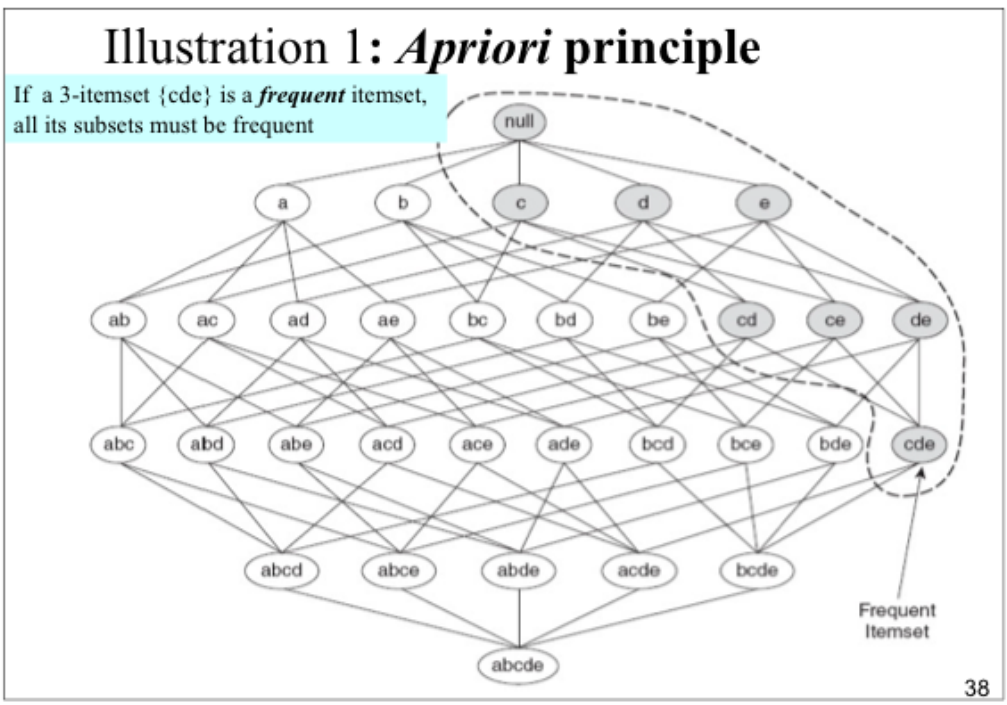
目的：找到 frequent itemset

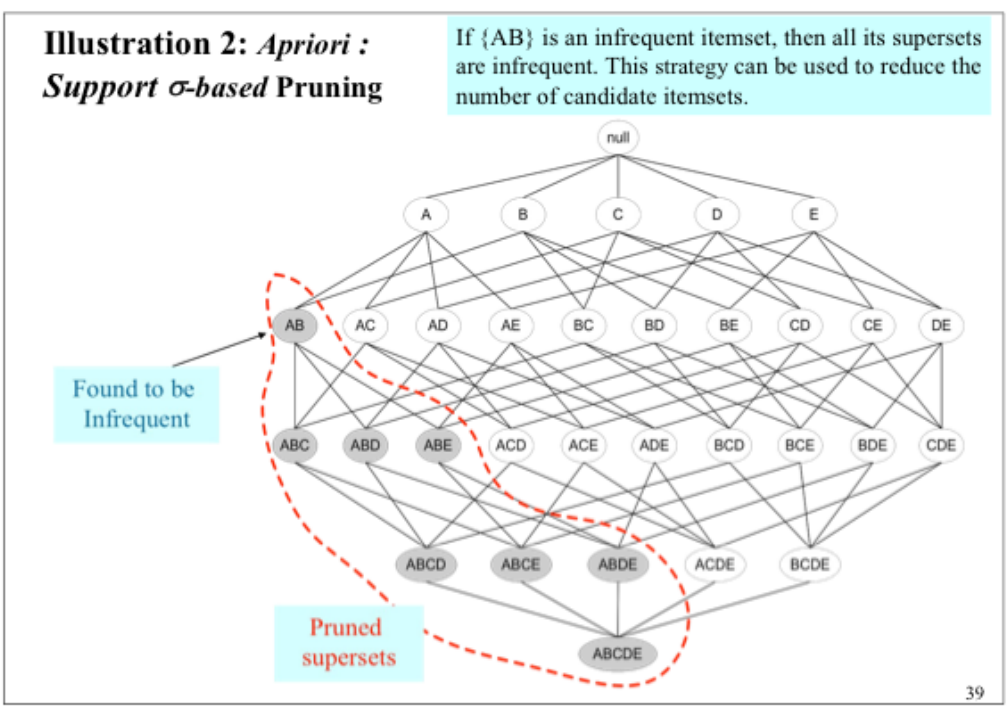
① 如果一个 itemset 是 frequent，那么其 subset 必为 frequent

c, d, e 为 frequent 则 c, d, e 组成的子节点也为 frequent

② 如果一个 itemset 是 infrequent，那么包含 其的必为 infrequent

ab 为 infrequent 则 ab 引出的所有子节点都为 infrequent

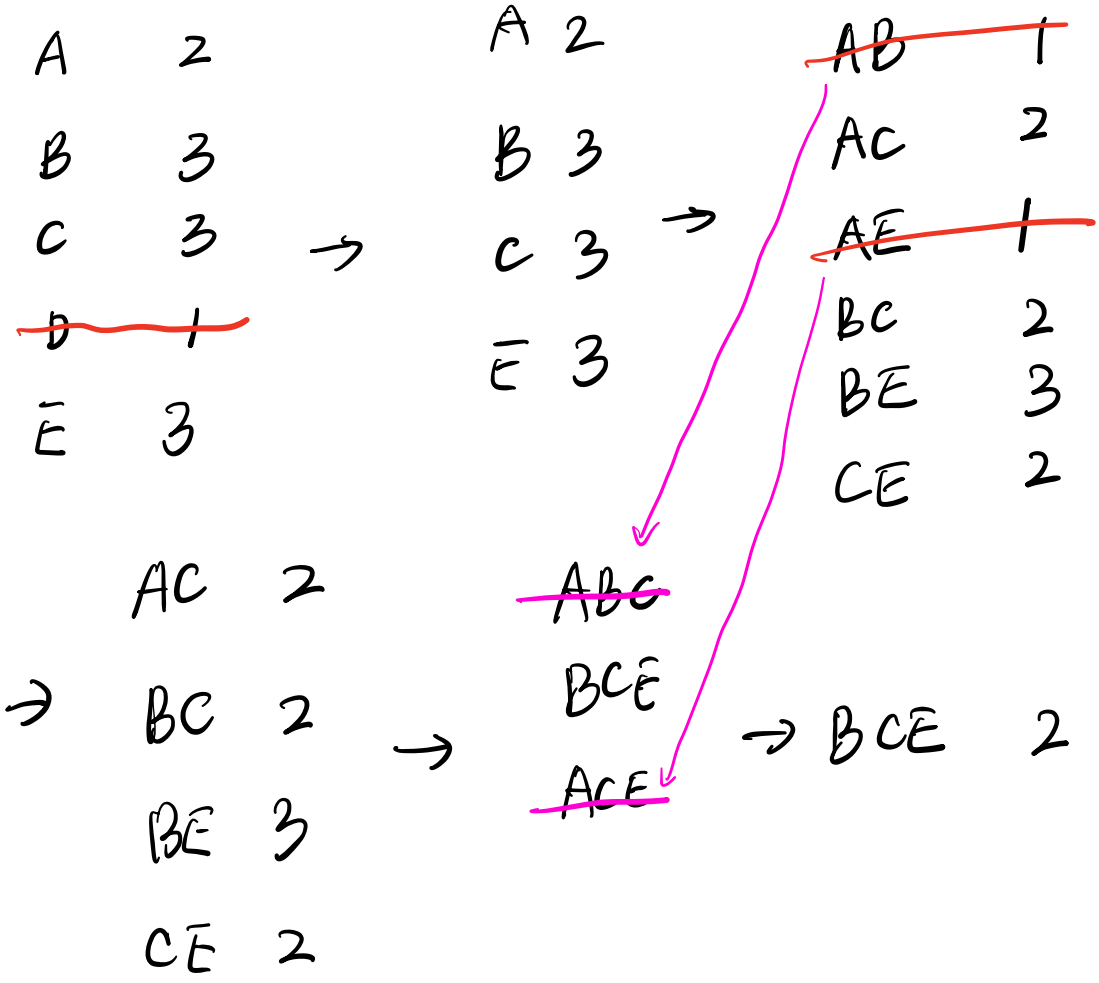




Database TDB

Tid	Items
10	A, C, D
20	B, C, E
30	A, B, C, E
40	B, E

minsup = 2



Example 1(a)

Consider the following transaction dataset, where each letter represents an item.

TID	Items Bought
1	N, E, W
2	N, O, W
3	W, E
4	O, N, E
5	O, W, N
6	G, O

(a) Assume that the minimum support is **30%**. Use the ***Apriori*** algorithm to find all the frequent itemsets in the dataset.

(b) Give two association rules which have a minimum confidence of 60%.

(a) minsup = 6 × 30% = 1.8 → 2

N 4
E 3
W 4
O 4
~~G 1~~

→ N 4, E 3, W 4, O 4

→ NE 2, NW 3, NO 3, EW 2, ~~EO 1~~, WO 2

→ NE 2, NW 3, NO 3, EW 2, WO 2

~~NEW 1~~

→ ~~NEO~~

NWO 2

~~EWO~~

→ NWO 2

(b)

$N\ W \rightarrow O \quad conf = \frac{2}{3}$

$N\ D \rightarrow W \quad conf = \frac{2}{3}$