

# Semantic Web

## Ontologies – Future Perspectives

F. Abel, N. Henze, D. Krause

IVS Semantic Web Group

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# Exercise 1: FolkRank

Given are the following tag assignments:

(u1, t1, r1)

(u1, t2, r1)

(u1, t2, r2)

(u2, t2, r2)

- 1 Compute the FolkRank for the folksonomy induced by the given tag assignments (only perform the first iteration,  $d = 0.5$ ). The Vector  $\vec{w}$  should be initialized as follows:

$$\vec{p} = \begin{pmatrix} \text{ranking score of } u_1 \\ \text{ranking score of } u_2 \\ \text{ranking score of } t_1 \\ \text{ranking score of } t_2 \\ \text{ranking score of } r_1 \\ \text{ranking score of } r_2 \end{pmatrix} = \begin{pmatrix} 1 \\ 2 \\ 3 \\ 4 \\ 5 \\ 6 \end{pmatrix}$$

The preference vector is given as follows:

$$\vec{p} = \begin{pmatrix} \text{preference in } u_1 \\ \text{preference in } u_2 \\ \text{preference in } t_1 \\ \text{preference in } t_2 \\ \text{preference in } r_1 \\ \text{preference in } r_2 \end{pmatrix} = \begin{pmatrix} 0 \\ 0 \\ 21 \\ 0 \\ 0 \\ 0 \end{pmatrix}$$

Note that  $\vec{p}$  has to fulfill the condition  $\|\vec{w}\|_1 = \|\vec{p}\|_1$ .

Given are the following tag assignments:

(u1, jazz, r1)  
(u1, trumpet, r1)  
(u2, music, r1)  
(u2, jazz, r2)  
(u3, chet-baker, r2)  
(u3, music, r2)  
(u1, classic, r3)  
(u2, music, r3)

- 1 Write down the *Personomies* for each user.
- 2 Detect two “good” association rules.