

# Ranking Function with TF-IDF Weighting

Total # of docs in collection

$$f(q, d) = \sum_{i=1}^N x_i y_i = \sum_{w \in q \cap d} c(w, q) c(w, d) \log \frac{M + 1}{df(w)}$$

All matched query words in d

Doc Frequency

d5

... news of organic food **campaign**...  
**campaign**...**campaign**...**campaign**...

$c(\text{"campaign"}, d5) = 4$   
 $\rightarrow f(q, d5) = 13.9?$