Advanced Tutorial on Implementing PSGrowth Algorithm

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

Step 1: Import the PSGrowth algorithm and pandas data frame

In [1]:
```
from PAMI.periodicFrequentPattern.basic import PSGrowth  as alg
import pandas as pd
```

Step 2: Specify the following input parameters

In [2]:
```
inputFile = 'temporal_T10I4D100K.csv'
seperator='¥t'
maxmunPeriodCount=5000
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','maxPer',  'patterns','runtime'
#initialize a data frame to store the results of PSGrowth algorithm
```

Step 3: Execute the PSGrowth algorithm using a for loop

In [3]:
```
algorithm = 'PSGrowth'  #specify the algorithm name
for minSupCount in minimumSupportCountList:
    obj = alg.PSGrowth(iFile=inputFile, minSup=minSupCount,maxPer=maxmunPeriodCount,
    obj.startMine()
    #store the results in the data frame
    result.loc[result.shape[0]] = [algorithm, minSupCount,maxmunPeriodCount, len(obj
```

```
Periodic-Frequent patterns were generated successfully using PS-Growth algorithm
Periodic-Frequent patterns were generated successfully using PS-Growth algorithm
Periodic-Frequent patterns were generated successfully using PS-Growth algorithm
Periodic-Frequent patterns were generated successfully using PS-Growth algorithm
Periodic-Frequent patterns were generated successfully using PS-Growth algorithm
```

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

```
  algorithm  minSup  maxPer  patterns       runtime     memory
0  PSGrowth     100    5000     25462  1.660198e+09  673349632
1  PSGrowth     150    5000     18982  1.660198e+09  670834688
2  PSGrowth     200    5000     13251  1.660198e+09  668270592
3  PSGrowth     250    5000      7702  1.660198e+09  663793664
4  PSGrowth     300    5000      4552  1.660198e+09  651411456
```

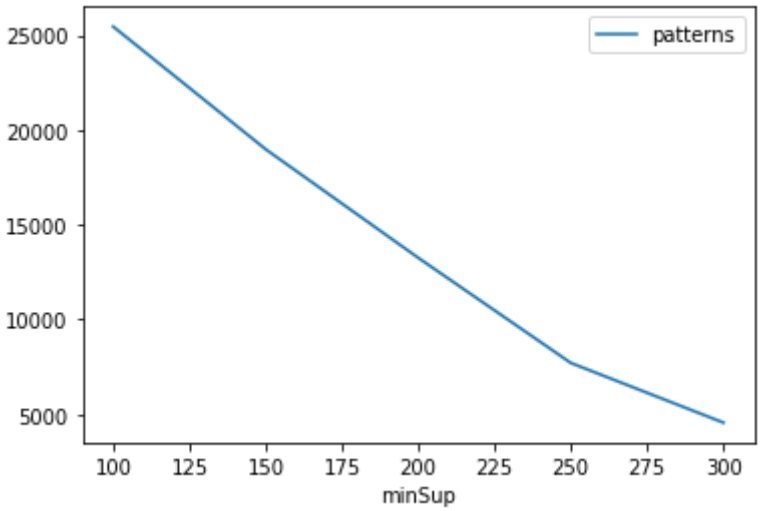
Step 5: Visualizing the results

Step 5.1 Importing the plot library

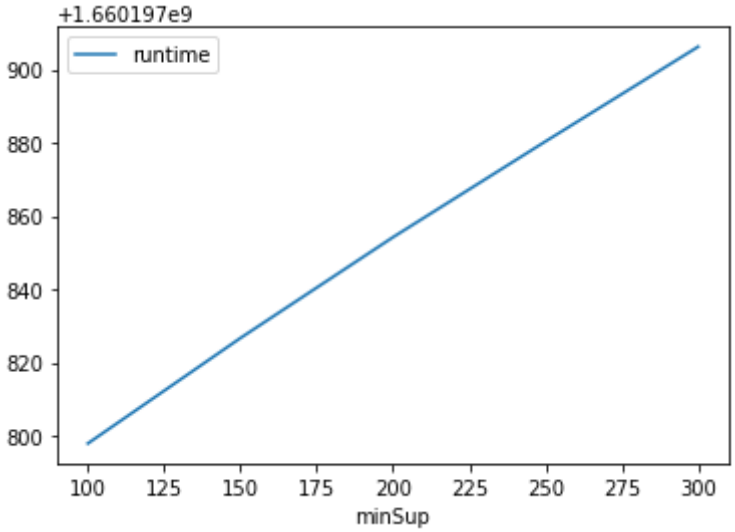
In [5]:
```
from PAMI.extras.graph import plotLineGraphsFromDataFrame as plt
```

Step 5.2. Plotting the number of patterns

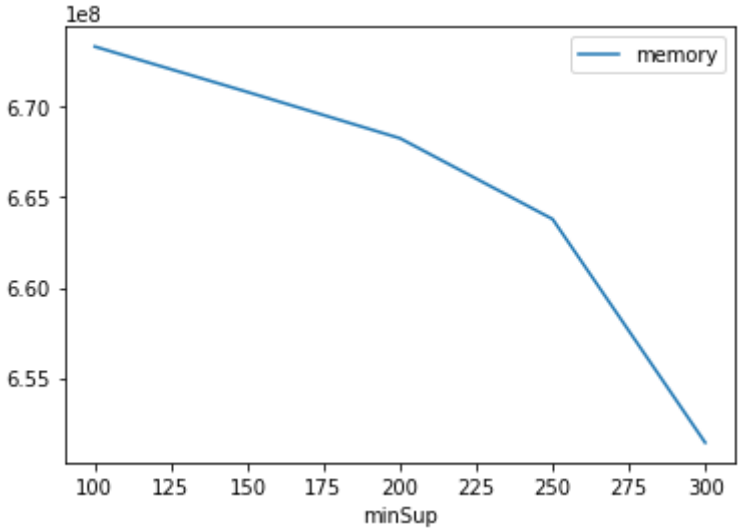
In [6]:
```
ab = plt.plotGraphsFromDataFrame(result)
ab.plotGraphsFromDataFrame() #drawPlots()
```



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