

**Exercise Sheet 5, Business Analytics, SoSe 2012, Deadline: 05.07.2012, at 16.15  
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1. Assume that the following database is from supermarket domain:

Transaction ID	Fish	olive	cheese	water
1	1	1	0	0
2	0	0	1	0
3	0	0	0	1
4	1	1	1	0
5	0	1	0	0

- a) Find the support( $X$ ) of itemset  $X=\{\text{fish,olive,cheese}\}$ .
- b) Find the supports support( $Y$ ), supp( $Z$ ) and confidence conf( $Y\rightarrow Z$ ), so that  $Y=\{\text{fish, olive}\}$  and  $Z=\{\text{cheese}\}$ .

2. Suppose users rate movies on a 5 star system: zero stars means the movie is terrible, 5 stars means the movie is great. Now, we have two movies: The Bourne Identity and Ratatouille. We would like to recommend a movie to the mysterious Mr. X who rated The Bourne Identity 4 stars and Ratatouille 2 stars. Find the person who is most similar, or closest, to Mr. X through Euclidean similarity measure.

	Lord of the Rings	The Bourne Identity	Ratatouille
Lena	★★★★	★★★★★	★★★★★
Timm	★★★	★★	★★★★★
Jan	★★★★★	★	★★★★
Aiko	★	★★★	★★★
Wiebke	★★	★★★★★	★

**Good Luck!**