Transaction	Itemset
T1	I1, I2, I3
T2	I2, I3, I4
T3	I4, I5
T4	I1, I2, I4
T5	I1, I2, I3, I5
T6	I1, I2, I3, I4

Support 50%, Confidence 60%

Products: I1, I2, I3, I4, I5

1-itemset	Support-Count
I1	4
I2	5
I3	4
I4	4
I5	2 X

Minimum-support Count =

$50\% \times 5$

$= 2.5$

Thus we remove I_5 $\{2 < 2.5\}$

2-itemset	Support-Count
I1, I2	4
I1, I3	3
I1, I4	3
I2, I3	4
I2, I4	3
I3, I4	2 X

We remove I_3, I_4

3-itemset	Support-Count
I_1, I_2, I_3	3
I_1, I_2, I_4	2 X
I_1, I_3, I_4	1 X
I_2, I_3, I_4	2 X

There is no 4-itemset, hence we stop.

Association Rules:

Confidence = 60%

Confidence $(X \to Y) = P(Y|X)$

$= P(X \cup Y) / P(X)$

6- Frequent itemsets:

$\{I_1, I_2\}$, $\{I_1, I_3\}$, $\{I_1, I_4\}$

$\{I_2, I_3\}$, $\{I_2, I_4\}$, $\{I_1, I_2, I_3\}$

Candidate Rules.

For $\{I_1, I_2\}$

$I_1 > I_2$ $4|4 = 100\%$

$I_2 > I_1$ $4|5 = 80\%$

For $\{I_1, I_3\}$

$I_1 > I_3$ $3|4 = 75\%$

$I_3 > I_1$ $3|4 = 75\%$

For $\{I_1, I_4\}$ $3|4 = 75\%$

$I_1 > I_4$ $3|4 = 75\%$

$I_4 > I_1$

For $\{I_2, I_3\}$

$I_2 > I_3$ $4|5 = 80\%$

$I_3 > I_2$ $4|4 = 100\%$

For $\{I_2, I_4\}$

$I_2 > I_4$ $3|5 = 60\%$

$I_4 > I_2$ $3|4 = 75\%$

For $\{I_1, I_2, I_3\}$.

$I_1, I_2 \rightarrow I_3$	$3/4 = 75\%$
$I_1, I_3 \rightarrow I_2$	$3/3 = 100\%$
$I_2, I_3 \rightarrow I_1$	$3/4 = 75\%$
$I_1 \rightarrow I_2, I_3$	$3/4 = 75\%$
$I_2 \rightarrow I_1, I_3$	$3/5 = 60\%$
$I_3 \rightarrow I_1, I_2$	$3/4 = 75\%$

All are strong since they are $\geq 60\%$, which is the Confidence.