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Information Retrieval System

Experiments

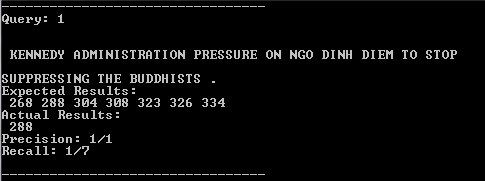
Definitions:

* Start/Base = the comparisons with a standard base tree, as first prototyped/designed
* COMPARE\_VALUE = the value at which the differences are so great that the trees are considered to be too different to continue
* BRANCH\_WEIGHT\_VALUE = the value which each branch’s weight is divided by before deciding how different the trees are; a higher value means that the branches are considered less than those which they stem from

If not indicated, the following standard values were used for the test:  
COMPARE\_VALUE = .9;  
BRANCH\_WEIGHT\_VALUE = 2.7

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| --- | --- | --- | --- | --- | --- | --- |
| What Changed from base / Hypothesis | Average Precision | Average Recall | Worst Precision | Worst Recall | Best Precision | Best Recall |
| Start/Base | .091 | .095 | 0 | 0 | 1 | 1 |
| Word Stemming | .067 | .085 | 0 | 0 | 1 | 1 |
| Multiple Word Search  (Boyer Moore string search) | .055 | .076 | 0 | 0 | 1 | 1 |
| Word Stemming + Multiple Word Search | .043 | .073 | 0 | 0 | 1 | 1 |
| Word Stemming + Multiple Word Search  COMPARE\_VALUE = 1;  BRANCH\_WEIGHT\_VALUE = 2.3; | .057 | .115 | 0 | 0 | 1 | 1 |
| Start/Base  COMPARE\_VALUE = 1;  BRANCH\_WEIGHT\_VALUE = 2.3; | .080 | .114 | 0 | 0 | 1 | 1 |
| Changed tree ontology - v2  COMPARE\_VALUE = 1;  BRANCH\_WEIGHT\_VALUE = 2.3; | .039 | .234 | 0 | 0 | .429 | 1 |
| Changed tree ontology - v2 | .038 | .210 | 0 | 0 | .375 | 1 |
| Changed tree ontology - v2  Word Stemming | .037 | .156 | 0 | 0 | .333 | 1 |
| Changed tree ontology - v2  Multiple Word Search | .050 | .380 | 0 | 0 | 1 | 1 |
| Changed tree ontology - v2  Word Stemming + Multiple Word Search | .040 | .397 | 0 | 0 | .667 | 1 |
| Changed tree ontology - v2  Word Stemming + Multiple Word Search  COMPARE\_VALUE = 1;  BRANCH\_WEIGHT\_VALUE = 2.3; | .042 | .429 | 0 | 0 | .667 | 1 |
| Changed tree ontology - v2  Word Stemming + Multiple Word Search  COMPARE\_VALUE = .8;  BRANCH\_WEIGHT\_VALUE = 2; | .019 | .054 | 0 | 0 | .571 | 1 |
| What Changed from base / Hypothesis | Average Precision | Average Recall | Worst Precision | Worst Recall | Best Precision | Best Recall |
| Changed tree ontology - v2  Word Stemming + Multiple Word Search  COMPARE\_VALUE = .8;  BRANCH\_WEIGHT\_VALUE = 1.5; | 0 | 0 | 0 | 0 | 0 | 0 |
| Changed tree ontology - v2  Word Stemming + Multiple Word Search  COMPARE\_VALUE = .8;  BRANCH\_WEIGHT\_VALUE = 1.9; | .021 | .041 | 0 | 0 | .8 | 1 |
| Changed tree ontology - v2  Word Stemming + Multiple Word Search  COMPARE\_VALUE = .8;  BRANCH\_WEIGHT\_VALUE = 1.8; | .020 | .015 | 0 | 0 | 1 | .6 |
| Changed tree ontology - v2  Word Stemming + Multiple Word Search  COMPARE\_VALUE = .9;  BRANCH\_WEIGHT\_VALUE = 1.9; | .031 | .090 | 0 | 0 | 1 | 1 |
| Changed tree ontology - v2  Word Stemming + Multiple Word Search  COMPARE\_VALUE = .9;  BRANCH\_WEIGHT\_VALUE = 1.8; | .017 | .066 | 0 | 0 | .444 | 1 |
| Changed tree ontology - v2  Word Stemming + Multiple Word Search  COMPARE\_VALUE = 1;  BRANCH\_WEIGHT\_VALUE = 1.8; | .059 | .175 | 0 | 0 | 1 | 1 |
| Changed tree ontology - v2  Word Stemming + Multiple Word Search  COMPARE\_VALUE = 1;  BRANCH\_WEIGHT\_VALUE = 1.9; | .079 | .241 | 0 | 0 | 1 | 1 |
| Changed tree ontology - v2  Word Stemming + Multiple Word Search  COMPARE\_VALUE = 1;  BRANCH\_WEIGHT\_VALUE = 2; | .085 | .290 | 0 | 0 | 1 | 1 |
| Changed tree ontology - v2  Word Stemming + Multiple Word Search  COMPARE\_VALUE = 1;  BRANCH\_WEIGHT\_VALUE = 2.1; | .075 | .333 | 0 | 0 | 1 | 1 |
| Tree ontology - v2  Word Stemming + Multiple Word Search (stemming multi words)  COMPARE\_VALUE = 1;  BRANCH\_WEIGHT\_VALUE = 2.1; | .051 | .308 | 0 | 0 | 1 | 1 |
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Before (Tree V2): [Comparator values: 1, 2]



After adding more words specifically in the articles to the content tree: