

The ongoing project this semester will be to develop a Bible Reader application. It will have features similar to <http://www.blueletterbible.org/> and <http://www.biblegateway.com/>. My solution is available from <https://cusack.hope.edu/Notes/?Instructor=BibleReader>. Download *BibleReaderCusack.jar*, *kjv.atv*, and *asv.xml* and place them into the same directory. Then copy *esv.atv* from your project into the same directory (I am not allowed to post that one online). Run my solution by double-clicking on the jarfile. My solution is runnable, but you cannot see my code for obvious reasons. You should spend some time experimenting with all three of these to get an idea of what they are capable of doing, how the interfaces are designed, etc.

Specifications

The Bible Reader will have the following features

- Search for verses that contain specified words and phrases
 - Display search results verse by verse, highlighting the searched words in the results.
 - Line up the search results verse by verse from multiple versions for comparison, displaying the results from all version regardless of whether or not the word occurs in that version.
 - Display a given number of results at a time and include previous/next buttons for navigation.
 - Provide a summary of the search results (e.g. number of occurrences).
- Specify a passage in various formats (e.g. John 3:16, 1Kg 12-13, Heb 3:2-4:3, Genesis)
 - Display passage results in paragraph form.
 - Approximately line up passage results.
 - Display a given number of verses (perhaps a specified number, or up to a chapter at a time) at a time and include previous/next buttons for navigation.
- In both of the above, leaving blank space if one version doesn't have a given verse (rare, but it happens).
- Save search/passage results to a file and be able to read them back in again.

Considerations

- You will need to read in multiple versions of the Bible that are stored using different file formats.
- Some versions contain cross references that should be displayed as appropriate.
- Users may want to specify book names in several different ways (e.g. John, Jn, Jhn, or even worse, First Peter, 1 Peter, I Peter, 1 Pt, etc.)
- Users may enter passages that are invalid in a variety of different ways.
- Some searches will return a lot of results (e.g. "the"). Is that going to be a problem?
- Users need meaningful feedback when they enter invalid things (e.g. Hesitations 1-2).
- There might be reasons to do some things slightly differently for different versions. For instance, some versions have each verse start on a new line and have no defined paragraphs while others have paragraphs and section headings. You might want to display these all uniformly or maintain the formatting of each.

Complications

Clients often change their minds. Some changes/additions might require adding additional code and slight modifications of existing code. Others might require a major redesign if the original design was done poorly. A good design takes into account possible changes in specifications, additional features that might be requested, etc. In other words, good designs mean fewer complications later on. Of course, no amount of good design can cover all possible future requests, so refactoring of code sometimes needs to happen even with code that is well-designed.

Examples of possible changes/additions related to the Bible Reader include (some of which you *will* implement):

- I may want to specify which versions to display on the fly (i.e. I may want to just display results from one version, but I also might want to add a second and third, and maybe even get rid of the first).
- I may want passages displayed in verse-by-verse form instead of paragraph form.
- I may want to add a “context” link next to a search result that will show me several verses before and after the given verse.
- I may change my mind about how and where everything displays in the GUI, including the search result summary, etc.
- I may want to allow searching for exact phrases (by using double quotes).
- If I can save results, I might decide I want to view them, so I may ask for an option to load saved results.
- I may decide that I want the reference to be displayed as part of the search result, or that I want it displayed in its own column.
- I may or may not want verse numbers to appear before each verse of a passage.
- I may want statistics related to searches. For instance, if I search for “son of God”, I might want to see something like the following (the numbers here are made up):
300 verses contain 'son'
4560 verses contain 'of'
432 verses contain 'God'
123 verses contain all of the words 'son', 'of', and 'God'
Displaying results 61-80 of 123
- I may or may not want verse numbers I may want to totally change how results are displayed for both searches and passages.