**CSE 373 Homework 4 Write up**

**• Who is in your group (Give name, UW NetID & student number of each person)?  
 Geoff Gray gegray 1463717**

**Austin Meyers arm38 1228316**

**• a) How did you design your tests & what properties did you test?**

**We designed the tests to check the methods that we implemented.**

**Both HashTable implementations were tested to check**

**if the hashing functions were working correctly, proper edge case handling, and expected output.**

**We also tested Correlator, which gave the correct output, and handled input correctly.**

**StringComparetor was also tested with edge cases and other input and returned expected values.**

**StringHasher was tested in using the above classes and methods.**

**b) What boundary cases did you consider?**

**We considered the following edge cases:**

**A file with no text -> WordCount, Correlator, StringComparetor gave expected outputs (**

**• Conduct an experiment to determine which DataCounter implementation (HashTable\_SC, HashTable\_OP) is better for large input texts.**

**a) Describe your experimental setup:**

**1) Inputs used**

**2) How you collected timing information**

**3) Any details that would be needed to replicate your experiments**

**b) Experimental Results (Place your graphs and tables of results here).**

**c) Interpretation of Experimental Results**

**1) What did you expect about the results and why?**

**2) Did your results agree with your expectations? Why or Why not?**

**3) According to your experiment, which Hashtable implementation, separate chaining or open addressing, is better?**

**• Conduct experiments to determine if changing the hash function affects the runtime of your HashTable.**

**a) Brief description of your hash functions**

**b) Experimental Results (Place your graphs and tables of results here).**

**Experiment with at least 2 hash functions (2 Hashing functions = 2 experiments depending on how you measured the runtime)**

**Don’t forget to give each graph a title and label the axes.**

**c) Interpretation (Your expectations and why? Did it match your results? If not, why?)**

**• Using Correlator, does your experimentation suggest that Bacon wrote Shakespeare's plays?**

**Show at least one (you can experiment with more texts if you want) correlation value for each of:**

**a) Shakespeare's work compared to Shakespeare's work**

**hamlet / hamlet**

**0.0**

**othello / the-tempest**

**2.688637953675988E-4**

**othello / hamlet**

**1.7655777913126052E-4**

**the-tempest / hamlet**

**2.6693013476318083E-4**

**b) Bacon's work compared to Bacon's work**

**the-new-atlantis / the-new-atlantis**

**0.0**

**the-essays / the-advancement-of-learning**

**1.344086629975853E-4**

**the-essays / the-new-atlantis**

**3.922436403822705E-4**

**the-advancement-of-learning / the-new-atlantis**

**3.805931402277071E-4**

**c) Shakespeare's work compared to Bacon's work**

**hamlet / the-new-atlantis**

**5.65727366923397E-4**

**hamlet / the-advancement-of-learning**

**4.579971811775332E-4**

**hamlet / the-essays**

**5.621769030248902E-4**

**othello / the-new-atlantis**

**6.682467247590484E-4**

**othello / the-advancement-of-learning**

**5.395547385899665E-4**

**othello / the-essays**

**6.463729850450667E-4**

**the-tempest / the-new-atlantis**

**5.039603559242515E-4**

**the-tempest / the-advancement-of-learning**

**3.122391221109452E-4**

**the-tempest / the essays**

**4.3335173590321717E-4**

**According to the results of your experiments, did Bacon write Shakespeare's plays?**

**No, the correlation value for Bacon vs. Shakespeare signatures is fairly low,**

**when you compare that value with the correlation value of the authors writings vs. the authors other writings.**

**It is interesting to note that the correlation value for Shakespeare’s ‘The Tempest’ vs. Bacon’s writings has**

**the closest correlation value.**

**• Include a description of how your project goes "above and beyond" the basic requirements (if it does).**

**Testing numerous texts from each other gives us a wider set of signatures to compare, making our analysis more**

**precise.**

**• If you worked with a partner:**

**a) Describe the process you used for developing and testing your code. If you divided it, describe**

**that. If you did everything together, describe the actual process used (eg. how long you talked**

**about what, what order you wrote and tested, and how long it took).**

**We used version control systems to develop our code, and wrote unit tests on our own. The timing**

**and comparison tests for the write up were written as a team. We split up the tasks between the 2 of us,**

**each of us writing one of the Hash Table implementations.**

**b) Describe each group member's contributions/responsibilities in the project.**

**Geoff : StringComparator, HashTable\_OA, Correlator, testing**

**Austin : WordCount, StringHasher, HashTable\_SC, WriteUp, testing**

**c) Describe at least one good thing and one bad thing about the process of working together.**

**Bad: Different development environments, IDE’s**

**Good: Collaborate on ideas and share understanding**

**• a) Which parts of the project were most difficult?**

**Gaining and understanding of all the moving parts of this assignment was difficult. There felt to**

**be numerous portions of the project that required an understanding of another piece.**

**b) How could the project be better?**

**Discussing the project more in class and section. This was the biggest and most complicated assignment**

**thus far, and it would have helped to discuss the subject matter more in depth.**

**Appendix**

**Place anything else that you want to add here.**