Advanced Tutorial on Implementing Apriori Algorithm

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

Step 1: Import the Apriori algorithm and pandas data frame

In [1]:
```
from PAMI.frequentPattern.basic import Apriori  as alg
import pandas as pd
```

Step 2: Specify the following input parameters

In [2]:
```
inputFile = 'transactional_T10I4D100K.csv'
seperator='¥t'
minimumSupportCountList = [1000, 1500, 2000, 2500, 3000]
#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 Apriori algorithm
```

Step 3: Execute the Apriori algorithm using a for loop

In [3]:
```
algorithm = 'Apriori'  #specify the algorithm name
for minSupCount in minimumSupportCountList:
    obj = alg.Apriori('transactional_T10I4D100K.csv', minSup=minSupCount, sep=seperа
    obj.startMine()
    #store the results in the data frame
    result.loc[result.shape[0]] = [algorithm, minSupCount, len(obj.getPatterns()), c
```

```
Frequent patterns were generated successfully using Apriori algorithm
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```

In [4]:
```
print(result)
```

```
  algorithm  minSup  patterns     runtime     memory
0   Apriori    1000       385  484.487166  266063872
1   Apriori    1500       237  148.440647  265666560
2   Apriori    2000       155   63.079747  266498048
3   Apriori    2500       107   32.636862  265863168
4   Apriori    3000        60   14.269831  265187328
```

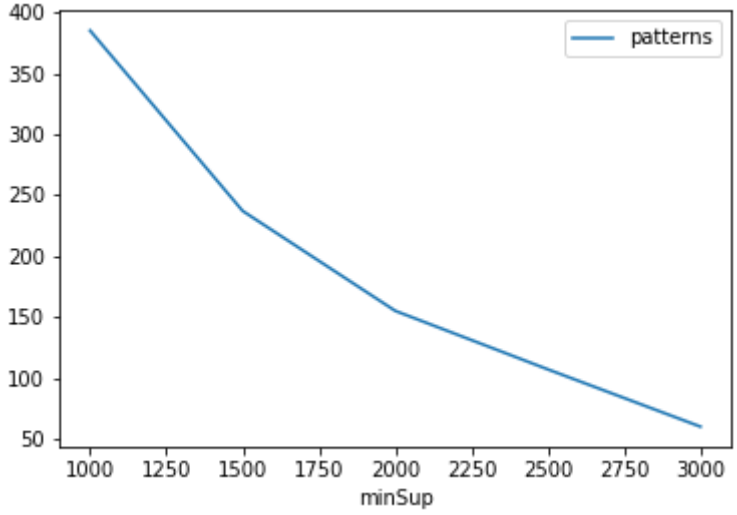
Step 5: Visualizing the results

Step 5.1 Importing the plot library

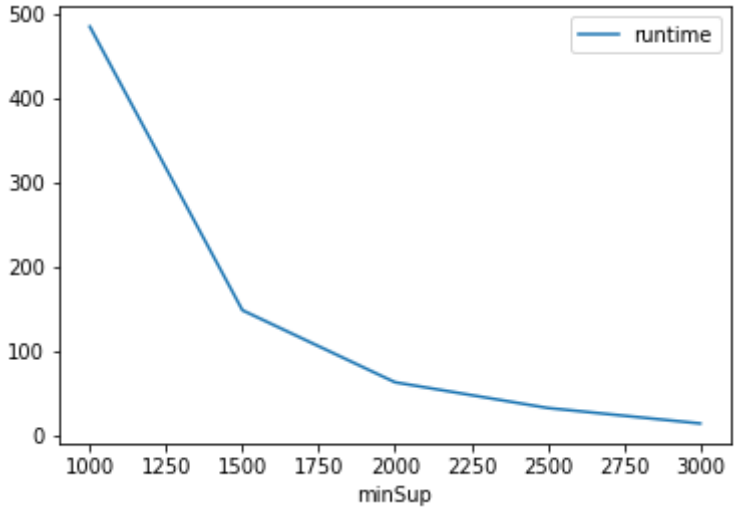
In [5]:
```
from PAMI.extras.graph import plotLineGraphsFromDataFrame as plt
```

Step 5.2. Plotting the number of patterns

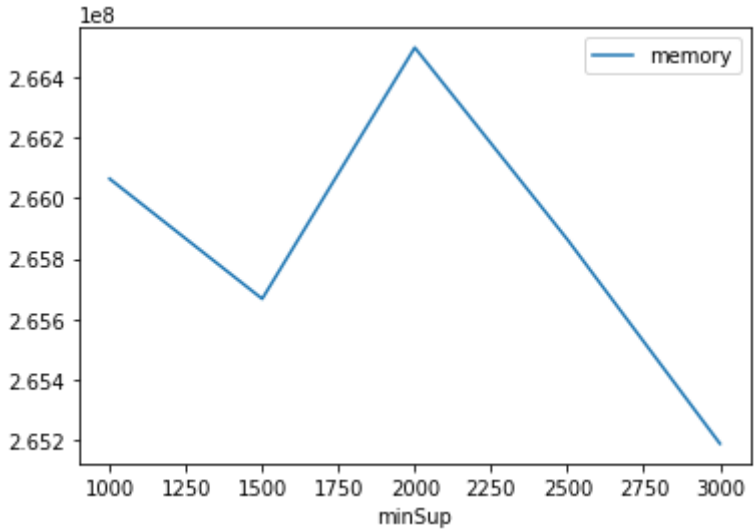
In [6]:
```
ab = plt.plotGraphsFromDataFrame(result)
ab.plotGraphsFromDataFrame() #drawPlots()
```



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 [ ]: