

## Chapter No. 6 - Scoring, term weighting and the vector space model

&lt;Food for Thoughts&gt;

1. What do we mean by Vector Space Model? Explain with an example.
2. Consider a corpus C that consists of the following three documents:  
D1: dil dil Pakistan, jan jan Pakistan  
D2: Pakistan hum sub ki jan  
D3: dil aur jan Pakistan Pakistan  
Assuming that the term frequencies are normalized by the maximum frequency in a given document, calculate the TF-IDF weighted term vectors for all documents in C. Assume that the words in the vectors are ordered alphabetically?  
For the above corpus C, consider a query “dil jan Pakistan”. Calculate the TF-IDF weighted query vector for this query.  
Using the cosine similarity measure, calculate the similarity of the query q with all documents in the collection. Assume that term frequencies are normalized by the maximum frequency in given query.
3. Consider the given weights  $g_1 = 0.2$ ,  $g_2 = 0.31$  and  $g_3 = 0.49$ , what are all the distinct score values a document may get?
4. When can IDF value of a term be zero? Explain?
5. Why is the idf of a term always finite? What is the idf of a term that occurs in every document? Compare this with the use of stop word lists.