Försättsblad till skriftlig tentamen vid Linköpings universitet

(fylls i av ansvarig)

Datum för tentamen	08/06/2011
Sal	U1
Tid	14-18
Kurskod	732A31, TDDD41 (732A02)
Provkod	TEN
Kursnamn/benämning	Data Mining - Clustering and Association Analysis
Institution	*IDA*
Antal uppgifter som ingår i tentamen	7
Antal sidor på tentamen (inkl. försättsbladet)	4 + cover page
Jour/Kursansvarig	Patrick Lambrix, Jose M Pena
Telefon under skrivtid	2605, 1651
Besöker salen ca kl.	15.15, 16.45
Kursadministratör (namn + tfnnr + mailadress)	
Tillåtna hjälpmedel	dictionary
Övrigt (exempel när resultat kan ses på webben, betygsgränser, visning, övriga salar tentan går i m.m.)	For pass you need 15 points.
Vilken typ av papper ska användas, rutigt eller linjerat	
Antal exemplar i påsen	7

Institutionen för datavetenskap
Linköpings universitet

EXAM
732A31, 732A02 and TDDD41
Data Mining –
Clustering and Association Analysis
June 8, 2011, kl 14-18

Teachers: Patrick Lambrix, José M Pena

Instructions:

- Start each question at a new page.
- Write at one side of a page.
- Write clearly.
- If you make assumptions about a question, that are not explicitly stated, you need to write these down. (These assumptions cannot change the exercise or question.)

Help: dictionary

GOOD LUCK!

2. FP algorithm (2p+1p+1p+1p=5p)

a. Run the FP algorithm on the transactional database in exercise 1a with minimum support equal to two transactions. Explain step by step the execution.

b. How do you incorporate a monotone constraint in the FP grow algorithm ?

c. How do you incorporate an antimonotone constraint in the FP grow algorithm ?

d. What is the main advantage that the FP grow algorithm has over the Apriori algorithm ?

3. Constraints (1p+1p+1p=3p)

a. Let C1 and C2 be two monotone constraints. Let us define a new constraint C3 so that C3 holds for an itemset X if and only if both C1 and C2 hold for X. Let us define a new constraint C4 so that C4 holds for an itemset X if and only if C1 or C2 hold for X. Are C3 and C4 monotone, antimonotone, both, none, or we simply cannot know ? Explain your answer.

b. Let C1 be a convertible monotone constraint and C2 a convertible antimonotone constraint. Let us define a new constraint C3 so that C3 holds for an itemset X if and only if both C1 and C2 hold for X. Let us define a new constraint C4 so that C4 holds for an itemset X if and only if C1 or C2 hold for X. Are C3 and C4 convertible monotone, convertible antimonotone, both, none, or we simply cannot know ? Explain your answer.

c. Give an example of a constraint that is convertible monotone but not monotone. Explain your answer.