlit)  
(<https://sparkbyexamples.com/pyspark/pyspark-lit-add-literal-constant/#typedlit>)

[PySpark – from\\_json\(\).](https://sparkbyexamples.com/pyspark/pyspark-json-functions-with-examples/#from_json)  
([https://sparkbyexamples.com/pyspark/pyspark-json-functions-with-examples/#from\\_json](https://sparkbyexamples.com/pyspark/pyspark-json-functions-with-examples/#from_json))

[PySpark – to\\_json\(\).](https://sparkbyexamples.com/pyspark/pyspark-json-functions-with-examples/#to_json)  
([https://sparkbyexamples.com/pyspark/pyspark-json-functions-with-examples/#to\\_json](https://sparkbyexamples.com/pyspark/pyspark-json-functions-with-examples/#to_json))

[PySpark – json\\_tuple\(\).](https://sparkbyexamples.com/pyspark/pyspark-json-functions-with-examples/#json_tuple)  
([https://sparkbyexamples.com/pyspark/pyspark-json-functions-with-examples/#json\\_tuple](https://sparkbyexamples.com/pyspark/pyspark-json-functions-with-examples/#json_tuple))

[PySpark – get\\_json\\_object\(\).](https://sparkbyexamples.com/pyspark/pyspark-json-functions-with-examples/#get_json_object)  
([https://sparkbyexamples.com/pyspark/pyspark-json-functions-with-examples/#get\\_json\\_object](https://sparkbyexamples.com/pyspark/pyspark-json-functions-with-examples/#get_json_object))

[PySpark – schema\\_of\\_json\(\).](https://sparkbyexamples.com/pyspark/pyspark-json-functions-with-examples/#schema_of_json)  
([https://sparkbyexamples.com/pyspark/pyspark-json-functions-with-examples/#schema\\_of\\_json](https://sparkbyexamples.com/pyspark/pyspark-json-functions-with-examples/#schema_of_json))

### 3. Reading CSV files with a user-specified custom schema

If you know the schema of the file ahead and do not want to use the inferSchema option for column names and types, use [user-defined custom column names and type](https://sparkbyexamples.com/pyspark/pyspark-structtype-and-structfield/) (<https://sparkbyexamples.com/pyspark/pyspark-structtype-and-structfield/>) using schema option.

```
schema = StructType() \
    .add("RecordNumber", IntegerType()) \
    .add("Zipcode", IntegerType()) \
    .add("ZipCodeType", StringType()) \
    .add("City", StringType()) \
    .add("State", StringType()) \
    .add("LocationType", StringType()) \
    .add("Lat", DoubleType()) \
    .add("Long", DoubleType()) \
    .add("Xaxis", IntegerType()) \
    .add("Yaxis", DoubleType()) \
    .add("Zaxis", DoubleType()) \
    .add("WorldRegion", StringType()) \
    .add("Country", StringType()) \
    .add("LocationText", StringType()) \
    .add("Location", StringType()) \
    .add("Decommisioned", BooleanType()) \
    .add("TaxReturnsFiled", StringType()) \
    .add("EstimatedPopulation", IntegerType()) \
    .add("TotalWages", IntegerType()) \
    .add("Notes", StringType())

df_with_schema = spark.read.format("csv") \
    .option("header", True) \
    .schema(schema) \
    .load("/tmp/resources/zipcodes.csv")
```

### 4. Applying DataFrame transformations

Once you have created DataFrame from the CSV file, you can apply all transformation and actions DataFrame support. Please refer to the link for more details.



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## 5. Write PySpark

### DataFrame to CSV file

Use the `write()` method of the PySpark `DataFrameWriter` object to write PySpark `DataFrame` to a CSV file.

```
df.write.option("header", True)
    .csv("/tmp/spark_output/zipcode")
```

#### 5.1 Options

While writing a CSV file you can use several options. for example, `header` to output the `DataFrame` column names as header record and `delimiter` to specify the delimiter on the CSV output file.

```
df2.write.options(header='True'
    .csv("/tmp/spark_output/zipcode")
```

Other options

available `quote`, `escape`, `nullValue`, `dateFormat`, `quoteMode` .

#### 5.2 Saving modes

PySpark `DataFrameWriter` also has a method `mode()` to specify saving mode.

`overwrite` – mode is used to overwrite the existing file.

`append` – To add the data to the existing file.

`ignore` – Ignores write operation when the file already exists.

`error` – This is a default option when the file already exists, it returns an error.



```
df2.write.mode('overwrite').csv  
//you can also use this  
df2.write.format("csv").mode('o
```

## 6. PySpark Read CSV

### Complete Example

```

import pyspark
from pyspark.sql import SparkSession
from pyspark.sql.types import StructType, StructField
from pyspark.sql.types import ArrayType, StringType, IntegerType
from pyspark.sql.functions import col

spark = SparkSession.builder.appName("Zipcode").getOrCreate()

df = spark.read.csv("/tmp/resources/zipcodes.csv")

df.printSchema()

df2 = spark.read.option("header", True) \
    .csv("/tmp/resources/zipcodes.csv")
df2.printSchema()

df3 = spark.read.options(headers="true") \
    .csv("/tmp/resources/zipcodes.csv")
df3.printSchema()

schema = StructType() \
    .add("RecordNumber", IntegerType()) \
    .add("Zipcode", IntegerType()) \
    .add("ZipCodeType", StringType()) \
    .add("City", StringType()) \
    .add("State", StringType()) \
    .add("LocationType", StringType()) \
    .add("Lat", DoubleType(), True) \
    .add("Long", DoubleType(), True) \
    .add("Xaxis", IntegerType()) \
    .add("Yaxis", DoubleType()) \
    .add("Zaxis", DoubleType()) \
    .add("WorldRegion", StringType()) \
    .add("Country", StringType()) \
    .add("LocationText", StringType()) \
    .add("Location", StringType()) \
    .add("Decommisioned", BooleanType()) \
    .add("TaxReturnsFiled", StringType()) \
    .add("EstimatedPopulation", IntegerType()) \
    .add("TotalWages", IntegerType()) \
    .add("Notes", StringType())

df_with_schema = spark.read.format("csv") \
    .option("header", True) \
    .schema(schema) \
    .load("/tmp/resources/zipcodes.csv")
df_with_schema.printSchema()

df2.write.option("header", True) \
    .csv("/tmp/spark_output/zipcodes.csv")

```

## 7. Conclusion:

In this tutorial, you have learned how to read a CSV file, multiple CSV files and all files from a local folder into PySpark DataFrame, using multiple options to change the default behavior and write CSV files back to DataFrame using different save options.

Happy Learning !!

## References:

- [Databricks read CSV](https://docs.databricks.com/data/data-sources/read-csv.html)  
(<https://docs.databricks.com/data/data-sources/read-csv.html>)
- [PySpark CSV library](https://github.com/databricks/spark-csv)  
(<https://github.com/databricks/spark-csv>)

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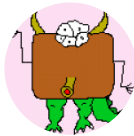
**NNK**

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**Anonymous**

18 APR 2021 [REPLY](#)

where is zipcode CSV file ?



**NNK**

18 APR 2021 [REPLY](#)

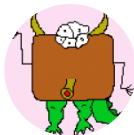
You can find it at [zipcodes.csv @ GitHub](#) (<https://github.com/spark-examples/pyspark-examples/blob/master/resources/zipcodes.csv>).



**Anonymous**

11 FEB 2021 [REPLY](#)

Really very helpful pyspark example..Thanks for the details!!



**Anonymous**

5 JAN 2021 [REPLY](#)

Very much helpful!! Thank you for the article!!

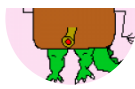


**NNK**

5 JAN 2021 [REPLY](#)

Thank you!!





**Anonymous**

2 NOV 2020 [REPLY](#)

Thank you so much for  
this article 😊



**NNK** 2 NOV 2020 [REPLY](#)

Glad you like it.



**Anonymous**

19 SEP 2020 [REPLY](#)

Thanks for the example.  
could you please explain  
how to define/initialise  
the “spark” in the above  
example (e.g.  
spark.read.csv)?

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