parallelECLAT-st

September 5, 2022

1 Discovering Frequent Patterns in Big Data Using parallelECLAT Algorithm

In this tutorial, we will discuss two approaches to find frequent patterns in big data using parallelECLAT algorithm.

1. Basic approach: Here, we present the steps to discover frequent patterns using a single minimum support value

---

1.1 Basic approach: Executing parallelECLAT on a single dataset at a particular minimum support value

Step 1: Import the parallelECLAT algorithm

[1]:
```
from PAMI.frequentPattern.pyspark import parallelECLAT  as alg
```

Step 2: Specify the following input parameters

[2]:
```
inputFile = 'transactional_T10I4D100K.csv'

minimumSupportCount=100  #Users can also specify this constraint between 0 to 1.
mumberWorkersCount=4
seperator='\t'
```

Step 3: Execute the parallelECLAT algorithm

[3]:
```
obj = alg.parallelECLAT(iFile=inputFile,␣
 ↪minSup=minimumSupportCount,numWorkers=mumberWorkersCount, sep=seperator)   ␣
 ↪#initialize
obj.startMine()            #Start the mining process
```

```
Setting default log level to "WARN".
To adjust logging level use sc.setLogLevel(newLevel). For SparkR, use
setLogLevel(newLevel).

22/08/24 13:38:51 WARN NativeCodeLoader: Unable to load native-hadoop library
for your platform… using builtin-java classes where applicable
```

```
100 <class 'int'>
<class 'int'> 100
```

```
Frequent patterns were generated successfully using Parallel ECLAT algorithm
```

Step 4: Storing the generated patterns

Step 4.1: Storing the generated patterns in a file

[4]:
```
obj.savePatterns(outFile='frequentPatternsMinSupCount1000.txt')
```

Step 4.2. Storing the generated patterns in a data frame

[5]:
```
frequentPatternsDF= obj.getPatternsAsDataFrame()
```

Step 5: Getting the statistics

Step 5.1: Total number of discovered patterns

[6]:
```
print('Total No of patterns: ' + str(len(frequentPatternsDF)))
```

```
Total No of patterns: 27532
```

Step 5.2: Runtime consumed by the mining algorithm

[7]:
```
print('Runtime: ' + str(obj.getRuntime()))
```

```
Runtime: 15.518388032913208
```

[8]:
```
##### Step 5.3: Total Memory consumed by the mining algorithm
```

[9]:
```
print('Memory (RSS): ' + str(obj.getMemoryRSS()))
print('Memory (USS): ' + str(obj.getMemoryUSS()))
```

```
Memory (RSS): 223174656
Memory (USS): 184606720
```