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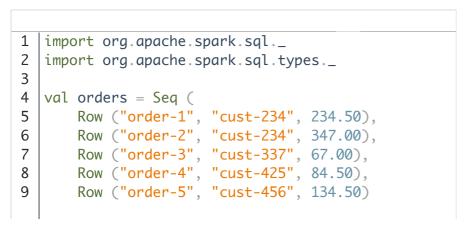
04: Spark on Zeppelin - DataFrame joins in Scala

04: Spark on Zeppelin – DataFrame joins in Scala



This tutorial extends the series: Spark on Apache Zeppelin Tutorials.

1. Create "Orders" DataFrame



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TUT - Starting Spark & Scala

```
10 |
11
12
  |val orderSchema = List(
     StructField("order_num", StringType, true),
13
14
     StructField("customer_num", StringType, true),
     StructField("amount", DoubleType, true)
15
16
17
18 | val ordersDf = spark.createDataFrame(sc.paralleliz
19
20 ordersDf.show()
21
```

```
1
2
3
  |order_num|customer_num|amount|
4
  +-----
5
  | order-1| cust-234| 234.5|
6
  | order-2|
              cust-234| 347.0|
7
  order-3
              cust-337| 67.0|
8
     order-4
               cust-425| 84.5|
9
     order-5|
               cust-456| 134.5|
10
11
```

2. Create "Customers" DataFrame

```
import org.apache.spark.sql._
2
    import org.apache.spark.sql.types._
3
4
   val customers = Seq (
        Row ("cust-234", "John"),
Row ("cust-239", "Peter"),
5
6
        Row ("cust-337", "Samuel"),
Row ("cust-425", "Jordan"),
Row ("cust-456", "George")
7
8
9
10 )
11
12 | val customerSchema = List(
      StructField("customer_num", StringType, true),
13
      StructField("customer_name", StringType, true)
14
15
    )
16
17
    val customersDf = spark.createDataFrame(sc.paralle
18
19 customersDf.show()
20
```

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|customer_num|customer_name|

1

2

3

```
5
                           John |
        cust-234
6
        cust-239
                          Peter
7
        cust-337
                         Samuel
8
                         Jordan
        cust-425
9
        cust-456
                         George
10
11
```

You can perform a number of joins between DataFrames. Default is the inner join. Joins can be of: inner, cross, outer, full, full_outer, left_left_outer, right, right_outer, left_semi, left_anti.

3. inner join of two DataFrames

Customers and their orders.

```
val dfJoined = ordersDf.join(customersDf, ordersDf
2
                         .select(customersDf.col("cus
3
 dfJoined.show()
4
1
2
3
   |customer_num|customer_name|order_num|amount|
4
5
                        Samuel | order-3| 67.0|
        cust-337|
6
        cust-234
                          John
                                 order-1| 234.5|
7
        cust-234
                          John| order-2| 347.0|
8
        cust-456
                        George
                                 order-5| 134.5|
9
                        Jordan|
        cust-425
                                 order-4| 84.5|
10
11
```

4. leftanti join

Customers who do not have any orders.

```
1 val dfJoined = customersDf.join(ordersDf, ordersDf
2 dfJoined.show()
3
```

5. left join

```
1 | val dfJoined = customersDf.join(ordersDf, ordersDf
2
3 | dfJoined.show()
1
2
3
   |customer_num|customer_name|order_num|customer_num
4
                        Samuel | order-3 | cust-337
John | order-1 | cust-234
John | order-2 | cust-234
5
        cust-337
6
        cust-234|
7
        cust-234|
8
        cust-239|
                         Peter| null|
                                                 nul
                                               cust-450
9
        cust-456
                        Georgel order-51
        cust-425| Jordan| order-4| cust-425
10
11
12
```

5. leftsemi join

Customers who have orders.

```
1 | val dfJoined = customersDf.join(ordersDf, ordersDf
2
3 dfJoined.show()
1
2
3
  |customer_num|customer_name|
4
5
       cust-337|
                       Samuel |
       cust-234|
6
                        John
7
       cust-456
                       George
        cust-425|
8
                       Jordan
9
10
```

03: Spark on Zeppelin – DataFrame Operations in Scala

05: Spark on Zeppelin – semi-structured log file >>

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