ex62

August 20, 2022

[25]:
```
from pyspark.streaming import StreamingContext
```

[26]:
```
# Create a Spark Streaming Context object
ssc = StreamingContext(sc, 30)
```

[27]:
```
# Create a (Receiver) DStream that will connect to localhost:9999
linesDStream = ssc.socketTextStream("localhost", 9999)
```

[28]:
```
# Computer for each stockID the price variation (compute it for each batch).
# Select only the stocks with a price variation (%) greater than 0.5%
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[29]:
```
# Return one pair (stockId, (price, price) )  for each input record

def extractStockIdPricePrice(line):
    fields = line.split(",")

    stockId = fields[1]
    price = fields[2]

    return (stockId, (float(price), float(price)) )


stockIdPriceDStream = linesDStream.map(extractStockIdPricePrice)
```

[30]:
```
# Compute max and min for each stockId
stockIdMaxMinPriceDStream = stockIdPriceDStream\
.reduceByKey(lambda v1, v2: ( max(v1[0],v2[0]), min(v1[1],v2[1]) ) )
```

[31]:
```
# Compute variation for each stock
stockIdVariationDStream = stockIdMaxMinPriceDStream\
.mapValues(lambda MaxMinValue: 100.0*(MaxMinValue[0]-MaxMinValue[1])/
 ↪MaxMinValue[0] )
```

[32]:
```
# Select only the stocks with variation greater than 0.5%
selectedStockIdsVariationsDStream = stockIdVariationDStream.filter(lambda pair:␣
 ↪pair[1]>0.5)
```

[33]:
```
selectedStockIdsVariationsDStream.pprint()
```

[38]:
```
#Start the computation
ssc.start()
```

[ ]:
```
# Run this application for 90 seconds
ssc.awaitTerminationOrTimeout(90)
ssc.stop(stopSparkContext=False)
```

[ ]:
```

```