**CSCE 2014 – Programming Project Report**

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**Academic Integrity Statement:** I pledge that I have neither given nor received unauthorized help on this programming assignment.

**Problem Statement:**

* The goal of this program is to test the efficiency of different search and insert methods between linked lists, vectors, and vectors using binary search.
* The inputs are different books from Project Gutenberg.
* The program outputs the time it requires to find every unique word in each of the books using all three methods.
* What error handling was required?
* This section should be 1-2 paragraphs long.

**Design:**

* Describe the design decisions you made.
* I used the same linked list as project 3, and used a c++ Vector in order to compare efficiency.
* I used a linear search/insert, and a binary search/insert.
* The linear search and insert are much easier to implement, but the binary search and insert are much faster depending on CPU architecture. Using a vector vs. a linked list can much faster even using linear methods depending on CPU architecture.
* This section should be 1-2 paragraphs long.

**Implementation:**

* Describe your implementation process.
* I started with the code of Project 3, which implemented Dr. Gauch’s list 6.
* I extended this code by adding a separate class that used a Vector to also store all the words in the book.
* I started by implementing the linear search and the Vector class. After I tested that, I implemented the binary search and insert. After doing that, I did a lot of testing to make sure the times lined up with what should be happening.
* This section should be 1-2 paragraphs long.

**Testing:**

* Describe how you tested your program.
* What were the normal inputs you used?
* What were the special cases you tested?
* Did everything work as expected?
* Include sample input/output from your program.

**Conclusions:**

* Describe the overall result of the assignment.
* Was the programming project a success?
* What would you do same or differently next time?
* How long did the project take to complete?
* This section should be 1 paragraph long.