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PySpark Tutorial	
PySpark Tutorial For Beginners (https://sparkbyexamples.com/, pyspark-tutorial/)	PySpark (https://sparkbyexamples.com/pyspark- utorial/)
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<u>PySpark – Advantages</u> (https://sparkbyexamples.com/ pyspark-tutorial/#advantages)	Delicious Cakes Ferns N Petals
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<u>PySpark – Cluster Managers</u>	Kafka (https://sparkbyexamples.com/apache- (https://sparkbyexamples.com/author/admin/).
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PySpark – Web/Application UI (https://sparkbyexamples.com/spark/spark-web-ui-understanding/)	query or extract the elements from JSON string of DataFrame column by uestionsalh, convert it to struct, mapt type e.t.c, In this article, I will explain the
PySpark - SparkSession (https://sparkbyexamples.com/ pyspark/pyspark-what-is- sparksession/)	most used JSON SQL functions with More "Pythothpexamples.com/)
<u>PySpark – RDD</u> (https://sparkbyexamples.com/ pyspark-rdd)	
PySpark – Parallelize (https://sparkbyexamples.com/ pyspark/pyspark-parallelize- create-rdd/)	LinkedIn ad
PySpark - repartition() vs coalesce() (https://sparkbyexamples.com/ pyspark/pyspark-repartition- vs-coalesce/)	1. PySpark JSON

Functions

PySpark - Broadcast

(https://sparkbyexamples.com/

<u>pyspark/pyspark-broadcast-</u>

<u>Variables</u>

variables/)

from_json() - Converts JSON string into Struct type or Map type.

<u>PySpark – Accumulator</u> (https://sparkbyexamples.com/ <u>pyspark/pyspark-accumulator-with-example/)</u>

PySpark DataFrame

PySpark – Create a

DataFrame
(https://sparkbyexamples.com/

<u>pyspark/different-ways-to-create-dataframe-in-pyspark/)</u>

<u>PySpark – Create an empty</u> <u>DataFrame</u>

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<u>PySpark – show()</u>
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<u>pyspark/pyspark-show-display-</u>
dataframe-contents-in-table/)

<u>PySpark – StructType &</u>
<u>StructField</u>
(https://sparkbyexamples.com/pyspark/pyspark-structtype-and-structfield/)

<u>PySpark – Row Class</u> (<u>https://sparkbyexamples.com/pyspark/pyspark-row-using-rdd-dataframe/)</u>

<u>PySpark – Column Class</u> (https://sparkbyexamples.com/ <u>pyspark/pyspark-column-</u> functions/)

<u>PySpark – select()</u>
(https://sparkbyexamples.com/
pyspark/select-columns-frompyspark-dataframe/)

<u>PySpark – collect()</u>
(https://sparkbyexamples.com/
pyspark/pyspark-collect/)

<u>PySpark – withColumn()</u> (https://sparkbyexamples.com/ pyspark/pyspark-withcolumn/) to_json() - Converts MapType or Struct
type to JSON string.

json_tuple() - Extract the Data from JSON and create them as a new columns.

get_json_object() - Extracts JSON
element from a JSON string based on
json path specified.

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schema_of_json() - Create schema
string from JSON string

1.1. Create DataFrame with Column contains JSON String

In order to explain these JSON functions first, let's create DataFrame with a column contains JSON string.

2. PySpark JSON

Functions Examples

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pyspark/pyspark-renamedataframe-column/)

<u>PySpark – where() & filter()</u> (https://sparkbyexamples.com/ pyspark/pyspark-where-filter/)

PySpark – drop() & dropDuplicates() (https://sparkbyexamples.com/pyspark/pyspark-distinct-to-drop-duplicates/)

<u>PySpark – orderBy() and sort()</u> (https://sparkbyexamples.com/ <u>pyspark/pyspark-orderby-and-</u> sort-explained/)

PySpark — groupBy() (https://sparkbyexamples.com/ pyspark/pyspark-groupbyexplained-with-example/)

<u>PySpark – join()</u>
(https://sparkbyexamples.com/
<u>pyspark/pyspark-join-</u>
explained-with-examples/)

<u>PySpark – union() & unionAll()</u> (https://sparkbyexamples.com/ <u>pyspark/pyspark-union-and-unionall/)</u>

<u>PySpark – unionByName()</u>
(https://sparkbyexamples.com/
spark/spark-merge-twodataframes-with-differentcolumns/)

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

<u>PySpark – map()</u> (https://sparkbyexamples.com/ <u>pyspark/pyspark-map-</u> transformation/)

<u>PySpark – flatMap()</u>
(<u>https://sparkbyexamples.com/pyspark/pyspark-flatmap-</u>
transformation/)

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

<u>PySpark – sample() vs</u> <u>sampleBy()</u>

2.1. from_json()

PySpark from_json() function is used to convert JSON string into Struct type or Map type. The below example converts JSON string to Map key-value pair. I will leave it to you to convert to struct type. Refer, Convert JSON string to Struct type column (https://sparkbyexamples.com/spark/spark-from_json-convert-json-column-to-struct-map-or-multiple-columns/).

2.2. to_json()

to_json() function is used to convert DataFrame columns MapType or Struct type to JSON string. Here, I am using df2 that created from above from_json() example.

(https://sparkbyexamples.com/ pyspark/pyspark-samplingexample/)

PySpark – fillna() & fill() (https://sparkbyexamples.com/ pyspark/pyspark-fillna-fillreplace-null-values/)

<u>PySpark – pivot() (Row to</u>
<u>Column)</u>
(https://sparkbyexamples.com/

pyspark/pyspark-pivot-andunpivot-dataframe/)

<u>PySpark – partitionBy()</u>
(https://sparkbyexamples.com/
<u>pyspark/pyspark-partitionby-example/)</u>

<u>PySpark – ArrayType Column</u> (Array)

(https://sparkbyexamples.com/ pyspark/pyspark-arraytypecolumn-with-examples/)

<u>PySpark – MapType</u>
(<u>Map/Dict)</u>
(<u>https://sparkbyexamples.com/pyspark/pyspark-maptype-dictexamples/)</u>

PySpark SQL Functions

<u>PySpark – Aggregate Functions</u> (<u>https://sparkbyexamples.com/pyspark/pyspark-aggregate-functions/</u>)

<u>PySpark – Window Functions</u> (<u>https://sparkbyexamples.com/pyspark/pyspark-window-functions/</u>)

<u>PySpark – Date and Timestamp</u> <u>Functions</u>

(https://sparkbyexamples.com/py spark/pyspark-sql-date-andtimestamp-functions/)

<u>PySpark – JSON Functions</u> (<u>https://sparkbyexamples.com/pyspark/pyspark-json-functions-with-examples/</u>)

PySpark Datasources

<u>PySpark – Read & Write CSV</u> <u>File</u>

(https://sparkbyexamples.com/ pyspark/pyspark-read-csv-fileinto-dataframe/)

<u>PySpark – Read & Write</u> <u>Parquet File</u> (https://sparkbyexamples.com/

2.3. json_tuple()

Function json_tuple() is used the query or extract the elements from JSON column and create the result as a new columns.

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2.4. get_json_object()

get_json_object() is used to extract
the JSON string based on path from the
JSON column.

2.5. schema_of_json()

<u>pyspark/pyspark-read-and-write-parquet-file/)</u>

<u>PySpark – Read & Write JSON</u>

(https://sparkbyexamples.com/ pyspark/pyspark-read-jsonfile-into-dataframe/)

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Complete Example of Spark JSON Functions



rom pyspark.sql import SparkSe
park = SparkSession.builder.ap

sonString="""{"Zipcode":704,"Z F=spark.createDataFrame([(1, j F.show(truncate=False)

convert JSON string column to Income pyspark.sql.types import Marom pyspark.sql.functions import S2=df.withColumn("value",from_granger; from_granger; from_g

rom pyspark.sql.functions import
f2.withColumn("value",to_json("
 .show(truncate=False)

rom pyspark.sql.functions impo
f.select(col("id"),json_tuple(
 .toDF("id","Zipcode","ZipCoc.
 .show(truncate=False)

rom pyspark.sql.functions impo
f.select(col("id"),get_json_ob
 .show(truncate=False)

from pyspark.sql.functions impo
schemaStr=spark.range(1) \
 .select(schema_of_json(lit(
 .collect()[0][0]
print(schemaStr)

PySpark Built-In Functions

<u>PySpark – when()</u> (https://sparkbyexamples.com/py spark/pyspark-when-otherwise/)</u>

PySpark - expr() (https://sparkbyexamples.com/py spark/pyspark-sql-exprexpression-function/)

References

PySpark - lit()

(https://sparkbyexamples.com/py spark/pyspark-lit-add-literalconstant/)

PySpark - split()

(https://sparkbyexamples.com/py spark/pyspark-convert-string-toarray-column/)

PySpark – concat_ws()
(https://sparkbyexamples.com/py
spark/pyspark-convert-arraycolumn-to-string-column/)

<u>Pyspark – substring()</u>
(https://sparkbyexamples.com/py
spark/pyspark-substring-from-a-column/)

PySpark – translate() (https://sparkbyexamples.com/py spark/pyspark-replace-columnvalues/#translate-replacecharacter-by-character)

PySpark - regexp_replace()
(https://sparkbyexamples.com/py
spark/pyspark-replace-columnvalues/#regexp_replace-replacestring-columns)

PySpark – overlay() (https://sparkbyexamples.com/py spark/pyspark-replace-columnvalues/#overlay-function)

PySpark – to timestamp()
(https://sparkbyexamples.com/spark/pyspark-to_timestampconvert-string-to-timestamptype/)

PySpark – to_date() (https://sparkbyexamples.com/py spark/pyspark-to_date-converttimestamp-to-date/)

PySpark – date_format() (https://sparkbyexamples.com/py spark/pyspark-date_formatconvert-date-to-string-format/)

PySpark – datediff() (https://sparkbyexamples.com/py spark/pyspark-differencebetween-two-dates-daysmonths-years/#datediff)

PySpark – months_between()
(https://sparkbyexamples.com/py
spark/pyspark-differencebetween-two-dates-daysmonthsyears/#months_between())

 https://spark.apache.org/docs/latest/ api/java/org/apache/spark/sql/functions.html (https://spark.apache.org/docs/latest/api/java/org/apache/spark/sql/functions.html)

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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).

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<u>PySpark - collect_set()</u>
(https://sparkbyexamples.com/pyspark/pyspark-aggregate-functions/#collect-set)</u>

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PySpark - map_values() (https://sparkbyexamples.com/py spark/pyspark-maptype-dictexamples/#map_values)

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PySpark – countDistinct() (https://sparkbyexamples.com/py spark/pyspark-count-distinctfrom-dataframe/)

PySpark – sum(), avg() (https://sparkbyexamples.com/py spark/pyspark-dataframegroupby-and-sort-bydescending-order/)

<u>PySpark – row_number()</u>
(https://sparkbyexamples.com/py
spark/pyspark-windowfunctions/#row_number)

PySpark - rank() (https://sparkbyexamples.com/py spark/pyspark-windowfunctions/#rank) PySpark – dense_rank()
(https://sparkbyexamples.com/py
spark/pyspark-windowfunctions/#dense_rank)

PySpark – percent rank()
(https://sparkbyexamples.com/py
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PySpark – from_json() (https://sparkbyexamples.com/pyspark/pyspark-json-functions-with-examples/#from_json)

PySpark – to_json()
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spark/pyspark-json-functionswith-examples/#to_json)

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

<u>PySpark – get json object()</u>
(https://sparkbyexamples.com/pyspark/pyspark-json-functions-with-examples/#get json object)</u>

PySpark – schema_of_json() (https://sparkbyexamples.com/py spark/pyspark-json-functionswithexamples/#schema_of_json).

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