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**Assignment 6: Benchmark REST Service**

Research is a never-ending endeavor. We continue to research many of the same things for thousands of years. The Bible is a prime example. Thousands of years old and mankind is still going over it with a magnifying glass looking for secrets. Modern technology has provided us with that ability to quickly mine information from the Bible that would have taken countless hours before. The ability to quickly find when a word occurs makes searching for all references to an individual nearly instantaneous. We can quickly find when or if a city was ever mentioned. Want to know how many times Egypt is mentioned? If you want to quickly compare versions of the Bible you could import them and compare word counts or different verses at the touch of a button. It can also provide interesting insight into how much an individual was covered in the bible. In the first three books Adam was mentioned 16 times, Noah got 35, and Moses beat them both with 341 by name mentions. The applications are as diverse as our imagination for what we want to know regarding the Bible.

This assignment required the creation of a REST based web service providing various queries of the Bible. I implemented three REST services in my assignment. The first service takes an input of a Bible book name, chapter number and verse number and returns the scripture passage. The second service takes an input of a word and searches the Bible for its first occurrence and returns the passage it occurs in. Lastly, the service takes an input of a word and counts the amount of times it occurs in the Bible and returns that number.

Next, I needed to provide a Bible source that could be searched. I searched and found a website on the internet that provided individual text files of each book of the Bible in a format I could work with. I decided to keep my rest service to the first three books of the Bible to keep the size of the project down. I combined the three books into one text file and created an input reader to insert it into an ArrayList. The method for reading it into an ArrayList separates out each verse into a new Bible object containing the name of the book, the chapter number, the verse number, and the text of the scripture.

With the Bible data available, I was able to make the business logic to perform the REST service methods. I created a method that takes a book name, chapter, and verse and searches through the ArrayList to find the Bible object that matches all three. Once the object is found, it is returned. Another method takes an argument of a String and searches each verse to see if it contains the search string. Because the ArrayList is in order, the first time it is found is the first occurrence. This Bible object is then returned. The last method takes an argument of a String and searches the entire ArrayList for each verse that contains the word. When an occurrence is found, a counter is incremented. The final count is returned.

Once I had data available and methods to find the required queries I created the REST service. The REST service consists of three @GET http requests. These requests are configured to return JSON responses. Each REST service calls on its corresponding business service to get the required data. Finally, I created a web service client for a REST web service and have submitted it with this week’s assignment. Screenshots are contained below of my web service and web service client working.

***Project Classes***

Bible.java (Object to hold bible verses)

-String bookName

-Integer chapter

-Integer verse

-String scripture

BibleBusinessInterface.java (Interface for Bible

Business Class)

-wordOccurrence()

-firstOccurrence()

-bookChapterVerse()

BibleBusinessService.java (Business logic implementation)

-String bookName

-int foundWord

-int wordCount

-Bible bibleScripture

-wordOccurrence()

-firstOccurrence()

-bookChapterVerse()

BibleRestService.java

-getVerse()

-getFirstWordOccurrence()

-getWordCount()

BibleDataInterface.java (Data interfaces)

-getBible()

BibleDataService.java

-String bookName

-getBible()

***Screenshots***

