Methods :

Apriori Algorithm:

Given data set is as follows:

id Values

101 A,B,C,D,E

102 A,C,D

103 D,E

104 B,C,E

105 A,B,D,E

106 A,B

107 B,D,E

108 A,B,D

109 A,D

110 D,E

MIN SUPPORT = 3

THRESHOLD – 30 %

Step – 1 :

A 6

B 6

C 3

D 8

E 6

As all the values are greater than or equal to the minimum support all are considered.

Step – 2:

A,B 4

A,C 2

A,D 5

A,E 2

B,C 2

B,D 4

B,E 4

C,D 2

C,E 2

D,E 5

As the min support = 3 we need to remove which are less than 3.

A,B 4

A,D 5

B,D 4

B,E 4

D,E 5

Step – 3 :

A,B,D 3

B,D,E 3

Step – 4 :

a){A,B,D} – First b) {B,D,E} – Second

{A, B} => {D} { B,D} => {E}

Confidence = support {A,B,D} / support {A, B} = (3/ 4)\* 100 = 75% Confidence = support {B,D,E} / support {B,D} = (3/ 4)\* 100 = 75%

{A, D} => {B} {B,E} => {D}

Confidence = support {A,B,D} / support {A, D} = (3/ 5)\* 100 = 60% Confidence = support {B,D,E} / support {B, E} = (3/ 4)\* 100 = 75%

{B, D} => {A} {D,E} => {B}

Confidence = support {A,B,D } / support {B,D} = (3/ 4)\* 100 = 75% Confidence = support {B,D,E} / support {D,E} = (3/ 5)\* 100 = 60%

{A} => {B, D} {B} => {D,E}

Confidence = support {A, D, B} / support {A} = (3/ 6)\* 100 = 50% Confidence = support {B,D,E} / support {B} = (3/ 6)\* 100 = 50%

{B} => {A, D} {D} => {B,E}

Confidence = support {A, B, D} / support {B} = (3/ 6)\* 100 = 50% Confidence = support {B,D,E} / support {D} = (3/ 8)\* 100 = 37.5%

{D} => {A, B} {E} => {B,D}

Confidence = support {A,B,D} / support {D} = (3/ 8)\* 100 = 37.5% Confidence = support {B,D,E} / support {E} = (3/ 6)\* 100 = 50%

all the above association rules are strong if minimum confidence threshold is 30%.