# **Ejercicios de RDDs**

## Lectura de archivos

- 1. Lee todos los archivos de texto de un directorio en un único RDD.
  - En Scala:

```
import org.apache.spark.sql.SparkSession
 // Crear una SparkSession
 val spark = SparkSession.builder
   .appName("LecturaArchivos")
   .getOrCreate()
 // Leer los archivos de texto en el directorio especificado
 val data = rdd.collect()
 data.foreach(println)
▶ (1) Spark Jobs
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import org.apache.spark.sql.SparkSession
spark: org.apache.spark.sql.SparkSession = org.apache.spark.sql.SparkSession@5280cf07
rdd: org.apache.spark.rdd.RDD[String] = /FileStore/tables/Practica_RDDs/txts/* MapPartitionsRDD[11] at textFile at command-3449726824910705:9
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```

- En Python:

En vez de crear, se asigna la SparkSession "LecturaArchivos", creada anteriormente.

```
%python
from pyspark.sql import SparkSession

spark = SparkSession.builder.appName("LecturaArchivos").getOrCreate()
rdd = spark.sparkContext.textFile("/FileStore/tables/Practica_RDDs/txts/*")
data = rdd.collect()
for i in data:
    print(i)

> (1) Spark Jobs

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```

#### 2. Lee varios archivos de texto en un solo RDD.

Se leen los archivos de texto y se combinan en un solo RDD.

En Scala

Se leen los archivos de texto y se combinan en un solo RDD.

```
//Las variables en scala (val) son inmutables y no se pueden reasignar. El valor de la variable es global en el notebook pero solo con ese valor determinado.

val rdd = spark.sparkContext.textFile("/FileStore/tables/Practica_RDDs/txts/TextFile1_txt.txt,/FileStore/tables/Practica_RDDs/txts/TextFile2_txt.txt")

val data = rdd.collect()
data.foreach(println)

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# - En Python

## No hace falta importar from pyspark.sql porque ya se ha importado antes

```
%python
  rdd = spark.sparkContext.textFile("/FileStore/tables/Practica_RDDs/txts/TextFile1_txt.txt,/FileStore/tables/Practica_RDDs/txts/TextFile2_txt.txt")
  data = rdd.collect()
  for i in data:
        print(i)

> (1) Spark Jobs

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```

# 3. Lee todos los archivos de texto que coinciden con un patrón.

Leo todos los archivos de texto que acaben en .txt

En Scala

```
val rdd = spark.sparkContext.textFile("/FileStore/tables/Practica_RDDs/txts/*.txt")
   val data = rdd.collect()
  data.foreach(println)
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rdd: org.apache.spark.rdd.RDD[String] = /FileStore/tables/Practica_RDDs/txts/*.txt MapPartitionsRDD[33] at textFile at command-4335281140898157:1
data: Array[String] = Array("Lorem ipsum dolor sit amet, consectetur adipiscing elit. Sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. ", "Ut eni m ad minim veniam, quis nostrud exercitation ullamco ", "laboris nisi ut aliquip ex ea commodo consequat. ", "Duis aute irure dolor in reprehenderit in voluptate v
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```

# - En Python

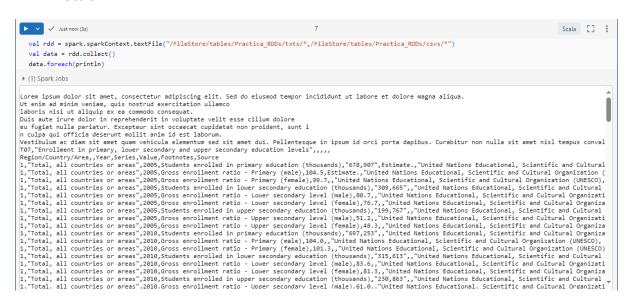
```
%python
  rdd = spark.sparkContext.textFile("/FileStore/tables/Practica_RDDs/txts/*.txt")
  data = rdd.collect()
  for i in data:
        print(i)

  * (1) Spark Jobs

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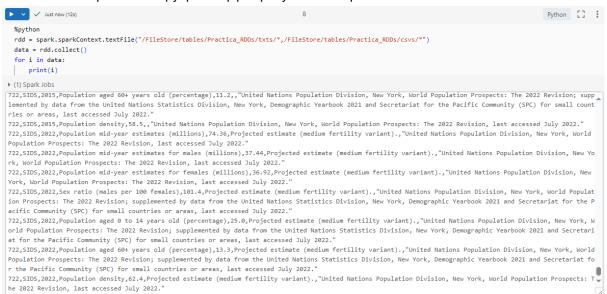
#### 4. Lee archivos de varios directorios en un solo RDD.

- En Scala.



- En Python

No hace falta importar from pyspark.sql porque ya se ha importado antes



#### 5. Lectura de archivos de texto de directorios anidados en un único RDD.

Leo todos los archivos de texto de directorios anidados en un único RDD.

En Scala

Leo todos los archivos de texto en el directorio específico y sus subdirectorios. " \*\*/\* " me asegura que se incluyan todos los archivos en los subdirectorios.

```
val rdd = spark.sparkContext.textFile("/FileStore/tables/Practica_RDDs/**/*")
val data = rdd.collect()
data.foreach(print)

> (1) Spark Jobs

T07, "Enrollment in primary, lower secondary and upper secondary education levels",,,,,Region/Country/Area,,Year,Series,Value,Footnotes,Sourcel, "Total, all countries
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st accessed July 2022. "716,Zimbabwe,2010,Population aged 0 to 14 years old (percentage),43.2,, "United Nations Population Division, New York, World Population Prospe
data: Array[String] = Array(T07, "Enrollment in primary, lower secondary and upper secondary education levels",,,,, Region/Country/Area,,Year,Series,Value,Footnotes
```

#### - En Python

```
rdd = spark.sparkContext.textFile("/FileStore/tables/Practica RDDs/**/*")
 data = rdd.collect()
  for i in data:
     print(i)
(1) Spark Jobs
York, World Population Prospects: The 2022 Revision, last accessed July 2022.
722,SIDS,2022,Sex ratio (males per 100 females),101.4,Projected estimate (medium fertility variant).,"United Nations Population Division, New York, World Populat
ion Prospects: The 2022 Revision; supplemented by data from the United Nations Statistics Division, New York, Demographic Yearbook 2021 and Secretariat for the Pacific Community (SPC) for small countries or areas, last accessed July 2022."
722,SIDS,2022,Population aged 0 to 14 years old (percentage),25.0,Projected estimate (medium fertility variant).,"United Nations Population Division, New York, W
orld Population Prospects: The 2022 Revision; supplemented by data from the United Nations Statistics Division, New York, Demographic Yearbook 2021 and Secretari
at for the Pacific Community (SPC) for small countries or areas, last accessed July 2022."
722,SIDS,2022,Population aged 60+ years old (percentage),13.3,Projected estimate (medium fertility variant).,"United Nations Population Division, New York, World Population Prospects: The 2022 Revision; supplemented by data from the United Nations Statistics Division, New York, Demographic Yearbook 2021 and Secretariat fo
r the Pacific Community (SPC) for small countries or areas, last accessed July 2022."
722,SIDS,2022,Population density,62.4,Projected estimate (medium fertility variant).,"United Nations Population Division, New York, World Population Prospects: T
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### 6. Lectura de varios archivos csv en RDD.

#### En Scala

```
val data = rdd.collect()
data.foreach(println)

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```

#### En Python

```
%python
  rdd = spark.sparkContext.textFile("/FileStore/tables/Practica RDDs/csvs/Population csv.csv,/FileStore/tables/Practica RDDs/csvs/Education csv.csv")
  data = rdd.collect()
  for i in data:
     print(i)
▶ (1) Spark Jobs
ntreal, the UNESCO Institute for Statistics (UIS) statistics database, last accessed April 2023.
722,SIDS,2015,Gross enrollment ratio - Upper secondary level (female),60.3,Estimate., "United Nations Educational, Scientific and Cultural Organization (UNESCO), Montreal, the UNESCO Institute for Statistics (UIS) statistics database, last accessed April 2023."
722,SIDS,2020,Students enrolled in primary education (thousands),"8,377",Estimate.,"United Nations Educational, Scientific and Cultural Organization (UNESCO), Mo
ntreal, the UNESCO Institute for Statistics (UIS) statistics database, last accessed April 2023."
722,SIDS,2020,Gross enrollment ratio - Primary (male),121.0,Estimate., "United Nations Educational, Scientific and Cultural Organization (UNESCO), Montreal, the U
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722,SIDS,2020,Gross enrollment ratio - Primary (female),117.8,Estimate.,"United Nations Educational, Scientific and Cultural Organization (UNESCO), Montreal, the
UNESCO Institute for Statistics (UIS) statistics database, last accessed April 2023."
722,SIDS,2020,Students enrolled in lower secondary education (thousands),"2,734",Estimate.,"United Nations Educational, Scientific and Cultural Organization (UNE
SCO), Montreal, the UNESCO Institute for Statistics (UIS) statistics database, last accessed April 2023.
722,SIDS,2020,Gross enrollment ratio - Lower secondary level (male),76.5,Estimate.,"United Nations Educational, Scientific and Cultural Organization (UNESCO), Montreal, the UNESCO Institute for Statistics (UIS) statistics database, last accessed April 2023."
722,SIDS,2020,Gross enrollment ratio - Lower secondary level (female),74.8,Estimate., "United Nations Educational, Scientific and Cultural Organization (UNESCO),
 Montreal, the UNESCO Institute for Statistics (UIS) statistics database, last accessed April 2023.
722,SIDS,2020,Students enrolled in upper secondary education (thousands), "1,890", Estimate., "United Nations Educational, Scientific and Cultural Organization (UNE
SCO), Montreal, the UNESCO Institute for Statistics (UIS) statistics database, last accessed April 2023.
722,SIDS,2020,Gross enrollment ratio - Upper secondary level (male),56.1,Estimate.,"United Nations Educational, Scientific and Cultural Organization (UNESCO), Mo
ntreal, the UNESCO Institute for Statistics (UIS) statistics database, last accessed April 2023."
722,SIDS,2020,Gross enrollment ratio - Upper secondary level (female),59.4,Estimate.,"United Nations Educational, Scientific and Cultural Organization (UNESCO),
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