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Dortmund, 24. April  
Abgabe: bis 01.05., 23.59 Uhr an  
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Übungen zur Vorlesung  
**Wissensentdeckung in Datenbanken**  
Sommersemester 2007  
Blatt 3

**Aufgabe 3.1**

Define the free-1 and free-2 sets as well as closed item sets in the following transaction-table.  
The minimal support should be 0.1.

A	B	C	D
0	1	1	0
1	1	0	0
1	1	1	1
0	1	1	1
0	1	1	1
0	1	1	1
1	1	0	1
0	1	1	1
0	1	0	0
1	1	0	0
0	1	1	1
0	1	1	1

If you have problems of understanding, please read the paper of J.F. Boulicaut which was presented in the lecture!

### Aufgabe 3.2

The season of a soccerclub is represented by the following table. For each matchday you can see the mood of the team and the result of the match.

Matchday	Mood	Result	Matchday	Mood	Result
1	neutral	Victory	18	good	Draw
2	good	Victory	19	neutral	Defeat
3	good	Draw	20	bad	Defeat
4	good	Draw	21	bad	Draw
5	neutral	Draw	22	neutral	Draw
6	neutral	Draw	23	neutral	Victory
7	neutral	Defeat	24	neutral	Victory
8	bad	Defeat	25	good	Victory
9	bad	Victory	26	good	Victory
10	good	Victory	27	good	Draw
11	good	Draw	28	good	Draw
12	neutral	Victory	29	good	Victory
13	good	Victory	30	good	Draw
14	good	Defeat	31	good	Defeat
15	neutral	Draw	32	good	Defeat
16	neutral	Draw	33	neutral	Defeat
17	neutral	Victory	34	bad	Draw

Transform the table in the representation of temporal datas which is used in Mannilas WINEPI-approach, that means: declare the observation-sequence  $s$ . Any change of the mood- or result count as an event. Thus one, two or no events can take place at the same time. Formalize the events “After a draw follows neutral mood and after that a defeat” and “Defeats follow good mood!”. Write down the corresponding windowing of  $s$  to this approach with a window-width of 6 matchdays and a step-width of 2 matchdays. Define the occurrence of the two events regarding to the windowing. Also define the confidence of the rule “Defeats follow good mood!”.