

CS410 - Compiler Construction

Footnote Term Project

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Project Overview

1. The Objectives of the Footnote Project

- a. A program that will read the text and for each unfamiliar word (provided by the user) find its definition and generate a footnote, inserting it into the book.
- b. An index into your document of the words/phrases that have footnotes.
 - i. *Word with page number(s) the word appears on*
- c. A new table of contents listing the chapter names of the document.

Project Overview

1. Language/Libraries Used for Our Implementation

- a. Language:
 - i. Python 3
- b. External Libraries:
 - i. NLTK
 - 1. RegexpTokenizer
 - 2. Wordnet
 - ii. CSV
 - iii. JSON
 - iv. urllib.Request

2. Book:

- a. Flatlands by Edwin A. Abbott (<http://www.geom.uiuc.edu/~banchoff/Flatland/>)

General Software Architecture

5 Central Methods

1. `Build_table(Sections, Page_numbers)`
2. `Build_index(Index_words)`
3. `Build_footer(Footer_words)`
4. `Define_word(Word)`
5. `Output_annotated_file(Str_list)`

Build_Table: General Overview

1. Overview

- a. The purpose of this function is to take in the various sections/chapters and their corresponding start page to create a Table of Contents.

2. Input Parameters

- a. Sections
 - i. List of strings (each string being an entire section)
- b. Page_numbers
 - i. List of page numbers at which the sections start

3. Returns

- a. A String (The Table of Contents)

Build_Index: General Overview

1. Overview

- a. The purpose of this function is to take in a table of unfamiliar words, find their page numbers, and generate a corresponding Index.

2. Input Parameters

- a. Index_words
 - i. A table of unfamiliar terms and their page numbers.

3. Returns

- a. A String (The Index)

Build_Footer: General Overview

1. Overview

- a. The purpose of this function is to take in a list of unfamiliar words within a certain section, find their definition (calls Define_word) and generate a footer with this information.

2. Input Parameters

- a. Footer_words
 - i. List of unfamiliar terms within a certain section.

3. Returns

- a. A String (The Footer)

Define_word: General Overview

1. Overview

- a. The purpose of this function is to take a word and search for its definition on Merriam Webster via an HTTP request and an API key.

2. Input Parameters

- a. Word
 - i. A String (The Word)

3. Returns

- a. A String (The Definition)

Output_annotated_file: General Overview

1. Overview

- a. The purpose of this function is to compile the footers, the Table of Contents, and the Index by writing the information to an output file, interleaved within the book text (creates annotated book .txt file).

2. Parameters

- a. Str.list
 - i. A list of strings that contains the entirety of the annotated book.

3. Returns

- a. Nothing (Generates the output file)

Execution Flow Diagram

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