4.2.5.4 FP Algorithm

Q (1) FP min sup = 2

(2) Apriori

TID	Items
1	{A,B}
2	{B,C,D}
3	{A,C,D,E}
4	{A,D,E}
5	{A,B,C}
6	{A,B,C,D}
7	{A}
8	{A,B,C}
9	{A,B,D}
10	{B,C,E}

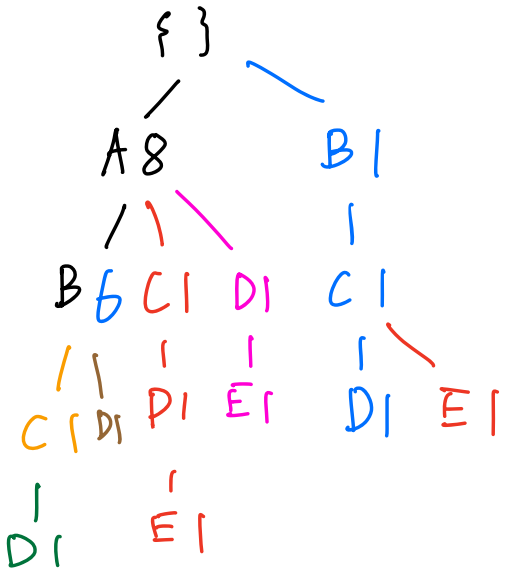
Solution ① Scan DB

itemset	σ
A	8
B	7
C	6
D	5
E	3

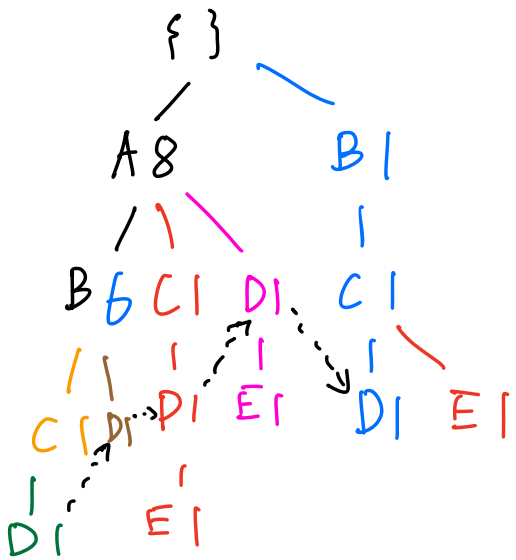
TID	Items
1	{A,B}
2	{B,C,D}
3	{A,C,D,E}
4	{A,D,E}
5	{A,B,C}
6	{A,B,C,D}
7	{A}
8	{A,B,C}
9	{A,B,D}
10	{B,C,E}

already sorted frequent list

② Fp Tree



③ CPB : D .



④ conditional patter base for D

PB = {(A:1, B:1, C:1)

(A:1, B:1)

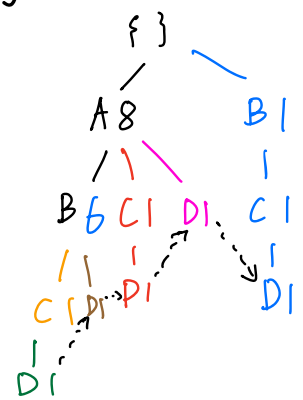
(A:1, C:1)

(A:1)

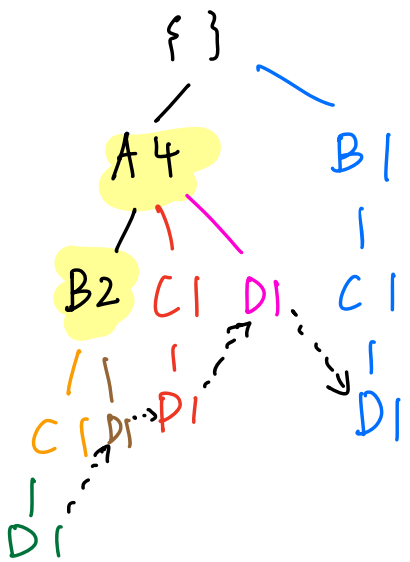
(B:1, C:1)}

sup of D = 5 ≥ 2 So {D} is freq. itemset

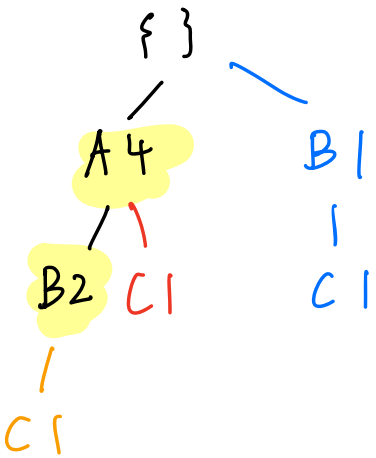
⑤ find D. CPT (a) prefix tree.



(b) update. count



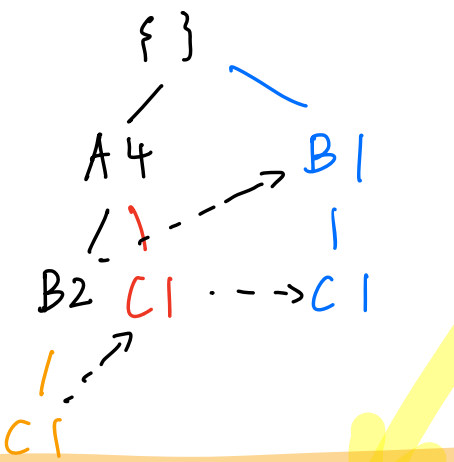
(c) delete D node



cd) delete no f.i.

A : 4 ≥ 2
B : 3 ≥ 2
C : 3 ≥ 2

ce) d condition tree is

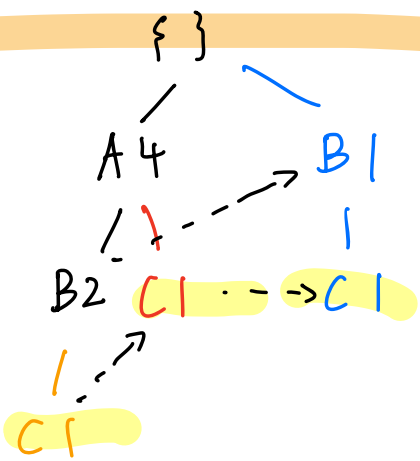


So we need to find cd bd ad Question

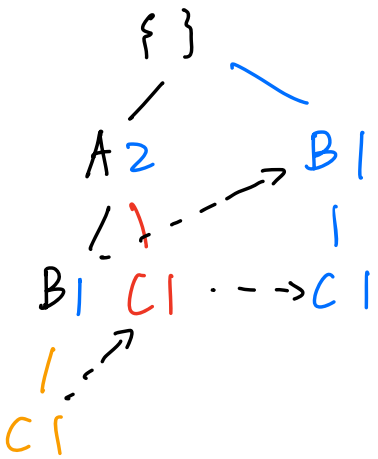
⑥ CD prefix path of C

sup of cd : 3 ≥ 2

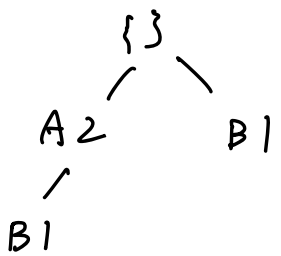
So {cd} is f.i



(b) update node



(c) delete C

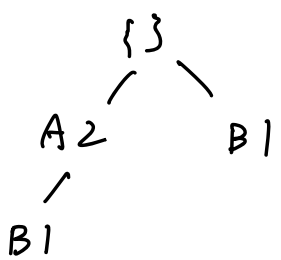


(d) delete sup

A : 2 ≥ 2

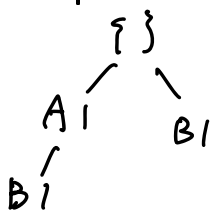
B : 2 ≥ 2

(e) cd : condition FP tree.

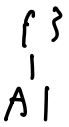


⑦ {bcd} sup : 2 ≥ 2 So {bcd} is f.i

(a) update



(b) delete B



(c) delete sup

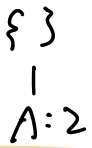
A:1 < 2 delete A

(d) {BCD} CFP

{}

That's why abcd isn't frequent item set

⑧ consider {ACD} prefix path from cd CFP

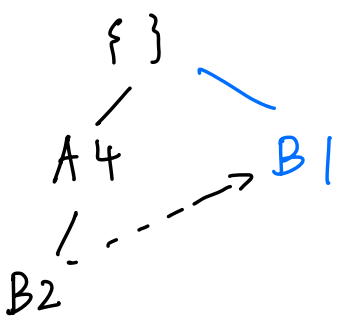


A:2 ≥ 2 So ACD is f. i

CD

BD

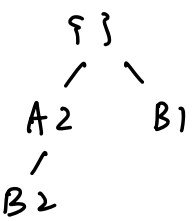
⑨ find BD prefix path from D CFP



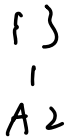
B:3 ≥ 2

So BD is f. i.

(a) update



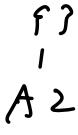
(b) delete B



(c) sup

A:2 ≥ 2

(d) BD CFP



So {A BD} is f. i

BD

AD

⑩ find AD prefix path from D CPF

{ }
|
A4

A : 4 ≥ 2

so AD is f.i

⑪ Frequent Itemset found

D AD BD CD ABD ACD BCD