Veri Madenciligi – Data Mining
HW2 - Solution
Birliktelik kurallari – Association Rules

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November 6, 2018

1. Verilen verikumesinde minimum destek (support) %40 ve minimum guven (confidence) %60 olarak belirlenmistir. Apriori algorithmasi ile tum yaygin ogeler kumelerini bulun. En uzun yaygn oruntuyu (frequent pattern) kullanarak minimum confidence (guven) gereksinimlerini saglayan guclu birliktelik kurallarini bulun.

TID	items bought
T1	A, B, C, D
T2	B, D, E
T3	A, C, D ,E
T4	C, E
T5	B, E

Min destek seviyesi %40 (5 hareketten enaz 2 sinde gecsin)

C1	L1	C2	L2	C3	L3
A:2	A:2	A,B:1	A,C:2	A,C,D:2	A,C,D:2
B:3	B:3	A,C:2	A,D:2	C,D,E:1	
C:3	C:3	A,D:2	B,E:2		
D:3	D:3	A,E:1	C,D:2		
E:4	E:4	B,C:1	C,E:2		
		B,D:1	D,E:2		
		B,E:2			
		C,D:2			
		C,E:2			
		D,E:2			

B iceren tum 3lu listeler prune edildi cunku BC BD yada BE yaygin degil
Derive rules with 3-itemsets (A,C,D:2)

A,C → D : sup:(freq(ACD)/total) 2/5=0.4, conf:(freq(ACD)/freq(AC) 2/2 = 1.0
C,D → A : sup:(freq(ACD)/total) 2/5=0.4, conf:(freq(ACD)/freq(CD) 2/2 = 1.0
A,D → C : sup:(freq(ACD)/total) 2/5=0.4, conf:(freq(ACD)/freq(AD) 2/2 = 1.0
A → C,D : sup:(freq(ACD)/total) 2/5=0.4, conf:(freq(ACD)/freq(A) 2/2 = 1.0
C → A,D : sup:(freq(ACD)/total) 2/5=0.4, conf:(freq(ACD)/freq(C) 2/3 = 0.67
D → A,C : sup:(freq(ACD)/total) 2/5=0.4, conf:(freq(ACD)/freq(D) 2/3 = 0.67

60% ve ustunde confidence (guven) saglayan kurallar guclu kurllardir. Digerleri minimum gereksinimleri saglamadigi icin guclu kural (strong rule) sayilmaz.