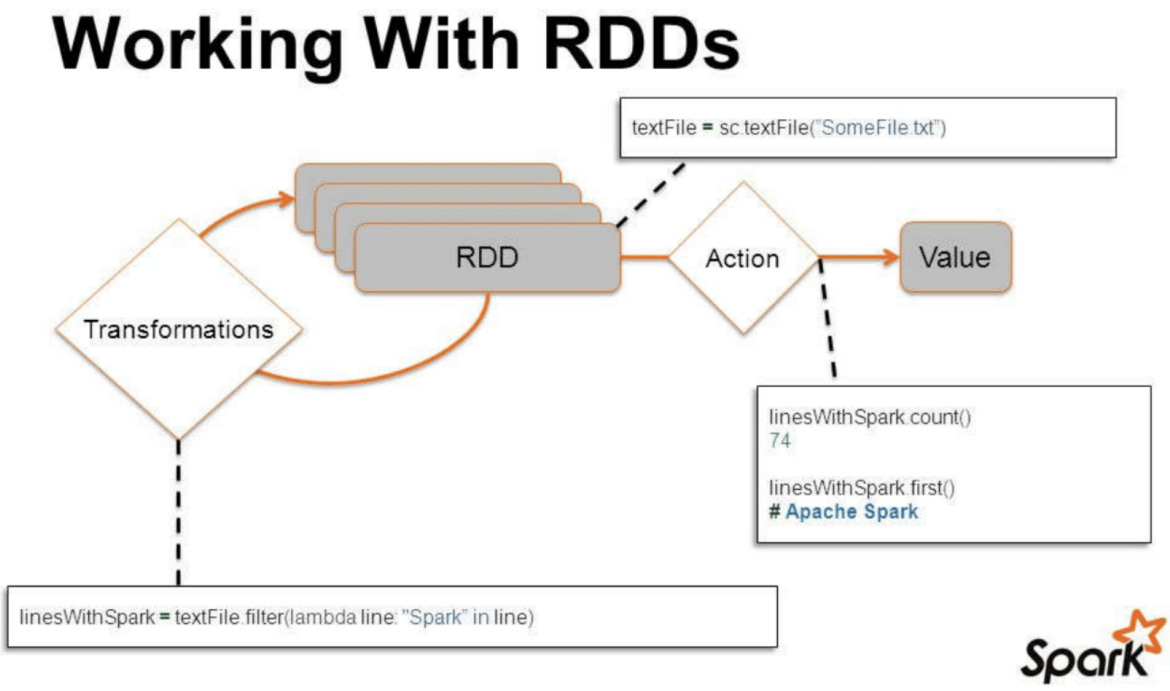
Bu bölümde RDD action metodları hakkında genel bilgiler vereceğiz

Örnekler için

http://grouplens.org/datasets/movielens/adresinden

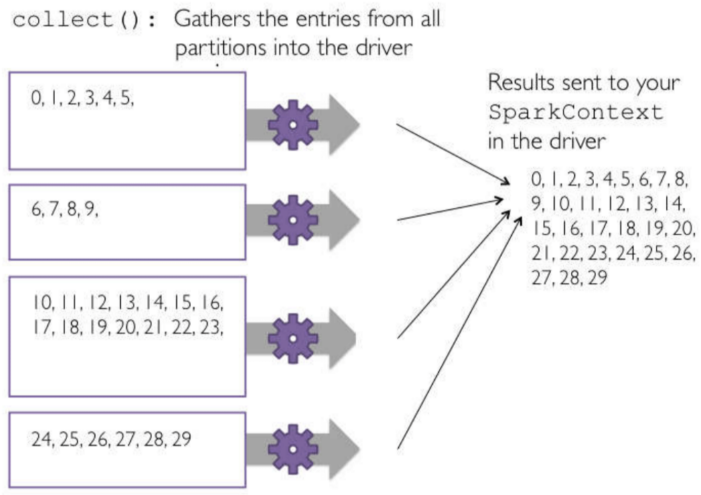
veri indirebiliriz. Action metotları genel olarak Spark verileri üzerinde hesaplama yada dış sistemlere veri aktarma işlemleri yapmamızı sağlar



Count
RDD,Dataset içerisindeki kayıt sayısını verir

```
import org.apache.spark.sql.SparkSession

object MovieTransformationCount {
 def main(args: Array[String]): Unit = {

   val spark = SparkSession.builder.master("local").
     appName("SparkByExample").
     getOrCreate()

   val
rdd=spark.sparkContext.textFile("/Users/serkan/Desktop/Training/ApacheSpark/ml-latest-small/movies.csv");
   println("Count : " + rdd.count())
   println("First : " + rdd.first())

   //1.parametre  > Sampling with Replacement(false ise aynı kayıtlar gelebilir
   //2.parametre  > yüzde olarak kaç tane seçilecek
   val count = rdd.count()

   println("Movie RDD Count : " + count)

 }
}
```

Collect
Worker makineleri üzerinde bulunan veriler **driver** uzerinde List veri yapısında toplanır.



spark-collect

```
import org.apache.spark.sql.SparkSession

object MovieTransformationCollect {
 def main(args: Array[String]): Unit = {

   val spark = SparkSession.builder.master("local").
     appName("SparkByExample").
     getOrCreate()

   val
rdd=spark.sparkContext.textFile("/Users/serkan/Desktop/Training/ApacheSpark/ml-latest-small/movies.csv");
   println("Count : " + rdd.count())
   println("First : " + rdd.first())

   val list = rdd.collect()

   println("Movie RDD Count : " + list.length)

 }
}
```

First
RDD,Dataset içerisindeki ilk kaydı verir

```
import org.apache.spark.sql.SparkSession

object MovieTransformationFirst {
 def main(args: Array[String]): Unit = {

   val spark = SparkSession.builder.master("local").
     appName("SparkByExample").
     getOrCreate()

   val
rdd=spark.sparkContext.textFile("/Users/serkan/Desktop/Training/ApacheSpark/ml-late
st-small/movies.csv");
   println("Count : " + rdd.count())
   println("First : " + rdd.first())

   val row = rdd.first()

   println("Movie RDD First row : " + row)

 }
}
```

Take

RDD ve Dataset içerisinden parametre olarak verilen sayı kadar kayıt verir(ilk n kayıt)

```
import org.apache.spark.sql.SparkSession

object MovieTransformationTake {
 def main(args: Array[String]): Unit = {

   val spark = SparkSession.builder.master("local").
     appName("SparkByExample").
     getOrCreate()

   val
rdd=spark.sparkContext.textFile("/Users/serkan/Desktop/Training/ApacheSpark/ml-late
st-small/movies.csv");
   println("Count : " + rdd.count())
   println("First : " + rdd.first())

   val list = rdd.take(2)

   println("Two records : " + list.length)

 }
}
```

takeSample

RDD ve Dataset içerisinden parametre olarak verilen sayı kadar örnek kayıt verir

```
import org.apache.spark.sql.SparkSession

object MovieTransformationTakeSample {
 def main(args: Array[String]): Unit = {

   val spark = SparkSession.builder.master("local").
     appName("SparkByExample").
     getOrCreate()

   val
rdd=spark.sparkContext.textFile("/Users/serkan/Desktop/Training/ApacheSpark/ml-latest-small/movies.csv");
   println("Count : " + rdd.count())
   println("First : " + rdd.first())

   //random value
   val list = rdd.takeSample(true,2)

   for (row <-list)
     println(row)

 }
}
```

saveAsTextFile

Local bilgisayar sistemine yada HDFS'e verikaydetmemizi sağlar

```
import org.apache.spark.sql.SparkSession

object MovieTransformationSaveAsText {
 def main(args: Array[String]): Unit = {

   val spark = SparkSession.builder.master("local").
     appName("SparkByExample").
     getOrCreate()

   val
rdd=spark.sparkContext.textFile("/Users/serkan/Desktop/Training/ApacheSpark/ml-latest-small/movies.csv");
   println("Count : " + rdd.count())
   println("First : " + rdd.first())

   val filteredRdd = rdd.filter(row => row.startsWith("20"))

   //save as text

filteredRdd.saveAsTextFile("/Users/serkan/Desktop/Training/ApacheSpark/ml-latest-small/output")

   //save to hdfs
   //rdd.saveAsTextFile("hdfs://quickstart.cloudera:8020/user/data")

 }
}
```

Reduce

Farkı makinelerde bulunan verileri, belirli bir kurala göre bir araya getirmemizisağlar

```
import org.apache.spark.sql.SparkSession

object MovieTransformationReduce {
 def main(args: Array[String]): Unit = {

   val spark = SparkSession.builder.master("local").
     appName("SparkByExample").
     getOrCreate()

   val listRdd = spark.sparkContext.parallelize(List(200, 400, 100, 30, 1000, 500))
   println("min : " + listRdd.reduce(_ min _))
   println("max : " + listRdd.reduce(_ max _))
   println("sum : " + listRdd.reduce(_ + _))

 }
}
```

takeOrdered ve foreach

takeOrdered RDD ve Dataset içerisindeki verileri belirli bir sıralamaya göre getirir. Verdiğimiz parametre ise kaç tane kayıt getirileceğini belirtir.

Foreach ise bir metodun(fonksiyonun) tüm RDD ve Dataset elemanlarıiçin çalıştırılmasını sağlar

```
import org.apache.spark.sql.SparkSession
import scala.math.Ordering

case class Person(name:String, age:Int)

object MovieTransformationTakeOrdered {
 def main(args: Array[String]): Unit = {

   val spark = SparkSession.builder.master("local").
     appName("SparkByExample").
     getOrCreate()

   val people = Array(Person("bob", 30), Person("ann", 32), Person("carl", 19))
   val rdd = spark.sparkContext.parallelize(people, 2)
   rdd.takeOrdered(1)(Ordering[Int].reverse.on(x => x.age))

   rdd.foreach(row => {
     println("Name : " + row.name)
   })

 }
}
```

Wordcount

countByKey ile RDD içerisinde bulunan ey-value çiftlerinden key değerlerinin toplamı bulunur

```
import org.apache.spark.sql.SparkSession


object MovieTransformationCountByKey {
 def main(args: Array[String]): Unit = {

   val spark = SparkSession.builder.master("local").
     appName("SparkByExample").
     config("spark.serializer", "org.apache.spark.serializer.KryoSerializer")
     .config("spark.kryo.registrationRequired", "true")
     .getOrCreate()


   val str = "----------asd,asdad,asdsad"
   println(str.split(",")(0))

   val rdd =
spark.sparkContext.textFile("/Users/serkan/Desktop/Training/ApacheSpark/ml-latest-s
mall/wordcount.csv");
   val counts = rdd.flatMap(line => line.split(" ")).map(word => (word,
1)).reduceByKey(_ + _)
   counts.foreach(println)
 }
}
```