Multi Threading Case Study: Spell Checker Requirements

What: We need to build an Application which should suggest a correct word for misspelled/incomplete word.

Input: an ASCII text file contains a paragraph of words. Some words with incorrect spelling.

Output: an ASCII text file should contains misspelled word with 10 nearest suggestions.

Output file format:
Th
- That
- This
- Thai
- These
- There
- Their
- Those
- Thing
- The

Com
- Come
- Common
- Compute
- Computer
- Complete

Requirements:

1. Should use multi-threading concept to improve the performance.
2. Must apply data synchronization where ever required.
3. Should have dictionary file which contains English words list for providing the suggestion to wrong word.
4. You can use the words list file from http://wordlist.sourceforge.net
5. Should use Levenshtein Distance Matrix formulae while providing the suggested word list.
6. User can terminate the current ongoing spell checking process. If so, application should terminate all the ongoing threads.

Technology Stack:

1. .NET - C# 4.0

2. OO Concepts
3. Abstract Classes & Interfaces
4. Namespaces
5. Exception Handling
6. IO Stream
7. Threads and TPL

Note: Things to be done

1. High Level Design, coding and testing
2. Coding guidelines (To be strictly followed and enforced)