The Belcher Diagnostic Test for LaTeX

Carlos Barreto

May 30, 2016

1 Introduction

In 2009, Wendy Laura Belcher published *Writing Your Journal Article in Twelve Weeks: A Guide to Academic Publishing Success (SAGE)* [1], in which she invented a method to improve academic writing called the *Belcher Diagnostic Test*, which is copyrighted by her. The test consists of highlighting particular words with different colors in order to help authors detect where they might improve their writing, making it smoother, clearer, and tighter.

BDT_latex.py is a program that automates the Belcher Diagnostic Test for LaTeX documents. The program is designed to implement the test on projects that use multiple files, such as TeX files or images. *Writing Your Journal Article in Twelve Weeks: A Guide to Academic Publishing Success* provides the only instructions for understanding and correcting the problems identified by the Belcher Diagnostic Test; please do not post them with this code.

For questions about the test itself, contact her at `wbelcher@ucla.edu`; for questions about the program, contact me at `carlos.barretosuarez@utdallas.edu`.

The following is the list of words that are highlighted:

Words in red: 'and', 'or'

Words in blue: 'there', 'it', 'that', 'which', 'who'

Words in purple: 'by', 'of', 'to', 'for', 'toward', 'on', 'at', 'from', 'in', 'with', 'as'

Words in orange: 'this', 'these', 'those', 'their', 'them', 'they', 'its'

Words in green: 'is', 'are', 'was', 'were', 'am', 'be', 'being', 'been', 'have', 'has', "hasn't", "haven't", 'having', 'did', 'does', "don't", 'doing', 'make', 'makes', 'making', 'provide', 'perform', 'get', 'seem', 'serve'

Words ending in: 'ent', 'ence', 'ion', 'ize', 'ed'

Words in brown: 'not', 'very'

Words ending in: 'ly'

2 Usage

The implementation is made in Python and can be executed with

```
python BDT_latex.py [options] {file.tex}
```

The script creates new TeX files with suffix '_BDT' (e.g., `file_BDT.tex`) in the same directory of the original file, highlighting words with the following commands: `\BDTRed`, `\BDTBlue`, `\BDTPurple`, `\BDTOrange`, `\BDTGreen`, `\BDTBrown`. The script also performs the test on files imported with the commands `\include`, `\input`, and `\subfile`. Thus, the program creates a new version of the document with an analogous structure to the original project, which can be compiled as usual. The only requirement of the program is the package `xcolor`.

The script highlights by default all the sets of words. However, it is possible to choose the sets to highlight by including the initial of each color as options. The following options are accepted:

r Highlight words in red

b Highlight words in blue

p Highlight words in purple

o Highlight words in orange

g Highlight words in green

B Highlight words in brown

For instance, the following command performs the test highlight words with green and brown colors:

```
python BDT_latex.py -gB {file.tex}
```

3 Examples

The following are some examples of sentences that I was able to correct with the the Belcher Diagnostic test (as you might notice, my research is in cybersecurity).

1. **Before:** A second attack might be more difficult to launch because of scarce resources, which are particularly limited for unlawful activities.

   After: A second attack might be more difficult to launch, because unlawful activities count with scarce resources.

   Better: Unlawful activities have limited resources, making it difficult to launch a second attack.

2. **Before:** Hence, it is necessary to implement another mechanism to assign contracts.

   After: This motivates the implementation of another mechanism to assign contracts.

   Better: Companies must implement another mechanism to assign contracts.

3. **Before:** Hence, efficiency is expected to be achieved by means of an active cooperation of consumers in the electricity systems.

After: Hence, an active cooperation of costumers might improve the efficiency of the system.

Better: Hence, consumers actively cooperating should improve the efficiency of the electricity systems.

4. **Before:** The transmission company would try to find the smallest number of companies n to prevent the profitability of launching attacks and to minimize expenses.

   After: The transmission company would choose n companies to make attacks unprofitable with minimum expenses.

5. **Before:** Towers were not totally demolished, just partially destroyed to allow for easier repairs.

   After: Towers were partially damaged to allow both cheap and fast repairs.

   Better: Attackers partially damaged towers to allow both cheap and fast repairs.

6. **Before:** Thus, the inclusion of a randomized selection of contractors reduces the incentives for sponsored attacks.

   After: Thus, random selection of contractors reduces the incentives for sponsored attacks.

References

[1] Wendy Laura Belcher. Writing your journal article in twelve weeks: A guide to academic publishing success, 2009. `http://wendybelcher.com/writing-advice/writing-your-journal-article-in-twelve/`.