# Apriori: A Candidate Generation & Test Approach

- Outline of Apriori (level-wise, candidate generation and test)
  - Initially, scan DB once to get frequent 1-itemset
  - Repeat
    - Generate length-(k+1) candidate itemsets from length-k frequent itemsets
    - Test the candidates against DB to find frequent (k+1)-itemsets
    - Set k := k +1
  - Until no frequent or candidate set can be generated
  - Return all the frequent itemsets derived

# The Apriori Algorithm (Pseudo-Code)

$C_k$: Candidate itemset of size k

$F_k$ : Frequent itemset of size k

```
K := 1;
F_k := {frequent items};   // frequent 1-itemset
While (F_k != ∅) do {     // when F_k is non-empty
   C_{k+1} := candidates generated from F_k;  // candidate generation
   Derive F_{k+1} by counting candidates in C_{k+1} with respect to TDB at minsup;
   k := k + 1
   }
return ∪_k F_k            // return F_k generated at each level
```

# The Apriori Algorithm—An Example