

# 1 Conflicting Exclusions Theorem

**Lemma 1.1.** *If a word list has two keywords  $k_1$  and  $k_2$  then  $\left||k_1| - |k_2|\right| = 1$*

*Proof.*

□

**Theorem 1.2.** *When a word list has two keywords  $k_1$  and  $k_2$  such that  $|k_1| < |k_2|$ , the set  $K = \{k_10, k_11, k_20, k_21\}$  is not balanced because the subset  $\{k_10, k_21\}$  is not balanced. The largest balanced subsets of  $K$  are  $\{k_10, k_11, k_20\}$  and  $\{k_11, k_20, k_21\}$ .*

*Proof.*

□