PySpark Tutorial

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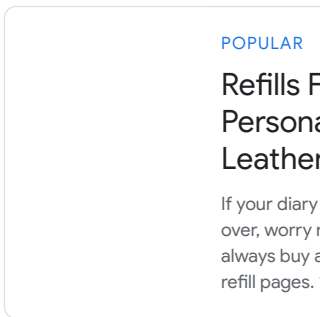
PySpark lit() – Add Literal or Constant to DataFrame

NNK (https://sparkbyexamples.com/author/admin/) -

PySpark (https://sparkbyexamples.com/category/pyspark/)

PySpark SQL functions lit() and typedLit() are used to add a new column to DataFrame by assigning a literal or constant value. Both these functions return Column type (https://sparkbyexamples.com/pyspark/pyspark-column-functions/) as return type.



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Both of these are available in PySpark by importing `pyspark.sql.functions`

First, let's create a DataFrame.

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PySpark – orderBy() and sort() (https://sparkbyexamples.com/py

```
import pyspark
from pyspark.sql import SparkSessic

spark = SparkSession.builder.appNam
data = [("111",50000),("222",60000)
columns= ["EmpId","Salary"]
df = spark.createDataFrame(data = c
```

lit() Function to Add Constant Column

PySpark lit() function is used to add constant or literal value as a new column to the DataFrame.

> *Creates a [[Column]] of literal value. The passed in object is returned directly if it is already a [[Column]]. If the object is a Scala Symbol, it is converted into a [[Column]] also. Otherwise, a new [[Column]] is created to represent the literal value*

Let's take a look at some examples.

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Example 1: Simple usage of lit() function

Let's see an example of how to create a new column with constant value using lit() Spark SQL function (https://sparkbyexamples.com/spark/spark-sql-functions-understanding/). On the below snippet, we are creating a new column by adding a literal '1' to PySpark DataFrame.

```
from pyspark.sql.functions import c
df2 = df.select(col("EmpId"),col("S
df2.show(truncate=False)
```

spark/pyspark-orderby-and-sort-explained/)

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

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

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

```
+-----+------+----------+
|EmpId|Salary|lit_value1|
+-----+------+----------+
|  111| 50000|         1|
|  222| 60000|         1|
|  333| 40000|         1|
+-----+------+----------+
```

Adding the same constant literal to all records in DataFrame may not be real-time useful so let's see another example.

Example 2 : lit() function with withColumn

The following example shows how to use pyspark `lit()` function using withColumn to derive a new column based on some conditions.

```
from pyspark.sql.functions import w
df3 = df2.withColumn("lit_value2",
df3.show(truncate=False)
```

Below is the output for the above code snippet.

```
+-----+------+----------+----------
|EmpId|Salary|lit_value1|lit_value2
+-----+------+----------+----------
|  111| 50000|         1|       100
|  222| 60000|         1|       200
|  333| 40000|         1|       100
+-----+------+----------+----------
```

typedLit() Function – Syntax

Difference between `lit()` and `typedLit()` is that, typedLit function can handle collection types e.g.: Array, Dictionary(map) e.t.c

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

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Complete Example of How to Add Constant Column

```
import pyspark
from pyspark.sql import SparkSessio

spark = SparkSession.builder.appNam
data = [("111",50000),("222",60000)
columns= ["EmpId","Salary"]
df = spark.createDataFrame(data = d
df.printSchema()
df.show(truncate=False)

from pyspark.sql.functions import c
df2 = df.select(col("EmpId"),col("S
df2.show(truncate=False)
from pyspark.sql.functions import w
df3 = df2.withColumn("lit_value2",
df3.show(truncate=False)
```

Conclusion:

You have learned multiple ways to add a onstant literal value to DataFrame using ySpark lit() function and have learned the ifference between lit and typedLit nctions.

/hen possible try to use predefined ySpark functions as they are a little bit ore compile-time safety and perform etter when compared to user-defined nctions. If your application is critical on erformance try to avoid using custom UDF functions as these are not guarantee on performance.

Happy Learning !!

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PySpark – regexp_replace() (https://sparkbyexamples.com/pyspark/pyspark-replace-column-

values/#regexp_replace-replace-string-columns)

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