SYMBOLIC DATA MINING

· Frequent: It supp(X) > min-supp, then X is frequent

· [Closed-Itenset]: An itenset, doesn't have a superset with some supp

· Generator: An itenset, doesn't have a subset with some supp

146	A	B	C	b	E
1	X	X	20	×	X
2	X		X	2	
3	X	X	X	Y	X
4	J.É	X	X		X
5	X	X	X		X

Itemset: A, AB, BCE	1 One Size Larger Superset:
5-pport(A)=4	
Support (AB)=3	SAME X +
Support (BCE)=3	
Min = Sugget : Thoushold	SAME IXIY

APRIORI (breadth-first) (levelyise)

7 - 1 - 0 to - 1	
FC ₁ A 4 C D 1 E 4	$\frac{F_1}{A}$
FC ₂	$\frac{F_2}{F_2}$
AB 3 AC 3	AB 3 'AC 3 '
A E 3 B C 3	AE 3 ', BC 3 ',
BE 4 CE 3	BE 4 CE 3
FC3	F_3
AB C 2	ABC 2
ABE 3	ABE 3
ACE 2 BCE 3	BCE 3
FC4	Fa
ABCE 2 -	ABCE 2
FCs &	$Fl_s = 15$
Ø stop!	

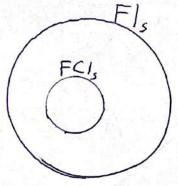
	,		_	_	
	A	B	C	0	E
1	X	X	h	X	X
2	X		X		
3	X	X	×		X
4		X	Х		X
5	X	X	X		X

min-supp=2

APRIORI-CLOSE (breadth-first) (levelwise)

Maria -			
FC ₁	F_1		A
A 4	itenset support closed?	1	X
B 4	B 4 50 10 1	2	X
C 4	1 C 4 GED 1	3	X
b 1 E 4	E 4 yerno,	4	
		5	X
FC ₂	$\frac{F_2}{V_1}$		mi
AB 3 AC 3	AB 3 yes no		
AE 3	AC 3 GO		
B C 3	BC 3 yes no		
BE 4 CE 3	BE 4 (JET) CE 3		
FC,	F_3		
ABC 2	literact upport closed?		
ABE 3	ABE 3 GES,		
ACE 2	BCE 3 Ger		
BCE 3			
	Fls=12		
FCG			
Ø stox	FCls=6		

min-supp=3



ECLAT(vertical)(depth-first)

	100	A	B	_	D	E	
1→ABDE		1	1	2	1	1	
2→AC		2	3	3		3	
3→ABCE		3	5	5		5	
BCE							

5-ABCE

	Α	B	C	ם	E
1	X	X		X	×
2	X		X	1	
3	X	X	X	i-qu	X
4		X	X	1	X
5	X	X	X	10	X

		min-supp=3
	ROOT [3 x 12345]	
A x 1235	Bx 1345	[Cx2345] [Ex1345]
AB x 135 AC x 235 AE x 13	15 BC × 345 BE × 1	1245 (CEx345)
ABEX 135 TACES	35 BCE x 345	

ASSOCIATION RULE

		4						
FC_1 F_1			A	B	C	0	Ê	
A 4 (1	X	×		X	X	
B 4 B 4		2	X		X			
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		3	X	X	X	76	X	
E 4	6	4		×	X		X	0
		5	X	X	X		X	
FC_2 F_2	(20)				2		4	
AB 3 AB 3		M	in -	supp	7 = 3			
AC 3 AC 3								
AE 3 AE 3	2 Steps:							
BC 3 BC 3 BE 4	1) Find all Fls							
BEG BEG CE 3	2) Generate assoc	ictio	n ri	les	from	F	15	
							-	
$FC_3 = F_3$	r: A→B							
ABC 2 ABE 3	supp(r) = supp	o (A	~B)	17	→ 3			
ABE 3 BCE 31								
ACE 2	conf(r) = supp							5
BCE 3	supplemental suppl	p (1	(f		→ 5	-		
FC, EFI,=	12							
Ø	C:BE -> A					>		
	supply = supply	ABE) -	>	3			
	conf (r) = suppl	ABE E)) -	→	3 4	= 7	75	

APRIORI - RARE

						_
FC1 (R1) F		A	B	C	D	
A4 ID 11 literact support closed] 1	X	X		X	I
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	2	X		X		Ī
C4 C 4 G3	3	X	X	X		
A 1	4	4	X	X		
E4 1	5	X	X	X		
FC2 R2 F2 Itemst separt closed AB 3 AC 3 AE 3 BC 3 BE 4 CE 3 F2 Itemst separt closed AB 3 BC 3 BE 4 CE 3 FC3 ABE 3 FC3 ABE 3 FC4 FC3 FC3 FC4 FC5 FC5 FC4 FC4 FC5 FC5 FC6 FC6 FC6 FC7 FC7 FC7 FC7 FC8 FC8 FC8 FC8		m		pp	= 3	
Minimal-Rore=						
· [Minimal-Rare Henset]	· frequ	iten	nset but a	that.	is bishi	(1)

E

X

X

X

X