Q2 Result Analysis

Test results:

Testing using string of length 20000

Invocation:

./q2 [num_threads] 20000

Number of optimistic threads	Average performance (ms)
0	75
1	90
2	65
3	60
4	55

Explanation

A slight speedup can be observed with an increase in the number of optimistic threads utilized. When the workload is divided among more threads, each thread handles a shorter segment, allowing for more efficient processing and potentially resulting in improved performance. However, using only 1 optimistic thread leads to a slowdown, likely due to the overhead associated with thread management and synchronization. This overhead becomes more pronounced when the workload is not sufficiently distributed among multiple threads, resulting in decreased overall efficiency. Therefore, optimizing the parallelization strategy and workload distribution can help maximize the benefits of optimistic threading and improve overall program performance.