Advanced Tutorial on Implementing CHARM Algorithm

In this tutorial, we explain how the CHARM algorithm can be implemented by varying the minimum support values

Step 1: Import the CHARM algorithm and pandas data frame

In [1]:

```
from PAMI.frequentPattern.closed import CHARM  as alg
import pandas as pd
```

Step 2: Specify the following input parameters

In [2]:

```
inputFile = 'transactional_T10I4D100K.csv'
seperator='¥t'
minimumSupportCountList = [100, 150, 200, 250, 300]
#minimumSupport can also specified between 0 to 1. E.g., minSupList = [0.005, 0.006,

result = pd.DataFrame(columns=['algorithm', 'minSup', 'patterns', 'runtime', 'memory
#initialize a data frame to store the results of CHARM algorithm
```

Step 3: Execute the CHARM algorithm using a for loop

In [3]:

```
algorithm = 'CHARM'  #specify the algorithm name
for minSupCount in minimumSupportCountList:
    obj = alg.CHARM('transactional_T10I4D100K.csv', minSup=minSupCount, sep=seperato
    obj.startMine()
    #store the results in the data frame
    result.loc[result.shape[0]] = [algorithm, minSupCount, len(obj.getPatterns()), c
```

```
Closed Frequent patterns were generated successfully using CHARM algorithm
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```

In [4]:

```
print(result)
```

```
  algorithm  minSup  patterns    runtime     memory
0     CHARM     100     17145  18.463059  140075008
1     CHARM     150     12356  17.562555  140505088
2     CHARM     200      8713  16.763453  140963840
3     CHARM     250      4969  15.939386  140640256
4     CHARM     300      2865  15.101360  140718080
```

Step 5: Visualizing the results

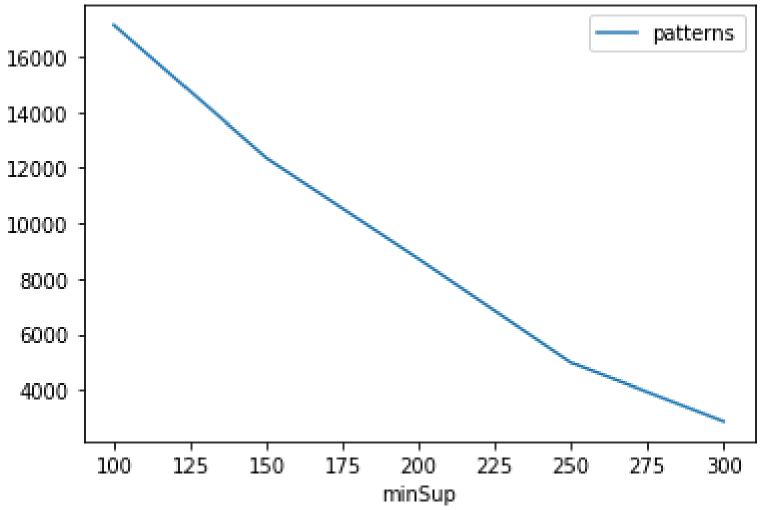
Step 5.1 Importing the plot library

In [5]:

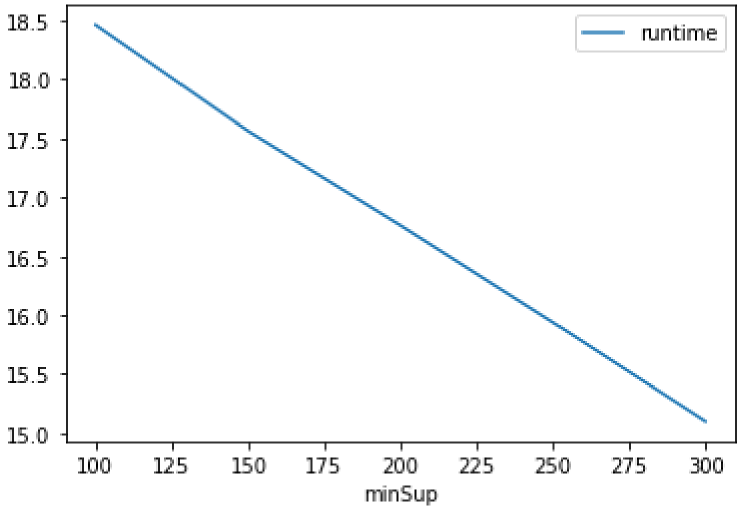
```
from PAMI.extras.graph import plotLineGraphsFromDataFrame as plt
```

Step 5.2. Plotting the number of patterns

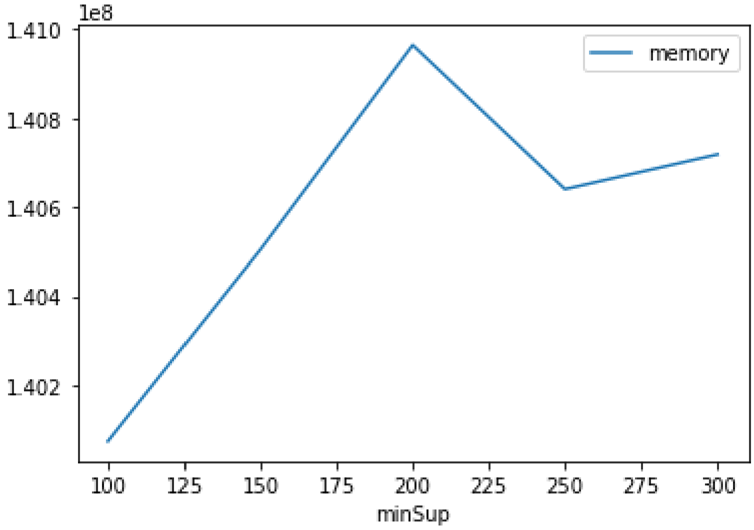
In [6]:
```
ab = plt.plotGraphsFromDataFrame(result)
ab.plotGraphsFromDataFrame() #drawPlots()
```



```
Graph for No Of Patterns is successfully generated!
```



```
Graph for Runtime taken is successfully generated!
```



```
Graph for memory consumption is successfully generated!
```

Step 6: Saving the results as latex files

In [7]:
```
from PAMI.extras.graph import generateLatexFileFromDataFrame as gdf
gdf.generateLatexCode(result)
```

```
Latex files generated successfully
```

```
In [ ]:
```