ITP 20003-01 Java Programming, 2018 Fall

Final Exam: Programming Test

- You have **60 minutes** to complete two programming tasks (total 50 points). Your programs must satisfy all specified requirements, as well as, they must handle invalid inputs (i.e., error cases) properly.
- You can reference all written documents in Internet including all source code files in the Java course webpage. The main textbook is also open you.
- In contrast, you are not allowed **to look up exact answers from Internet, or to communicate with any other persons**; you cannot use any kind of instant messaging services (e.g., Kakaotalk) and you cannot use smartphone during the programming test. Note that any violation or attempt of it will be regarded as a cheating.
- In 60 minutes, you need to complete the submission of your answer. The submission should be made as **one Zip file** that contains all Java source code files. Make sure that your Zip file does not include any class file. **You need to submit this Zip File to the homework repository ("Final: Programming Test") in Hisnet, and also you need to send the file to hongshin@handong.edu and 21400125@handong.edu.** This redundant job is to have migrate risks of system failures.

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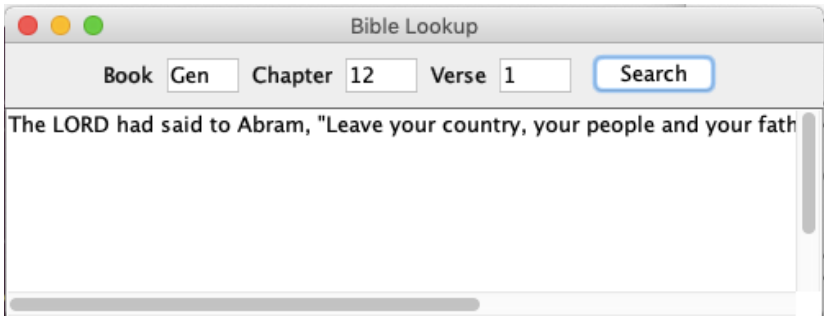
1. Write `BibleLookup.java`, a GUI version of Bible Verse Getter (i.e. Lab 2) that displays the bible verse for the given book name, chapter number and verse number at the search button press (25 points).
   - Reuse the code of `VerseGetter.java` and `NIV.txt` at https://github.com/hongshin/Java/tree/master/lab2
   - Construct the graphic interface as shown below:



2. Write `ArrayDictionary.java` that implements a dictionary (map) data structure (25 points)
   - Dictionary is a data structure to define String values for String keys.
   - The interface is given: download `Dictionary.java` from https://github.com/hongshin/Java/tree/master/final. `ArrayDictionary` must implement the `Dictionary` interface.
   - `ArrayDictionary` must be implemented as to have two `String` arrays, `keys` and `vals`, as its members such that `vals[i]` holds the value defined for `keys[i]`.
   - `ArrayDictionary` must have public methods as follow:
     - `ArrayDictionary(int capacity)`: `capacity` is the initial size of the two array members.
     - `put(String key, String val)`: define the value of `key` as `val`. The method throws `IllegalArgumentException` when `key` or `val` is `null`. `ArrayDictionary` should expand the arrays when the number of defined keys exceed the initial capacity.
     - `get(String key)`: return the value for `key`. If no value is defined for `key`, the method returns `null`.
     - `remove(String key)`: return the defined value for `key` after making `key` undefined. If no value is defined for `key`, the method throws `NoSuchElementException`.
   - Download `Test.java` from https://github.com/hongshin/Java/tree/master/final, and run `Test` with `ArrayDictionary`. `Test` will print "`Pass`" if your implementation is correct.