**Transactions:**

1. {A,B,C,D,E}
2. {B,C}
3. {B,D}
4. {A,B,D,E}
5. {A,D}

**Items:**

* A
* B
* C
* D
* E

**Total Transactions (N):** 5

**Calculate Support for Each Item:**

* **Item A:**
  + Transactions containing A: 1, 4, 5
  + Support ​=0.6
* **Item B:**
  + Transactions containing B: 1, 2, 3, 4
  + Support =0.8
* **Item CCC:**
  + Transactions containing C: 1, 2
  + Support =0.4
* **Item DDD:**
  + Transactions containing D: 1, 3, 4, 5
  + Support ​=0.8
* **Item EEE:**
  + Transactions containing E: 1, 4
  + Support ​=0.4

**Frequent 1-Itemsets (Support ≥ 0.5):**

* **{A}: 0.6**
* **{B}: 0.8**
* **{D}: 0.8**

**Candidate 2-Itemsets:**

* {A,B}
* {A,D}
* {B,D}

**Calculate Support for Each Candidate:**

* **{A,B}**
  + Transactions containing {A,B}: 1, 4
  + Support =0.4 (Not frequent < 0.5)
* **{A,D}\{A, D\}{A,D}:**
  + Transactions containing {A,D}: 1, 4, 5
  + Support ​=0.6 (Frequent)
* **{B,D}\{B, D\}{B,D}:**
  + Transactions containing {B,D}: 1, 3, 4
  + Support =0.6 (Frequent)

**Frequent 2-Itemsets (Support ≥ 0.5):**

* {A,D}: 0.6
* {B,D}: 0.6

We can attempt to generate {A,B,D}, but since {A,B} is not frequent (support is 0.4), we cannot proceed. Therefore, there are no frequent 3-itemsets.

**Rule A→D:**

* **Confidence:**
* **Conclusion:** Confidence =1 ≥ 0.8 so A→D meets the threshold.

**Rule D→A:**

* **Confidence:**
* **Conclusion:** Confidence =0.75 < 0.8, so D→A does not meet the threshold.

**Final Answer**

**Frequent Itemsets:**

* 1-Itemsets: {A},{B},{D}
* 2-Itemsets: {A,D},{B,D}
* No Frequent 3-Itemsets

**Rule Selected by Confidence Threshold of 0.8:**

* **A→D** is selected because its confidence is 1.0, which meets the threshold.
* **D→A** is not selected because its confidence is 0.75, which does not meet the threshold.表單的頂端

表單的底部