Q1 Information and Honor Code

0 Points

In this assignment, you will work on the Colab 8 notebook and obtain results from it. If your answers are float values, round the decimal number to the **nearest 0.001**. For example, 0.2435 would become `0.244`.

You can submit as many times as you want, and the last submission will be graded. Only the fully correct answer will receive 1 point. No late day is allowed for any Colab assignment.

Please verify that you have read the above instructions and the Stanford Honor Code and that you have not given or received unpermitted aid while completing this assignment.

If you have any questions about how the Honor Code applies to Colab assignments or other parts of the course, please contact the teaching staff for clarification.

- ⦿ I have read and understood the above information

Q2 Construction

2 Points

From the `word_list` loaded from NLTK, you created a bloom filter -- `word_filter`, and a python set -- `word_set`.

Q2.1 Size of `word_filter`

1 Point

What is the size of `word_filter` in bytes? (Integer)

Q2.2 Size of `word_set`

1 Point

What is the size of `word_set`? (Integer)

Q3 Membership testing

2 Points

You then perform membership testing with the word "California" in the `word_list`, `word_set`, `word_filter`.

Q3.1

1 Point

What is the "best of 3" run time range for this test with `word_filter`? ns=nanosecond, µs=microsecond, ms=millisecond, s=second.

- [1 ns, 100 ns)
- [100 ns, 1 µs)
- [1 µs, 100 µs)
- [100 µs, 1 ms)
- [1 ms, 100 ms)
- [100 ms, 1 s)
- [1 s, 100 s)

Q3.2

1 Point

What is the "best of 3" run time range for this test with `word_set`? ns=nanosecond, µs=microsecond, ms=millisecond, s=second.

- [1 ns, 100 ns)
- [100 ns, 1 µs)
- [1 µs, 100 µs)
- [100 µs, 1 ms)
- [1 ms, 100 ms)
- [100 ms, 1 s)
- [1 s, 100 s)

Q4 Spelling error check

4 Points

Write a spell-checker, and perform error check with one of the data structure -- `word_list`, `word_set`, and `word_filter` -- on all the negative reviews.

Q4.1 Wall time with word_filter

1 Point

What is the "Wall time" range for the spell check of all **negative** reviews using `word_filter`?

- [1 ns, 1 µs)
- [1 µs, 1 ms)
- [1 ms, 1 s)
- [1 s, 1000 s)

Q4.2 Error rate with word_filter

1 Point

What is the error rate for the spell check of all **negative** reviews using `word_filter`? If the error rate is 0.2, put 20.000 in the answer box. (Float)

Q4.3 Wall time with word_set

1 Point

What is the "Wall time" range for the spell check of all **negative** reviews using `word_set`?

- [1 ns, 1 µs)
- [1 µs, 1 ms)
- [1 ms, 1 s)
- [1 s, 1000 s)

Q4.4 Error rate with word_set

1 Point

What is the error rate for the spell check of all **negative** reviews using `word_set`? If the error rate is 0.2, put 20.000 in the answer box. (Float)