

# Template

1. In Part 1 of required tasks for Apriori, please list the results obtained by different support values using the following format in your report:

*Support is set to be 50%*

*number of length-1 frequent itemsets: ??*

*number of length-2 frequent itemsets: ??*

*number of length-3 frequent itemsets: ??*

*.....*

*number of all lengths frequent itemsets: ??*

2. In Part 2 of required tasks for Apriori, your program is expected to answer the template queries. The following are queries written by Python to give you an idea of what it should be like.

For template 1, we have 9 possible keywords combinations:

```
(result11, cnt) = asso_rule.template1("RULE", "ANY", ['G59_UP'])
(result12, cnt) = asso_rule.template1("RULE", "NONE", ['G59_UP'])
(result13, cnt) = asso_rule.template1("RULE", 1, ['G59_UP', 'G10_Down'])
(result14, cnt) = asso_rule.template1("HEAD", "ANY", ['G59_UP'])
(result15, cnt) = asso_rule.template1("HEAD", "NONE", ['G59_UP'])
(result16, cnt) = asso_rule.template1("HEAD", 1, ['G59_UP', 'G10_Down'])
(result17, cnt) = asso_rule.template1("BODY", "ANY", ['G59_UP'])
(result18, cnt) = asso_rule.template1("BODY", "NONE", ['G59_UP'])
(result19, cnt) = asso_rule.template1("BODY", 1, ['G59_UP', 'G10_Down'])
```

For template 2, we have 3 keywords choices:

```
(result21, cnt) = asso_rule.template2("RULE", 3)
(result22, cnt) = asso_rule.template2("HEAD", 2)
(result23, cnt) = asso_rule.template2("BODY", 1)
```

For template 3, you need to implement AND/OR logical operator to connect two parts which can be from either template 1 or template 2. For example, “1or1” means “a query of Template1 OR another query of Template1”.

```
(result31, cnt) = asso_rule.template3("1or1", "HEAD", "ANY", ['G10_Down'],
"BODY", 1, ['G59_UP'])
```

```
(result32, cnt) = asso_rule.template3("1and1", "HEAD", "ANY",  
['G10_Down'], "BODY", 1, ['G59_UP'])  
(result33, cnt) = asso_rule.template3("1or2", "HEAD", "ANY", ['G10_Down'],  
"BODY", 2)  
(result34, cnt) = asso_rule.template3("1and2", "HEAD", "ANY",  
['G10_Down'], "BODY", 2)  
(result35, cnt) = asso_rule.template3("2or2", "HEAD", 1, "BODY", 2)  
(result36, cnt) = asso_rule.template3("2and2", "HEAD", 1, "BODY", 2)
```

Your program should be able to output the query results (i.e., the rules that satisfy the template) and the number of such rules.

Set Support = 50%, Confidence = 70% for the above queries, and write down the corresponding number of rules in your report. During demo, you will be asked to show the query results, i.e., the rules (either on screen or print to a file).