\*\*\*\*\*\*\*FILE NAME GroceryStoreDataSet.csv\*\*\*\*\*\*\*\*\*\*

\*\*\*\*\*Rule mining using apriori algorithm\*\*\*\*

===========================================================================================================

-----------------------Association Rule-------------------

Freq. Itemset: {'JAM', 'BREAD'}

Rules: ['JAM'] -> ['BREAD']

Conf: 1.000

Supp: 0.100

Lift: 0.077

Comprehensibility: 1.000

Coverage: 0.154

Interestingness: 0.138

Freq. Itemset: {'COCK', 'COFFEE'}

Rules: ['COCK'] -> ['COFFEE']

Conf: 1.000

Supp: 0.150

Lift: 0.125

Comprehensibility: 1.000

Coverage: 0.375

Interestingness: 0.319

Freq. Itemset: {'JAM', 'MAGGI'}

Rules: ['JAM'] -> ['MAGGI']

Conf: 1.000

Supp: 0.100

Lift: 0.200

Comprehensibility: 1.000

Coverage: 0.400

Interestingness: 0.360

Freq. Itemset: {'BISCUIT', 'CORNFLAKES', 'BREAD'}

Rules: ['CORNFLAKES', 'BREAD'] -> ['BISCUIT']

Conf: 1.000

Supp: 0.050

Lift: 0.143

Comprehensibility: 0.631

Coverage: 0.143

Interestingness: 0.136

Freq. Itemset: {'BISCUIT', 'MILK', 'BREAD'}

Rules: ['BISCUIT', 'MILK'] -> ['BREAD']

Conf: 1.000

Supp: 0.100

Lift: 0.077

Comprehensibility: 0.631

Coverage: 0.154

Interestingness: 0.138

Freq. Itemset: {'BISCUIT', 'SUGER', 'BREAD'}

Rules: ['BISCUIT', 'SUGER'] -> ['BREAD']

Conf: 1.000

Supp: 0.050

Lift: 0.077

Comprehensibility: 0.631

Coverage: 0.077

Interestingness: 0.073

Freq. Itemset: {'BISCUIT', 'COCK', 'COFFEE'}

Rules: ['BISCUIT', 'COCK'] -> ['COFFEE']

Conf: 1.000

Supp: 0.100

Lift: 0.125

Comprehensibility: 0.631

Coverage: 0.250

Interestingness: 0.225

Freq. Itemset: {'BISCUIT', 'COCK', 'COFFEE'}

Rules: ['BISCUIT', 'COFFEE'] -> ['COCK']

Conf: 1.000

Supp: 0.100

Lift: 0.333

Comprehensibility: 0.631

Coverage: 0.667

Interestingness: 0.600

Freq. Itemset: {'BISCUIT', 'COCK', 'CORNFLAKES'}

Rules: ['BISCUIT', 'COCK'] -> ['CORNFLAKES']

Conf: 1.000

Supp: 0.100

Lift: 0.167

Comprehensibility: 0.631

Coverage: 0.333

Interestingness: 0.300

Freq. Itemset: {'BISCUIT', 'COCK', 'CORNFLAKES'}

Rules: ['COCK', 'CORNFLAKES'] -> ['BISCUIT']

Conf: 1.000

Supp: 0.100

Lift: 0.143

Comprehensibility: 0.631

Coverage: 0.286

Interestingness: 0.257

Freq. Itemset: {'BISCUIT', 'CORNFLAKES', 'COFFEE'}

Rules: ['BISCUIT', 'COFFEE'] -> ['CORNFLAKES']

Conf: 1.000

Supp: 0.100

Lift: 0.167

Comprehensibility: 0.631

Coverage: 0.333

Interestingness: 0.300

Freq. Itemset: {'BISCUIT', 'MAGGI', 'TEA'}

Rules: ['BISCUIT', 'MAGGI'] -> ['TEA']

Conf: 1.000

Supp: 0.100

Lift: 0.143

Comprehensibility: 0.631

Coverage: 0.286

Interestingness: 0.257

Freq. Itemset: {'BISCUIT', 'MAGGI', 'TEA'}

Rules: ['BISCUIT', 'TEA'] -> ['MAGGI']

Conf: 1.000

Supp: 0.100

Lift: 0.200

Comprehensibility: 0.631

Coverage: 0.400

Interestingness: 0.360

Freq. Itemset: {'BOURNVITA', 'TEA', 'BREAD'}

Rules: ['BOURNVITA', 'TEA'] -> ['BREAD']

Conf: 1.000

Supp: 0.100

Lift: 0.077

Comprehensibility: 0.631

Coverage: 0.154

Interestingness: 0.138

Freq. Itemset: {'BOURNVITA', 'SUGER', 'COFFEE'}

Rules: ['BOURNVITA', 'COFFEE'] -> ['SUGER']

Conf: 1.000

Supp: 0.050

Lift: 0.167

Comprehensibility: 0.631

Coverage: 0.167

Interestingness: 0.158

Freq. Itemset: {'COCK', 'COFFEE', 'BREAD'}

Rules: ['COCK', 'BREAD'] -> ['COFFEE']

Conf: 1.000

Supp: 0.050

Lift: 0.125

Comprehensibility: 0.631

Coverage: 0.125

Interestingness: 0.119

Freq. Itemset: {'CORNFLAKES', 'MILK', 'BREAD'}

Rules: ['CORNFLAKES', 'BREAD'] -> ['MILK']

Conf: 1.000

Supp: 0.050

Lift: 0.200

Comprehensibility: 0.631

Coverage: 0.200

Interestingness: 0.190

Freq. Itemset: {'JAM', 'MAGGI', 'BREAD'}

Rules: ['JAM'] -> ['MAGGI', 'BREAD']

Conf: 1.000

Supp: 0.100

Lift: 0.333

Comprehensibility: 1.585

Coverage: 0.667

Interestingness: 0.600

Freq. Itemset: {'JAM', 'MAGGI', 'BREAD'}

Rules: ['JAM', 'BREAD'] -> ['MAGGI']

Conf: 1.000

Supp: 0.100

Lift: 0.200

Comprehensibility: 0.631

Coverage: 0.400

Interestingness: 0.360

Freq. Itemset: {'JAM', 'MAGGI', 'BREAD'}

Rules: ['JAM', 'MAGGI'] -> ['BREAD']

Conf: 1.000

Supp: 0.100

Lift: 0.077

Comprehensibility: 0.631

Coverage: 0.154

Interestingness: 0.138

Freq. Itemset: {'JAM', 'MILK', 'BREAD'}

Rules: ['JAM', 'MILK'] -> ['BREAD']

Conf: 1.000

Supp: 0.050

Lift: 0.077

Comprehensibility: 0.631

Coverage: 0.077

Interestingness: 0.073

Freq. Itemset: {'JAM', 'TEA', 'BREAD'}

Rules: ['JAM', 'TEA'] -> ['BREAD']

Conf: 1.000

Supp: 0.050

Lift: 0.077

Comprehensibility: 0.631

Coverage: 0.077

Interestingness: 0.073

Freq. Itemset: {'MAGGI', 'MILK', 'BREAD'}

Rules: ['MAGGI', 'MILK'] -> ['BREAD']

Conf: 1.000

Supp: 0.050

Lift: 0.077

Comprehensibility: 0.631

Coverage: 0.077

Interestingness: 0.073

Freq. Itemset: {'COCK', 'CORNFLAKES', 'COFFEE'}

Rules: ['COCK', 'CORNFLAKES'] -> ['COFFEE']

Conf: 1.000

Supp: 0.100

Lift: 0.125

Comprehensibility: 0.631

Coverage: 0.250

Interestingness: 0.225

Freq. Itemset: {'CORNFLAKES', 'MILK', 'COFFEE'}

Rules: ['MILK', 'COFFEE'] -> ['CORNFLAKES']

Conf: 1.000

Supp: 0.050

Lift: 0.167

Comprehensibility: 0.631

Coverage: 0.167

Interestingness: 0.158

Freq. Itemset: {'SUGER', 'CORNFLAKES', 'COFFEE'}

Rules: ['SUGER', 'CORNFLAKES'] -> ['COFFEE']

Conf: 1.000

Supp: 0.050

Lift: 0.125

Comprehensibility: 0.631

Coverage: 0.125

Interestingness: 0.119

Freq. Itemset: {'CORNFLAKES', 'COFFEE', 'TEA'}

Rules: ['TEA', 'COFFEE'] -> ['CORNFLAKES']

Conf: 1.000

Supp: 0.050

Lift: 0.167

Comprehensibility: 0.631

Coverage: 0.167

Interestingness: 0.158

Freq. Itemset: {'TEA', 'MILK', 'COFFEE'}

Rules: ['MILK', 'COFFEE'] -> ['TEA']

Conf: 1.000

Supp: 0.050

Lift: 0.143

Comprehensibility: 0.631

Coverage: 0.143

Interestingness: 0.136

Freq. Itemset: {'TEA', 'MILK', 'COFFEE'}

Rules: ['TEA', 'COFFEE'] -> ['MILK']

Conf: 1.000

Supp: 0.050

Lift: 0.200

Comprehensibility: 0.631

Coverage: 0.200

Interestingness: 0.190

Freq. Itemset: {'TEA', 'MILK', 'COFFEE'}

Rules: ['TEA', 'MILK'] -> ['COFFEE']

Conf: 1.000

Supp: 0.050

Lift: 0.125

Comprehensibility: 0.631

Coverage: 0.125

Interestingness: 0.119

Freq. Itemset: {'CORNFLAKES', 'MAGGI', 'TEA'}

Rules: ['CORNFLAKES', 'MAGGI'] -> ['TEA']

Conf: 1.000

Supp: 0.050

Lift: 0.143

Comprehensibility: 0.631

Coverage: 0.143

Interestingness: 0.136

Freq. Itemset: {'CORNFLAKES', 'MILK', 'TEA'}

Rules: ['TEA', 'MILK'] -> ['CORNFLAKES']

Conf: 1.000

Supp: 0.050

Lift: 0.167

Comprehensibility: 0.631

Coverage: 0.167

Interestingness: 0.158

Freq. Itemset: {'JAM', 'MAGGI', 'MILK'}

Rules: ['JAM', 'MILK'] -> ['MAGGI']

Conf: 1.000

Supp: 0.050

Lift: 0.200

Comprehensibility: 0.631

Coverage: 0.200

Interestingness: 0.190

Freq. Itemset: {'JAM', 'MAGGI', 'MILK'}

Rules: ['MAGGI', 'MILK'] -> ['JAM']

Conf: 1.000

Supp: 0.050

Lift: 0.500

Comprehensibility: 0.631

Coverage: 0.500

Interestingness: 0.475

Freq. Itemset: {'JAM', 'MAGGI', 'TEA'}

Rules: ['JAM', 'TEA'] -> ['MAGGI']

Conf: 1.000

Supp: 0.050

Lift: 0.200

Comprehensibility: 0.631

Coverage: 0.200

Interestingness: 0.190

Freq. Itemset: {'BISCUIT', 'CORNFLAKES', 'MILK', 'BREAD'}

Rules: ['CORNFLAKES', 'BREAD'] -> ['BISCUIT', 'MILK']

Conf: 1.000

Supp: 0.050

Lift: 0.500

Comprehensibility: 1.000

Coverage: 0.500

Interestingness: 0.475

Freq. Itemset: {'BISCUIT', 'CORNFLAKES', 'MILK', 'BREAD'}

Rules: ['BISCUIT', 'CORNFLAKES', 'BREAD'] -> ['MILK']

Conf: 1.000

Supp: 0.050

Lift: 0.200

Comprehensibility: 0.500

Coverage: 0.200

Interestingness: 0.190

Freq. Itemset: {'BISCUIT', 'CORNFLAKES', 'MILK', 'BREAD'}

Rules: ['BISCUIT', 'CORNFLAKES', 'MILK'] -> ['BREAD']

Conf: 1.000

Supp: 0.050

Lift: 0.077

Comprehensibility: 0.500

Coverage: 0.077

Interestingness: 0.073

Freq. Itemset: {'BISCUIT', 'CORNFLAKES', 'MILK', 'BREAD'}

Rules: ['CORNFLAKES', 'MILK', 'BREAD'] -> ['BISCUIT']

Conf: 1.000

Supp: 0.050

Lift: 0.143

Comprehensibility: 0.500

Coverage: 0.143

Interestingness: 0.136

Freq. Itemset: {'BISCUIT', 'MAGGI', 'TEA', 'BREAD'}

Rules: ['BISCUIT', 'MAGGI', 'BREAD'] -> ['TEA']

Conf: 1.000

Supp: 0.050

Lift: 0.143

Comprehensibility: 0.500

Coverage: 0.143

Interestingness: 0.136

Freq. Itemset: {'BISCUIT', 'MAGGI', 'TEA', 'BREAD'}

Rules: ['BISCUIT', 'TEA', 'BREAD'] -> ['MAGGI']

Conf: 1.000

Supp: 0.050

Lift: 0.200

Comprehensibility: 0.500

Coverage: 0.200

Interestingness: 0.190

Freq. Itemset: {'BISCUIT', 'COCK', 'CORNFLAKES', 'COFFEE'}

Rules: ['BISCUIT', 'COCK'] -> ['CORNFLAKES', 'COFFEE']

Conf: 1.000

Supp: 0.100

Lift: 0.250

Comprehensibility: 1.000

Coverage: 0.500

Interestingness: 0.450

Freq. Itemset: {'BISCUIT', 'COCK', 'CORNFLAKES', 'COFFEE'}

Rules: ['BISCUIT', 'COFFEE'] -> ['COCK', 'CORNFLAKES']

Conf: 1.000

Supp: 0.100

Lift: 0.500

Comprehensibility: 1.000

Coverage: 1.000

Interestingness: 0.900

Freq. Itemset: {'BISCUIT', 'COCK', 'CORNFLAKES', 'COFFEE'}

Rules: ['COCK', 'CORNFLAKES'] -> ['BISCUIT', 'COFFEE']

Conf: 1.000

Supp: 0.100

Lift: 0.500

Comprehensibility: 1.000

Coverage: 1.000

Interestingness: 0.900

Freq. Itemset: {'BISCUIT', 'COCK', 'CORNFLAKES', 'COFFEE'}

Rules: ['BISCUIT', 'COCK', 'COFFEE'] -> ['CORNFLAKES']

Conf: 1.000

Supp: 0.100

Lift: 0.167

Comprehensibility: 0.500

Coverage: 0.333

Interestingness: 0.300

Freq. Itemset: {'BISCUIT', 'COCK', 'CORNFLAKES', 'COFFEE'}

Rules: ['BISCUIT', 'COCK', 'CORNFLAKES'] -> ['COFFEE']

Conf: 1.000

Supp: 0.100

Lift: 0.125

Comprehensibility: 0.500

Coverage: 0.250

Interestingness: 0.225

Freq. Itemset: {'BISCUIT', 'COCK', 'CORNFLAKES', 'COFFEE'}

Rules: ['BISCUIT', 'CORNFLAKES', 'COFFEE'] -> ['COCK']

Conf: 1.000

Supp: 0.100

Lift: 0.333

Comprehensibility: 0.500

Coverage: 0.667

Interestingness: 0.600

Freq. Itemset: {'BISCUIT', 'COCK', 'CORNFLAKES', 'COFFEE'}

Rules: ['COCK', 'CORNFLAKES', 'COFFEE'] -> ['BISCUIT']

Conf: 1.000

Supp: 0.100

Lift: 0.143

Comprehensibility: 0.500

Coverage: 0.286

Interestingness: 0.257

Freq. Itemset: {'JAM', 'MAGGI', 'MILK', 'BREAD'}

Rules: ['JAM', 'MILK'] -> ['MAGGI', 'BREAD']

Conf: 1.000

Supp: 0.050

Lift: 0.333

Comprehensibility: 1.000

Coverage: 0.333

Interestingness: 0.317

Freq. Itemset: {'JAM', 'MAGGI', 'MILK', 'BREAD'}

Rules: ['MAGGI', 'MILK'] -> ['JAM', 'BREAD']

Conf: 1.000

Supp: 0.050

Lift: 0.500

Comprehensibility: 1.000

Coverage: 0.500

Interestingness: 0.475

Freq. Itemset: {'JAM', 'MAGGI', 'MILK', 'BREAD'}

Rules: ['JAM', 'MILK', 'BREAD'] -> ['MAGGI']

Conf: 1.000

Supp: 0.050

Lift: 0.200

Comprehensibility: 0.500

Coverage: 0.200

Interestingness: 0.190

Freq. Itemset: {'JAM', 'MAGGI', 'MILK', 'BREAD'}

Rules: ['MAGGI', 'MILK', 'BREAD'] -> ['JAM']

Conf: 1.000

Supp: 0.050

Lift: 0.500

Comprehensibility: 0.500

Coverage: 0.500

Interestingness: 0.475

Freq. Itemset: {'JAM', 'MAGGI', 'MILK', 'BREAD'}

Rules: ['JAM', 'MAGGI', 'MILK'] -> ['BREAD']

Conf: 1.000

Supp: 0.050

Lift: 0.077

Comprehensibility: 0.500

Coverage: 0.077

Interestingness: 0.073

Freq. Itemset: {'JAM', 'MAGGI', 'TEA', 'BREAD'}

Rules: ['JAM', 'TEA'] -> ['MAGGI', 'BREAD']

Conf: 1.000

Supp: 0.050

Lift: 0.333

Comprehensibility: 1.000

Coverage: 0.333

Interestingness: 0.317

Freq. Itemset: {'JAM', 'MAGGI', 'TEA', 'BREAD'}

Rules: ['JAM', 'TEA', 'BREAD'] -> ['MAGGI']

Conf: 1.000

Supp: 0.050

Lift: 0.200

Comprehensibility: 0.500

Coverage: 0.200

Interestingness: 0.190

Freq. Itemset: {'JAM', 'MAGGI', 'TEA', 'BREAD'}

Rules: ['JAM', 'MAGGI', 'TEA'] -> ['BREAD']

Conf: 1.000

Supp: 0.050

Lift: 0.077

Comprehensibility: 0.500

Coverage: 0.077

Interestingness: 0.073

Freq. Itemset: {'CORNFLAKES', 'MILK', 'COFFEE', 'TEA'}

Rules: ['MILK', 'COFFEE'] -> ['CORNFLAKES', 'TEA']

Conf: 1.000

Supp: 0.050

Lift: 0.500

Comprehensibility: 1.000

Coverage: 0.500

Interestingness: 0.475

Freq. Itemset: {'CORNFLAKES', 'MILK', 'COFFEE', 'TEA'}

Rules: ['TEA', 'COFFEE'] -> ['CORNFLAKES', 'MILK']

Conf: 1.000

Supp: 0.050

Lift: 0.500

Comprehensibility: 1.000

Coverage: 0.500

Interestingness: 0.475

Freq. Itemset: {'CORNFLAKES', 'MILK', 'COFFEE', 'TEA'}

Rules: ['TEA', 'MILK'] -> ['CORNFLAKES', 'COFFEE']

Conf: 1.000

Supp: 0.050

Lift: 0.250

Comprehensibility: 1.000

Coverage: 0.250

Interestingness: 0.237

Freq. Itemset: {'CORNFLAKES', 'MILK', 'COFFEE', 'TEA'}

Rules: ['CORNFLAKES', 'MILK', 'COFFEE'] -> ['TEA']

Conf: 1.000

Supp: 0.050

Lift: 0.143

Comprehensibility: 0.500

Coverage: 0.143

Interestingness: 0.136

Freq. Itemset: {'CORNFLAKES', 'MILK', 'COFFEE', 'TEA'}

Rules: ['CORNFLAKES', 'COFFEE', 'TEA'] -> ['MILK']

Conf: 1.000

Supp: 0.050

Lift: 0.200

Comprehensibility: 0.500

Coverage: 0.200

Interestingness: 0.190

Freq. Itemset: {'CORNFLAKES', 'MILK', 'COFFEE', 'TEA'}

Rules: ['TEA', 'MILK', 'COFFEE'] -> ['CORNFLAKES']

Conf: 1.000

Supp: 0.050

Lift: 0.167

Comprehensibility: 0.500

Coverage: 0.167

Interestingness: 0.158

Freq. Itemset: {'CORNFLAKES', 'MILK', 'COFFEE', 'TEA'}

Rules: ['CORNFLAKES', 'MILK', 'TEA'] -> ['COFFEE']

Conf: 1.000

Supp: 0.050

Lift: 0.125

Comprehensibility: 0.500

Coverage: 0.125

Interestingness: 0.119

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\*\*\*\*\*Rule mining using exact mining\*\*\*\*

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-----------------------Association Rule-------------------

Freq. Itemset: {'JAM', 'MAGGI'}

Rules: ['JAM'] -> ['MAGGI']

Conf: 1.000

Supp: 0.100

Lift: 0.200

Comprehensibility: 1.000

Coverage: 0.400

Interestingness: 0.360

\*\*\*\*\*\*Rule & Time Comparison\*\*\*\*\*\*\*

-------Rule count in 1 itretion----

Minimum support: 0.02

Rule count for apriori algorithm: 63

Rule count for exact mining algorithm: 1

Execution time for Apriori algorithm: 0.0531 seconds

Execution time for ExactMining algorithm: 0.0189 seconds

-------Rule count in 2 itretion----

Minimum support: 0.06999999999999999

Rule count for apriori algorithm: 23

Rule count for exact mining algorithm: 1

Execution time for Apriori algorithm: 0.0065 seconds

Execution time for ExactMining algorithm: 0.008 seconds

-------Rule count in 3 itretion----

Minimum support: 0.12

Rule count for apriori algorithm: 1

Rule count for exact mining algorithm: 0

Execution time for Apriori algorithm: 0.0024 seconds

Execution time for ExactMining algorithm: 0.0089 seconds

-------Rule count in 4 itretion----

Minimum support: 0.16999999999999998

Rule count for apriori algorithm: 0

Rule count for exact mining algorithm: 0

Execution time for Apriori algorithm: 0.0017 seconds

Execution time for ExactMining algorithm: 0.0096 seconds

-------Rule count in 5 itretion----

Minimum support: 0.22000000000000003

Rule count for apriori algorithm: 0

Rule count for exact mining algorithm: 0

Execution time for Apriori algorithm: 0.001 seconds

Execution time for ExactMining algorithm: 0.0059 seconds

-------Rule count in 6 itretion----

Minimum support: 0.27

Rule count for apriori algorithm: 0

Rule count for exact mining algorithm: 0

Execution time for Apriori algorithm: 0.0008 seconds

Execution time for ExactMining algorithm: 0.011 seconds

-------Rule count in 7 itretion----

Minimum support: 0.32

Rule count for apriori algorithm: 0

Rule count for exact mining algorithm: 0

Execution time for Apriori algorithm: 0.0007 seconds

Execution time for ExactMining algorithm: 0.0149 seconds

-------Rule count in 8 itretion----

Minimum support: 0.37

Rule count for apriori algorithm: 0

Rule count for exact mining algorithm: 0

Execution time for Apriori algorithm: 0.0006 seconds

Execution time for ExactMining algorithm: 0.0095 seconds

-------Rule count in 9 itretion----

Minimum support: 0.42000000000000004

Rule count for apriori algorithm: 0

Rule count for exact mining algorithm: 0

Execution time for Apriori algorithm: 0.0006 seconds

Execution time for ExactMining algorithm: 0.0003 seconds

-------Rule count in 10 itretion----

Minimum support: 0.47000000000000003

Rule count for apriori algorithm: 0

Rule count for exact mining algorithm: 0

Execution time for Apriori algorithm: 0.0006 seconds

Execution time for ExactMining algorithm: 0.0002 seconds

-------Rule count in 11 itretion----

Minimum support: 0.52

Rule count for apriori algorithm: 0

Rule count for exact mining algorithm: 0

Execution time for Apriori algorithm: 0.0005 seconds

Execution time for ExactMining algorithm: 0.0002 seconds

-------Rule count in 12 itretion----

Minimum support: 0.5700000000000001

Rule count for apriori algorithm: 0

Rule count for exact mining algorithm: 0

Execution time for Apriori algorithm: 0.0005 seconds

Execution time for ExactMining algorithm: 0.0002 seconds

-------Rule count in 13 itretion----

Minimum support: 0.62

Rule count for apriori algorithm: 0

Rule count for exact mining algorithm: 0

Execution time for Apriori algorithm: 0.0005 seconds

Execution time for ExactMining algorithm: 0.0003 seconds

\*\*\*\*\*\*\*Graph Comarison\*\*\*\*\*\*\*\*



