* Opening txt, docx, pdf files
* Saving it’s content in the dictionary
  + Initial structure of the dictionary:
    - {'**All**': {},

**'Unknown'**: {},

**'Known'**: {'All': {}},

**'Outside'**: {},

**'Text'**: { },

**'words\_en'**: [all\_english\_words],

‘**wordsTr’**: [all\_turkish\_words]}

* + Books should be saved with their names as keys, and its text as value.
    - **'Text'**: {'book\_1\_name ': book\_1\_text, 'book\_2\_name ': book\_2\_text},
* Extracting all words
  + Create a list of tupples with number of repipitions as first item of the tupple and the word as second item of the tupple, and save it under the ‘All’ key of the dictionary
    - {'**All**': {'text\_1\_name ': [(number\_of\_repititions, word\_1), (number\_of\_repititions, word\_2), (number\_of\_repititions, word\_3), ...], 'text\_2\_name ': [(number\_of\_repititions, word\_1), (number\_of\_repititions, word\_2), (number\_of\_repititions, word\_3), ...]},
    - The reason why we create a list and not a dictionary, is that we are going to need to sort words according to their usage in the text. We can sort the list, but not the dictionary.
* Creating a list from words extracted from the list or text of known words provided by the user and save it in the ‘Known’ dictionary under ‘All’ key name.
  + **'Known'**: {'All': { word\_1: number\_of\_repititions, word\_2: number\_of\_repititions, word\_3: number\_of\_repititions, ...}}
* Comparing words to the language dictionary
  + Create a dictionary with words outside dictionary as keys, and their repitition as values, and save it in ‘Outside’ dictionary with book name as key name.
    - **'Outside'**: {'book\_name ': {word\_1: number\_of\_repititions, word\_2: number\_of\_repititions, word\_3: number\_of\_repititions, ...}}
  + Comparing words that are in the dictionary to all known words (**'Known'**: {'All': {...}}
    - Create a dictionary with all words in the text that are in the all known words as key, and its repitition in the text as value , and save it in the dictionary under ‘Known’ dictionary with book\_name as key.
      * **'Known'**: {'book\_name ': {word\_1: number\_of\_repititions, word\_2: number\_of\_repititions, word\_3: number\_of\_repititions, ...}}
    - Create a dictionary with all words in the text that are not in the known words, and save it in the under ‘Unknown’ dictionary with words as keys and their repitition as values, with book name as key name.
      * **'Unknown'**: {'book\_name ': {word\_1: number\_of\_repititions, word\_2: number\_of\_repititions, word\_3: number\_of\_repititions, ...}}
* Updating specific dictionaries when words are shifted.
  + **'Known'**: {'All': {...}}, **'Known'**: {book\_name: {...}}, **'Unknown'**: {'book\_name': {...}}
* Deleting specific dictionaries when bookname is deleted.
  + - '**All**': {'book\_name ': [...],

**'Unknown'**: {'book\_name ': {...},

**'Known'**: { 'book\_name ': {...},

**'Outside'**: {'book\_name ': {...},

**'Text'**: {book\_name ': book\_text},

* + Structure of the dictionary after some book uploads:
    - {'**All**': {'text\_1\_name ': [(number\_of\_repititions, word\_1), (number\_of\_repititions, word\_2), (number\_of\_repititions, word\_3), ...], 'text\_2\_name ': [(number\_of\_repititions, word\_1), (number\_of\_repititions, word\_2), (number\_of\_repititions, word\_3), ...]},

**'Unknown'**: {'text\_1\_name ': {word\_1: number\_of\_repititions, word\_2: number\_of\_repititions, word\_3: number\_of\_repititions, ...}, 'text\_2\_name ': {word\_1: number\_of\_repititions, word\_2: number\_of\_repititions, word\_3: number\_of\_repititions, ...}},

**'Known'**: {'All': { word\_1: number\_of\_repititions, word\_2: number\_of\_repititions, word\_3: number\_of\_repititions, ...}, 'text\_1\_name ': {word\_1: number\_of\_repititions, word\_2: number\_of\_repititions, word\_3: number\_of\_repititions, ...}, 'text\_2\_name ': {word\_1: number\_of\_repititions, word\_2: number\_of\_repititions, word\_3: number\_of\_repititions, ...}},

**'Outside'**: {'text\_1\_name ': {word\_1: number\_of\_repititions, word\_2: number\_of\_repititions, word\_3: number\_of\_repititions, ...}, {'text\_2\_name ': {word\_1: number\_of\_repititions, word\_2: number\_of\_repititions, word\_3: number\_of\_repititions, ...}},

**'Text'**: {'text\_1\_name ': text\_1\_text, 'text\_2\_name ': text\_2\_text},

**'words\_en'**: [all\_english\_words],

‘**wordsTr’**: [all\_turkish\_words]}

* Extracting words definitions from available language dictionaries
  + Create a dictionary with the word as key and its definition as value, and save it in the database as *languagename\_words\_definitions* (if dictionary is not the proper entity, some other entity may be created, like list or tuple)
* Extracting words translations from available language dictionaries.
  + Create a dictionary with the word as key and its translation as value, and save it in the database as *languagename\_to\_otherlanguagename* (if dictionary is not the proper entity, some other entity may be created, like list or tuple)
* Designing GUI
* Making GUI
* Listing texts names, known words list, unknown words list, inside dictionary words, outside dictionary words in the proper lists on the GUI
* Changing the lists according to the clicked book
* Making translation window appear when a word is clicked
* Shifting words from list to list when “Shift” button is clicked
* Making the text appear when “Open Text” button is clicked
  + Hightlight or color unknown words (according to settings, see Settings Window )
  + Make window appear when hoovering upon an unknown word
  + Make window appear when clicked on a word
  + Write translaton or meaning of unknown words found at the end of each page.
* Providing the print option for the whole text or any of the words lists.
* Making the settings window appear when Settings button is clicked
* Settings Window contains:
  + The option of selecting the languages he/she is interested to see the translations and definitions
  + A separate window for each language
  + Known Words Text section for each languge. User may add more than one text, delete any text.
  + An option for automatically putting our Probably Known Words List as Known Words List
  + Content of the window when hoovering upon word (only definition, only translation, both ect.)
  + Content of the window when clicked upon the word (only defition, only translation, both ect.)