

First, we need to find out all the frequent itemsets. (see exercise 6)

We ignore the itemsets that have only one item, because they will only have one nonempty subset.

P1, p2

Confidence(P1  $\rightarrow$  p2) =  $3/6 = 0.5 < 70\%$ , so rejected.

Confidence (p2  $\rightarrow$  p1) =  $3/4 = 0.75 > 70\%$ , so **accepted**.

P1, p3

Confidence(p1  $\rightarrow$  p3) =  $3/6 = 0.5 < 70\%$ , so rejected.

Confidence (p3  $\rightarrow$  p1) =  $3/4 = 0.75 > 70\%$ , so **accepted**.

P1, P4

Confidence (p1  $\rightarrow$  p4) =  $4/6 = 0.67 < 70\%$ , so rejected.

Confidence (p4  $\rightarrow$  p1) =  $4/4 = 1 > 70\%$ , so **accepted**.

P1, p5

Confidence (p1  $\rightarrow$  p5) =  $3/6 = 0.5 < 70\%$ , so rejected.

Confidence (p5  $\rightarrow$  p1) =  $3/4 = 0.75 > 70\%$ , so **accepted**.

P1, p6

Confidence (p1  $\rightarrow$  p6) =  $4 / 6 = 0.67 < 70\%$ , so rejected

Confidence(p6  $\rightarrow$  p1) =  $4 / 4 = 1 > 70\%$ , so **accepted**

P1, p7

Confidence(p1  $\rightarrow$  p7) =  $5 / 6 = 0.83 > 70\%$ , so **accepted**

Confidence (p7  $\rightarrow$  p1) =  $5 / 6 = 0.83 > 70\%$ , so **accepted**.

P2, p3

Confidence(p2  $\rightarrow$  p3) =  $3 / 4 = 0.75 > 70\%$ , so **accepted**

Confidence(p3  $\rightarrow$  p2) =  $3/4 = 0.75 > 70\%$ , so **accepted**

P2, p7

Confidence(p2 -> p7) =  $4 / 4 = 1 > 70\%$ , so **accepted**

Confidence(p7 -> p2) =  $4/6 = 0.67 < 70\%$ , so rejected

P3, p7

Confidence(p3 -> p7) =  $3 / 4 = 0.75 > 70\%$ , so **accepted**

Confidence(p7 -> p3) =  $3/ 6 = 0.5 < 70\%$ , so rejected

P4, p6

Confidence(p4 -> p6) =  $4 / 4 = 1 > 70\%$ , so **accepted**

Confidence (p6 -> p4) =  $4 / 4 = 1 > 70\%$ , so **accepted**

P4, p7

Confidence (p4 -> p7) =  $3 / 4 = 0.75 > 70\%$ , so accepted

Confidence (p7 -> p4) =  $3 / 6 = 0.5 < 70\%$ , so rejected

P5, p7

Confidence(p5 -> p7) =  $3 / 4 = 0.75 > 70\%$ , so accepted

Confidence (p7 -> p5) =  $3/ 6 = 0.5 < 70\%$ , so rejected.

P6, p7

Confidence(p6 -> p7) =  $3 / 4 = 0.75 > 70\%$ , so accepted

Confidence (p7 -> p6) =  $3 / 6 = 0.5 < 70\%$ , so rejected.

P1, p2, p3

Confidence (p1 -> p2,p3) =  $3 / 6 = 0.5 < 70\%$ , so rejected.

Confidence(p2,p3 -> p1) =  $3 / 3 = 1 > 70\%$ , so accepted

Confidence (p2 -> p1,p3) =  $3 / 4 = 0.75 > 70\%$ , so accepted

Confidence (p1,p3 -> p2) =  $3 / 3 = 1 > 70\%$ , so accepted

Confidence (p3 -> p1, p2) =  $3 / 4 = 0.75 > 70\%$ , so accepted

Confidence (p1, p2 -> p3) = 3 / 3 = 1 > 70%, so accepted

P1, p2, p7

Confidence (p1 -> p2, p7) = 3 / 6 = 0.5 < 70%, so rejected.

Confidence (p2, p7 -> p1) = 3 / 4 = 0.75 > 70%, so accepted

Confidence (p2 -> p1, p7) = 3 / 4 = 0.75 > 70%, so accepted

Confidence (p1, p7 -> p2) = 3 / 5 = 0.6 < 70%, so rejected.

Confidence (p7 -> p1, p2) = 3 / 6 = 0.5 < 70%, so rejected.

Confidence (p1, p2 -> p7) = 3 / 3 = 1 > 70%, so accepted

P1, p3, p7

Confidence(p1 -> p3, p7) = 3 / 6 = 0.5 < 70%, so rejected.

Confidence (p3, p7 -> p1) = 3 / 3 = 1 > 70%, so accepted

Confidence ( p3 -> p1, p7) = 3 / 4 = 0.75 > 70%, so accepted

Confidence (p1, p7 -> p3) = 3 / 5 = 0.6 < 70%, so rejected

Confidence (p7 -> p1, p3) = 3 / 6 = 0.5 < 70%, so rejected

Confidence (p1, p3 -> p7) = 3 / 3 = 1 > 70%, so accepted

P1 ,p4, p6

Confidence (p1 -> p4, p6) = 4 / 6 = 0.67 < 70%, so rejected

Confidence (p4, p6 -> p1) = 4 / 4 = 1 > 70%, so accepted

Confidence (p4 -> p1,p6) = 4 / 4 = 1 > 70%, so accepted

Confidence (p1, p6 -> p4) = 4 / 4 = 1 > 70%, so accepted

Confidence (p6 -> p1, p4) = 4 / 4 = 1 > 70%, so accepted

Confidence (p1,p4 -> p6) = 4 / 4 = 1 > 70%, so accepted

P1,p4, p7

Confidence (p1 -> p4, p7) = 3 / 6 = 0.5 < 70%, so rejected.

Confidence (p4, p7 → p1) = 3 / 3 = 1 > 70%, so accepted.

Confidence (p4 → p1, p7) = 3 / 4 = 0.75 > 70%, so accepted.

Confidence (p1, p7 → p4) = 3 / 5 = 0.6 < 70%, so rejected.

Confidence (p7 → p1, p4) = 3 / 6 = 0.5 < 70%, so rejected.

Confidence (p1, p4 → p7) = 3 / 4 = 0.75 > 70%, so accepted.

P1, p5, p7

Confidence (p1 → p5, p7) = 3 / 6 = 0.5 < 70%, so rejected

Confidence (p5, p7 → p1) = 3 / 3 = 1 > 70%, so accepted

Confidence (p5 → p1, p7) = 3 / 4 = 0.75 > 70%, so accepted

Confidence (p1, p7 → p5) = 3 / 5 = 0.6 < 70%, so rejected

Confidence (p7 → p1, p5) = 3 / 6 = 0.5 < 70%, so rejected

Confidence (p1, p5 → p7) = 3 / 3 = 1 > 70%, so accepted

P1, p6, p7

Confidence(p1 → p6, p7) = 3 / 6 = 0.5 < 70%, so rejected

Confidence (p6, p7 → p1) = 3 / 3 = 1 > 70%, so accepted

Confidence ( p6 → p1, p7) = 3 / 4 = 0.75 > 70%, so accepted

Confidence (p1, p7 → p6) = 3 / 5 = 0.6 < 70%, so rejected

Confidence (p7 → p1, p6) = 3 / 6 = 0.5 < 70%, so rejected

Confidence (p1, p6 → p7) = 3 / 4 = 0.75 > 70%, so accepted

P2, p3, p7

Confidence (p2 → p3, p7) = 3 / 4 = 0.75 > 70%, so accepted

Confidence (p3, p7 → p2) = 3 / 3 = 1 > 70%, so accepted

Confidence (p3 → p2, p7) = 3 / 4 = 0.75 > 70%. So accepted

Confidence (p2, p7 → p3) = 3 / 4 = 0.75 > 70%, so accepted

Confidence (p7 → p2, p3) = 3 / 6 = 0.5 < 70%, so rejected

Confidence (p2, p3 → p7) = 3 / 3 = 1 > 70%, so accepted

P4, p6, p7

Confidence (p4 → p6, p7) = 3 / 4 = 0.75 > 70%, so accepted

Confidence (p6, p7 → p4) = 3 / 3 = 1 > 70%, so accepted

Confidence (p6 → p4, p7) = 3 / 4 = 0.75 > 70%, so accepted

Confidence (p4, p7 → p6) = 3 / 3 = 1 > 70%, so accepted

Confidence (p7 → p4, p6) = 3 / 6 = 0.5 < 70%, so rejected

Confidence (p4, p6 → p7) = 3 / 4 = 0.75 > 70%, so accepted

P1, p2, p3, p7

Confidence (p1 → p2, p3, p7) = 3 / 6 = 0.5 < 70%, so rejected

Confidence (p2, p3, p7 → p1) = 3 / 3 = 1 > 70%, so accepted

Confidence (p2 → p1, p3, p7) = 3 / 4 = 0.75 > 70%, so accepted

Confidence (p1, p3, p7 → p2) = 3 / 3 = 1 > 70%, so accepted

Confidence (p3 → p1, p2, p7) = 3 / 4 = 0.75 > 70%, so accepted

Confidence (p1, p2, p7 → p3) = 3 / 3 = 1 > 70%, so accepted

Confidence (p7 → p1, p2, p3) = 3 / 6 = 0.5 < 70%, so rejected

Confidence (p1, p2, p3 → p7) = 3 / 3 = 1 > 70%, so accepted

Confidence (p1, p2 → p3, p7) = 3 / 3 = 1 > 70%, so accepted

Confidence (p3, p7 → p1, p2) = 3 / 4 = 0.75 > 70%, so accepted

Confidence (p1, p3 → p2, p7) = 3 / 3 = 1 > 70%, so accepted

Confidence (p2, p7 → p1, p3) = 3 / 4 = 0.75 > 70%, so accepted

Confidence (p1, p7 → p2, p3) = 3 / 5 = 0.6 < 70%, so rejected

Confidence (p2, p3 → p1, p7) = 3 / 3 = 1 > 70%, so accepted

P1, p4, p6, p7

Confidence (p1 -> p4, p6, p7) =  $3 / 6 = 0.5 < 70\%$ , so rejected

Confidence (p4, p6, p7 -> p1) =  $3 / 3 = 1 > 70\%$ , so accepted

Confidence (p4 -> p1, p6, p7) =  $3 / 4 = 0.75 > 70\%$ , so accepted

Confidence (p1, p6, p7 -> p4) =  $3 / 3 = 1 > 70\%$ , so accepted

Confidence (p6 -> p1, p4, p7) =  $3 / 4 = 0.75 > 70\%$ , so accepted

Confidence (p1, p4, p7 -> p6) =  $3 / 3 = 1 > 70\%$ , so accepted

Confidence (p7 -> p1, p4, p6) =  $3 / 6 = 0.5 < 70\%$ , so accepted

Confidence (p1, p4 -> p6, p7) =  $3 / 4 = 0.75 > 70\%$ , so accepted

Confidence (p6, p7 -> p1, p4) =  $3 / 3 = 1 > 70\%$ , so accepted

Confidence (p1, p6 -> p4, p7) =  $3 / 4 = 0.75 > 70\%$ , so accepted

Confidence (p4, p7 -> p1, p6) =  $3 / 3 = 1 > 70\%$ , so accepted

Confidence (p1, p7 -> p4, p6) =  $3 / 5 = 0.6 < 70\%$ , so rejected

Confidence (p4, p6 -> p1, p7) =  $3 / 4 = 0.75 > 70\%$ , so accepted