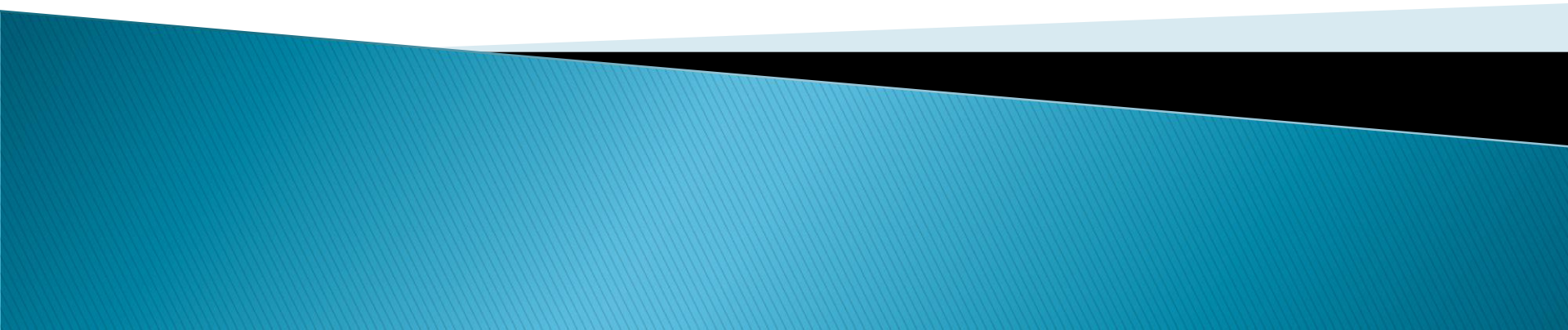


Data Mining

Assignment 04B Solution

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FP Growth Algorithm

Transaction Database

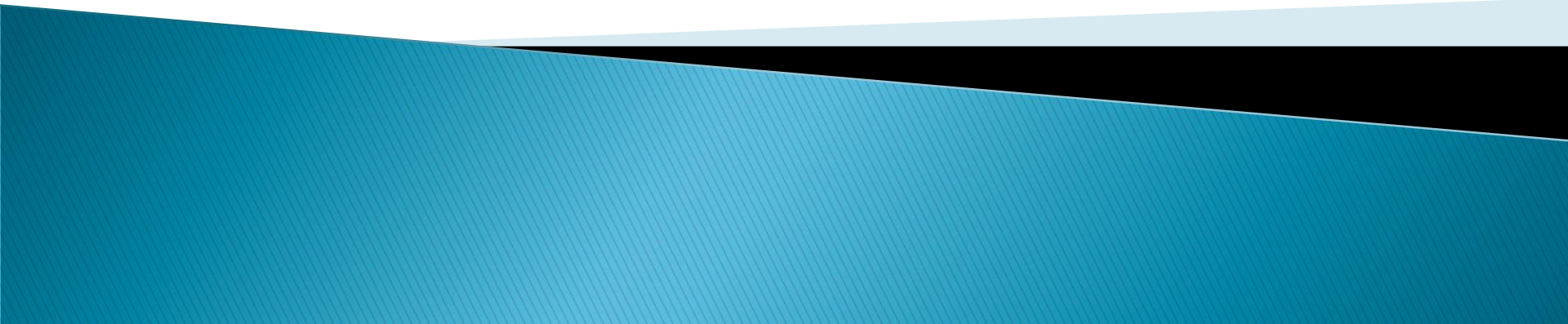
TID	Items purchased
1	E, A, D, B
2	D, A, C, E, B
3	C, A, B, E
4	B, A, D
5	D
6	D, B
7	A, D, E
8	B, C

1 - itemsets

Item	Support Count
B	6
D	6
A	5
E	4
C	3

Minimum Support Count = 3

Patterns Ending in C

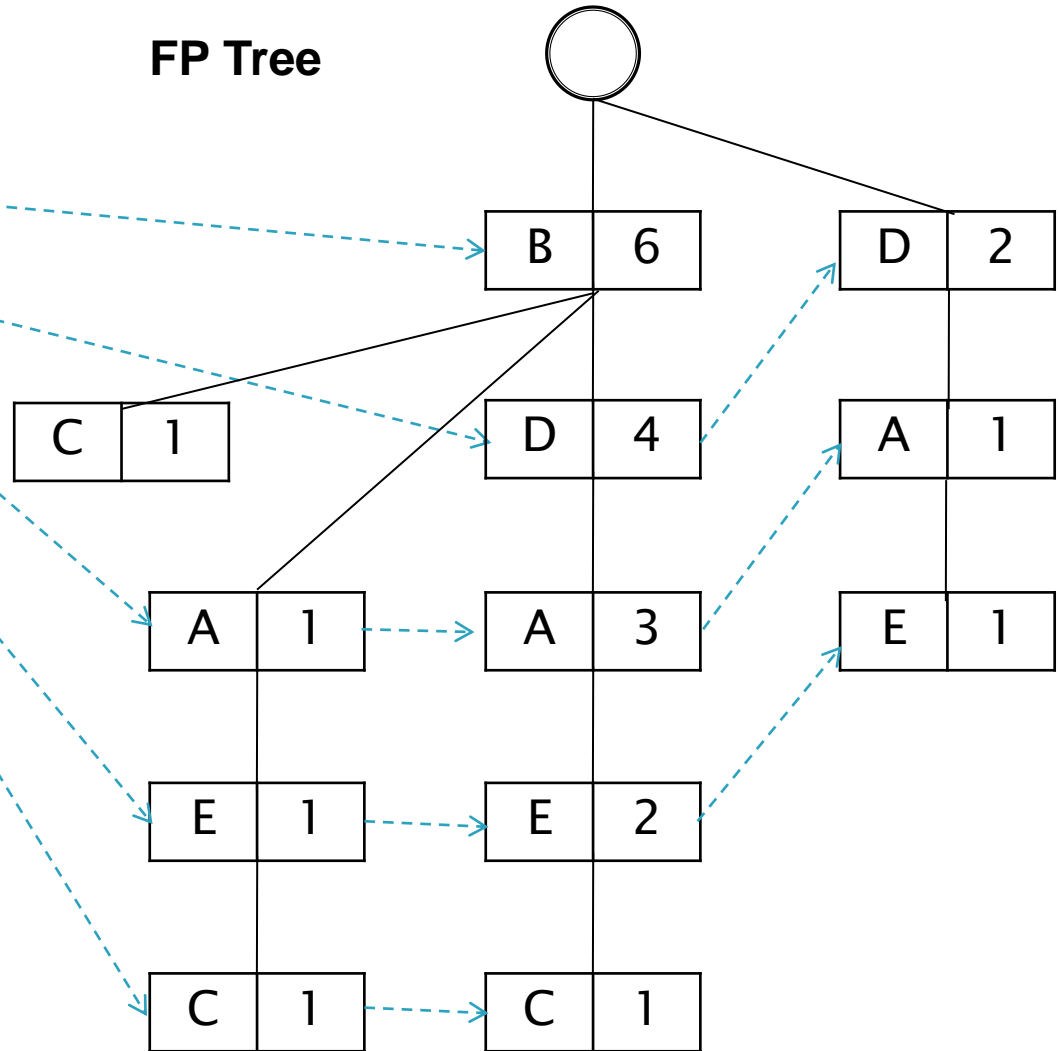


Item	Support Count	Node Link
B	6	
D	6	
A	5	
E	4	
C	3	

CPB for C

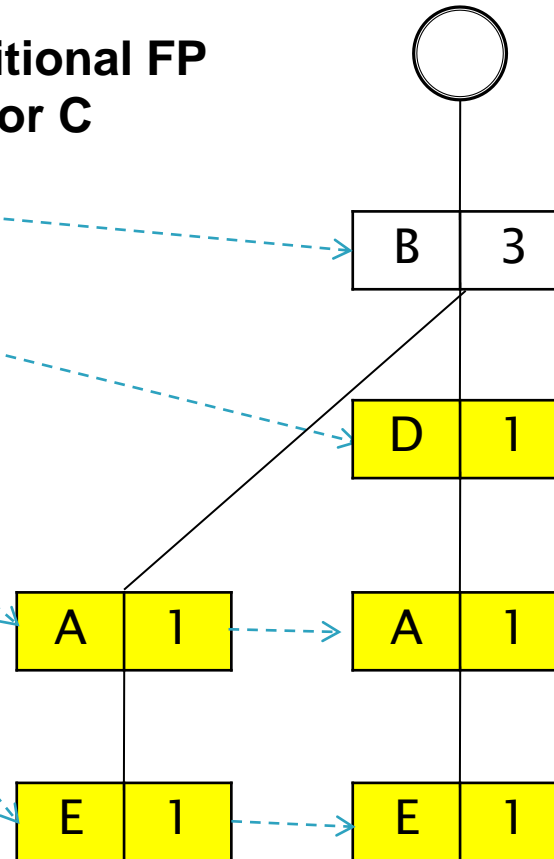
Pattern	Support Count
BDAE	1
BAE	1
B	1

FP Tree



Item	Support Count	Node Link
B	3	
D	1	
A	2	
E	2	

Conditional FP Tree for C



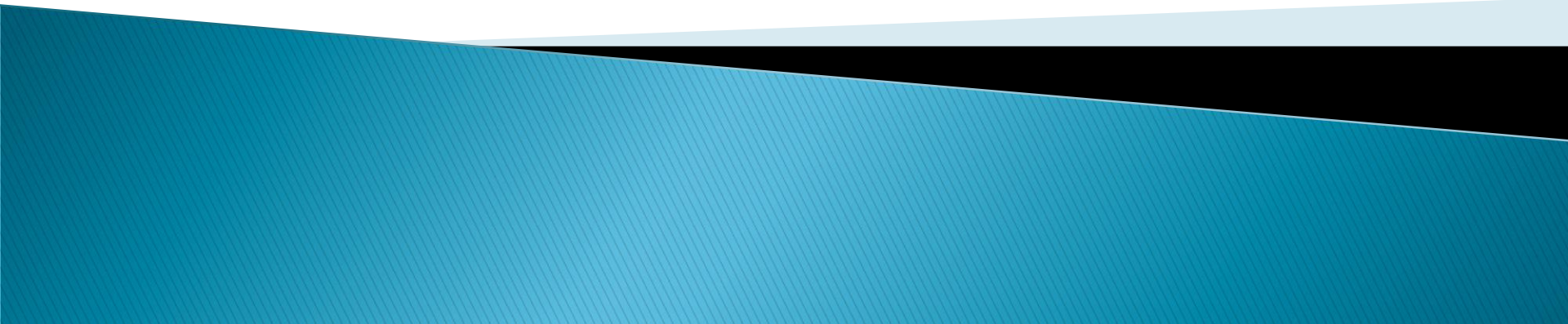
Generated Patterns

Pattern	Support Count
BC	3

Summary – Patterns Ending in C

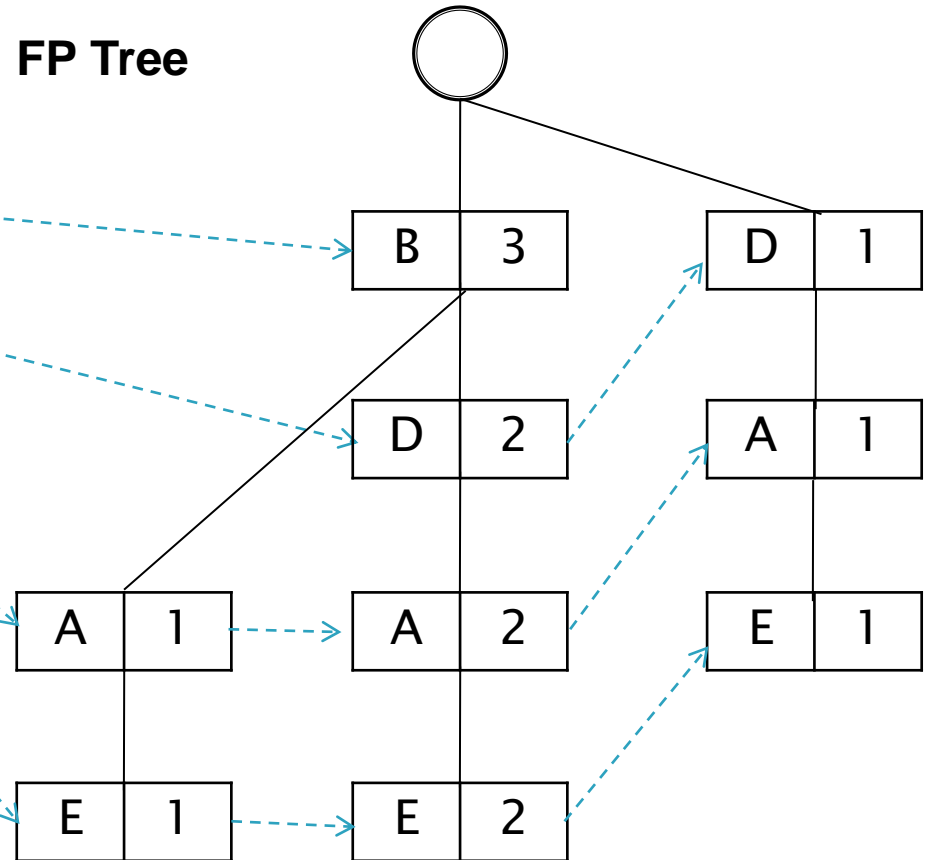
Pattern	Support Count
C	3
BC	3

Patterns Ending in E



Item	Support Count	Node Link
B	3	
D	3	
A	4	
E	4	

FP Tree



CPB for E

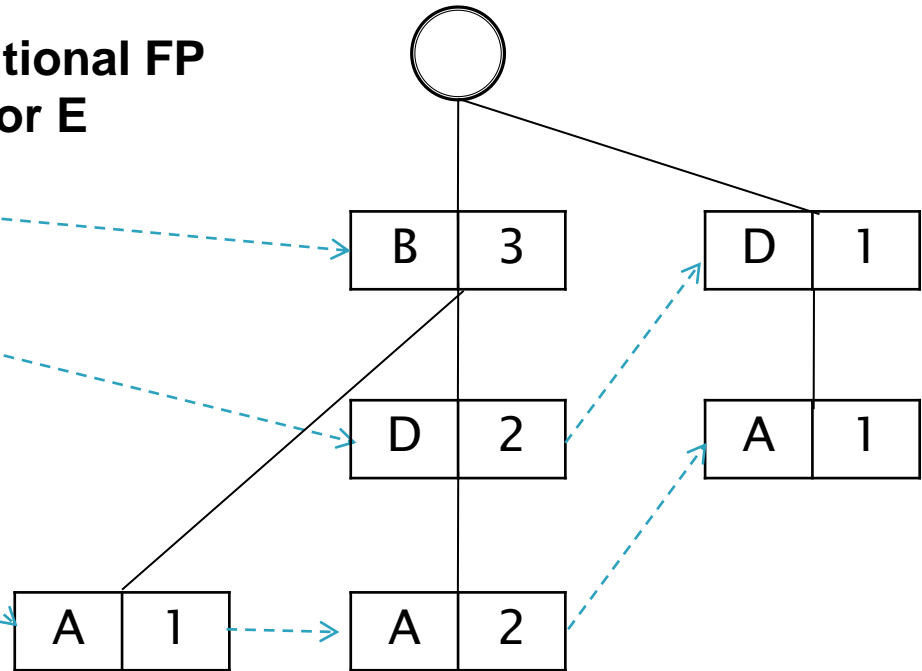
Pattern	Support Count
BA	1
BDA	2
DA	1

{BA:1}, {BDA:2}, {DA:1}

{BA:1}, {BDA:2}, {DA:1}

Item	Support Count	Node Link
B	3	
D	3	
A	4	

Conditional FP Tree for E



Multiple Paths

Iterate over items in header

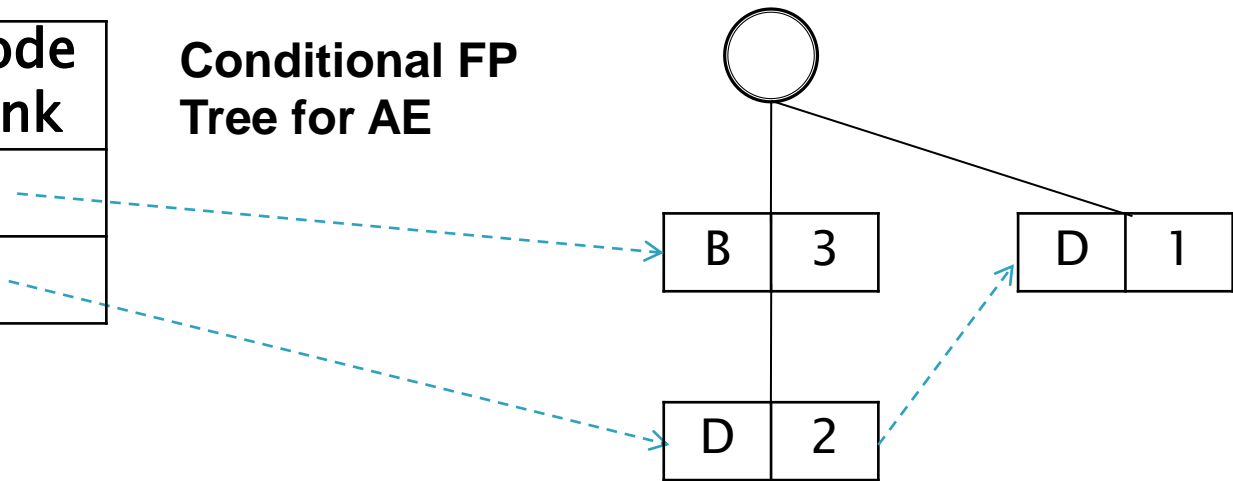
Item	Generated Pattern	CPB
B	BE:3	null
D	DE:3	B:2
A	AE:4	B:1, BD:2, D:1

↑
 β

{B:1}, {BD:2}, {D:1}

Item	Support Count	Node Link
B	3	
D	3	

Conditional FP Tree for AE



Multiple Paths

Iterate over items in header

Item	Generated Pattern	CPB
B	BAE:3	null
D	DAE:3	B:2

Summary – Patterns Ending in E

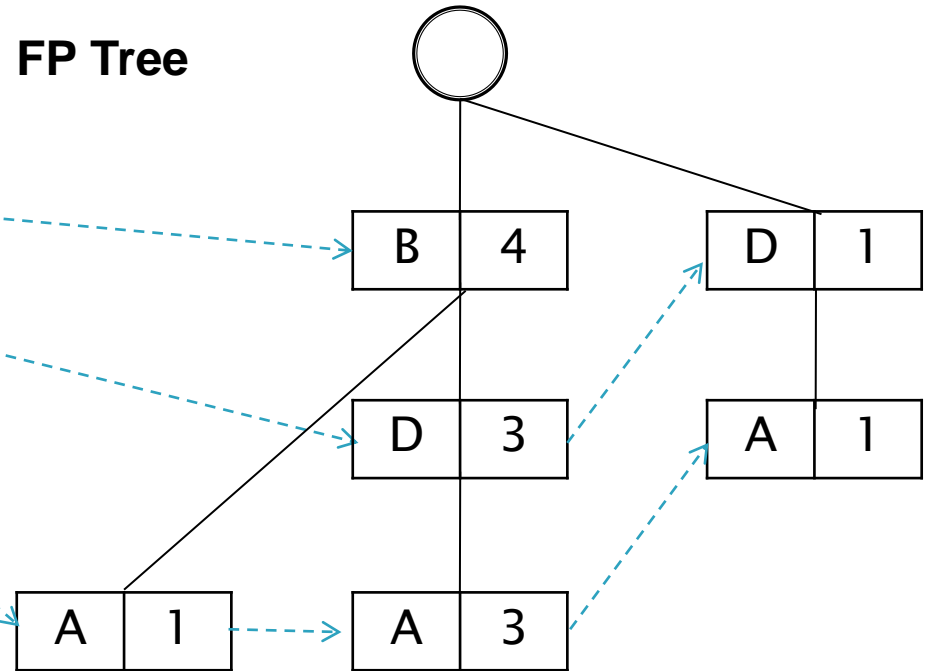
Pattern	Support Count
E	4
BE	3
DE	3
AE	4
BAE	3
DAE	3

Patterns Ending in A



Item	Support Count	Node Link
B	4	
D	4	
A	5	

FP Tree



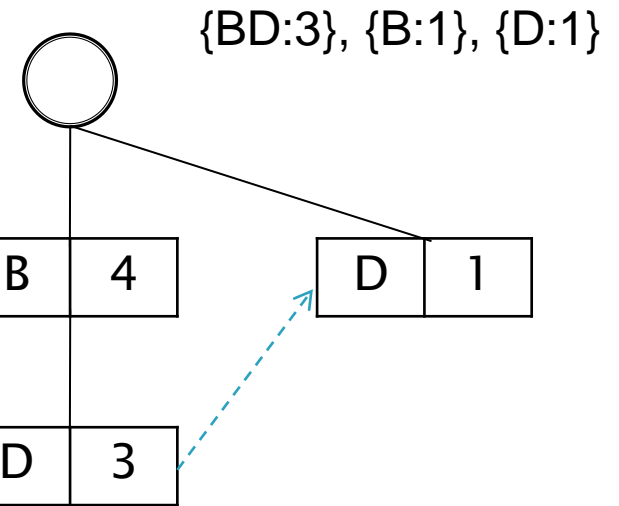
CPB for A

Pattern	Support Count
BD	3
B	1
D	1

{BD:3}, {B:1}, {D:1}

Item	Support Count	Node Link
B	4	
D	4	

Conditional FP Tree for A



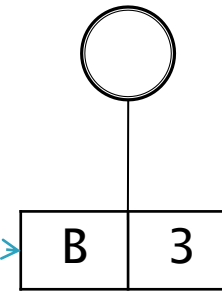
Multiple Paths

Iterate over items in header

Item	Generated Pattern	CPB
B	BA:4	null
D	DA:4	B:3

Item	Support Count	Node Link
B	3	

**Conditional FP
Tree for DA**



Generated Patterns

Pattern	Support Count
BDA	3

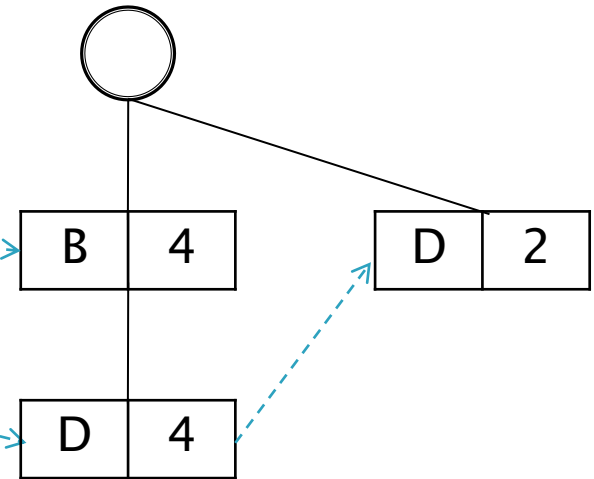
Summary – Patterns Ending in A

Pattern	Support Count
A	5
BA	4
DA	4
BDA	3

Patterns Ending in D

Item	Support Count	Node Link
B	4	
D	2	

FP Tree

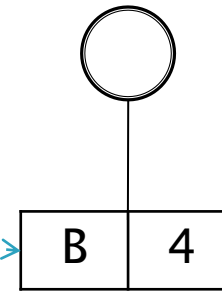


CPB for D

Pattern	Support Count
B	4

Item	Support Count	Node Link
B	4	

Conditional FP
Tree for D



Generated Patterns

Pattern	Support Count
BD	4

Summary – Patterns Ending in D

Pattern	Support Count
D	6
BD	4

Pattern	Support Count
C	3
BC	3

Pattern	Support Count
E	4
BE	3
DE	3
AE	4
BAE	3
DAE	3

Pattern	Support Count
A	5
BA	4
DA	4
BDA	3

Pattern	Support Count
D	6
BD	4

Pattern	Support Count
B	6

Thank You!