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Roger Bilisoly* (bilisolyr@ccsu.edu), Department of Mathematical Sciences, CCSU, 1615 Stanley St., P.O. Box 4010, New Britain, CT 06050. *Which Edgar Allan Poe Story is His Most Quintessential? A Word Analysis Using Galois Lattices of Formal Concepts.*

The field of information retrieval has numerous measures of text similarity, for example, cosine similarity with weighted word counts. These, however, often require using vectors with thousands of dimensions. Unfortunately, high dimensional vector similarity is hard to link to how a human intuitively compares two literary texts. We apply an alternative approach that is based on formal concept analysis (FCA), which is used in machine learning and concept data analysis. Given two sets, one of objects, the other of attributes, there are algorithms such as Ganter's that find a finite lattice of subsets for both. These are linked by a bijection, and together are called a Galois lattice. This is applied to Edgar Allan Poe where his short stories are the objects, and the attributes are collections of words related by a common theme, for example, all the word forms of the synonyms of *horror*. Stories that are maximal with respect to attributes are defined to be quintessential. This presentation outlines how FCA works, and how to apply it to find Poe story clusters in the resulting Galois lattice. Finally, the results are compared to how a human perceives Poe's works. (Received September 09, 2008)