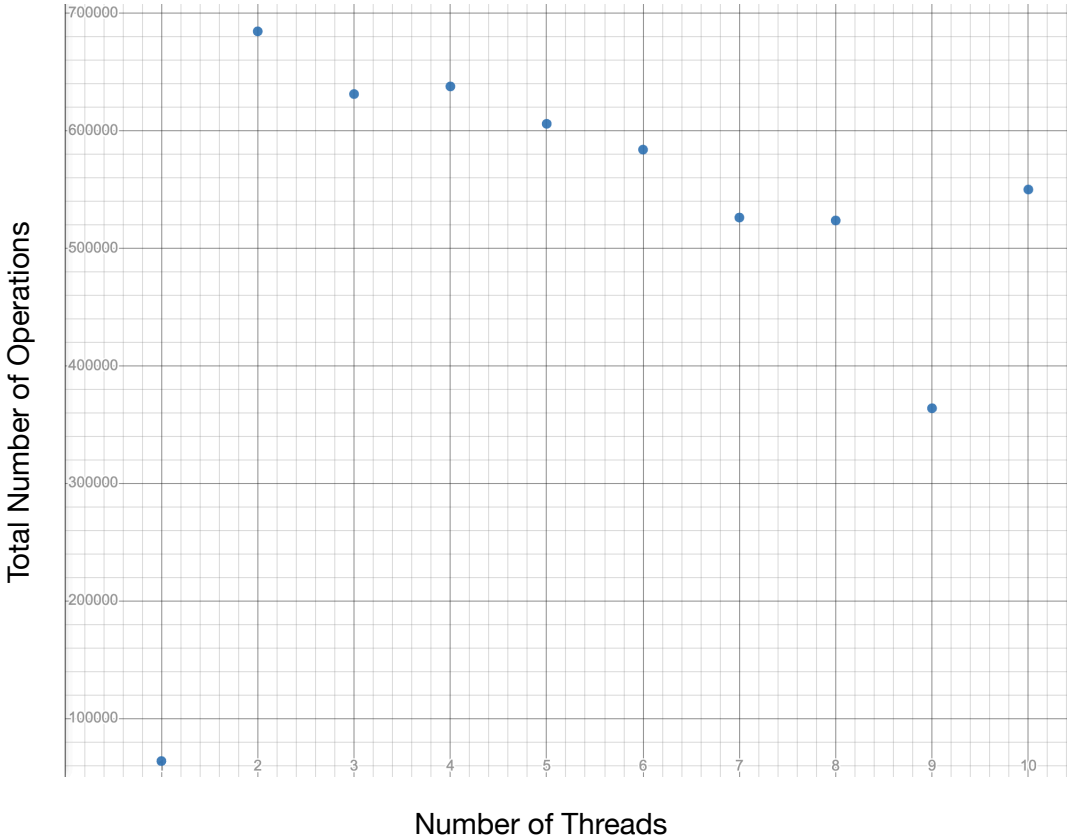
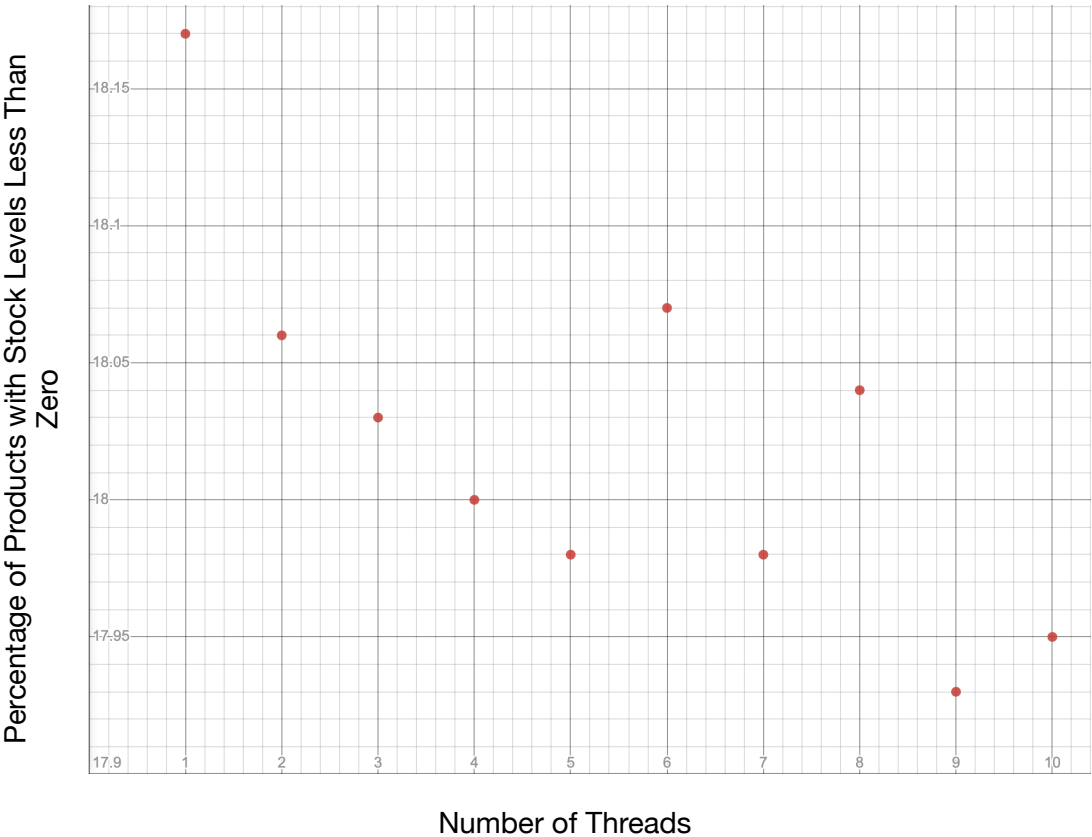


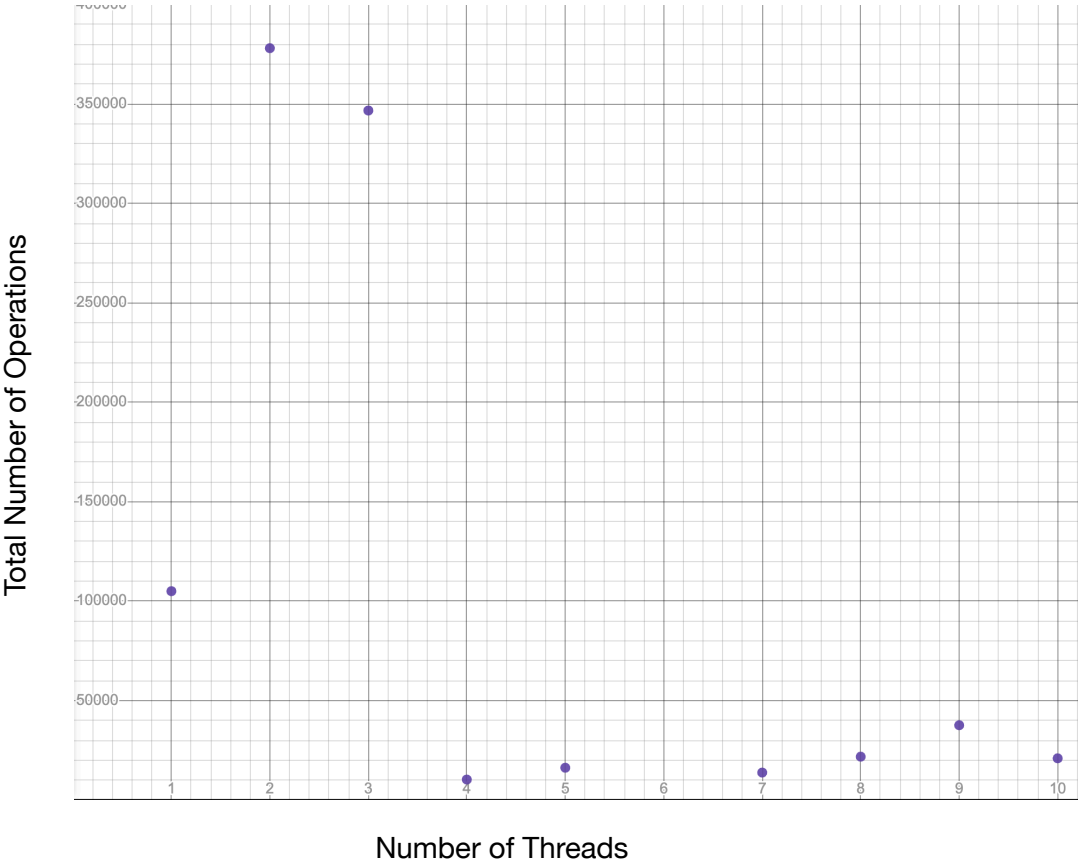
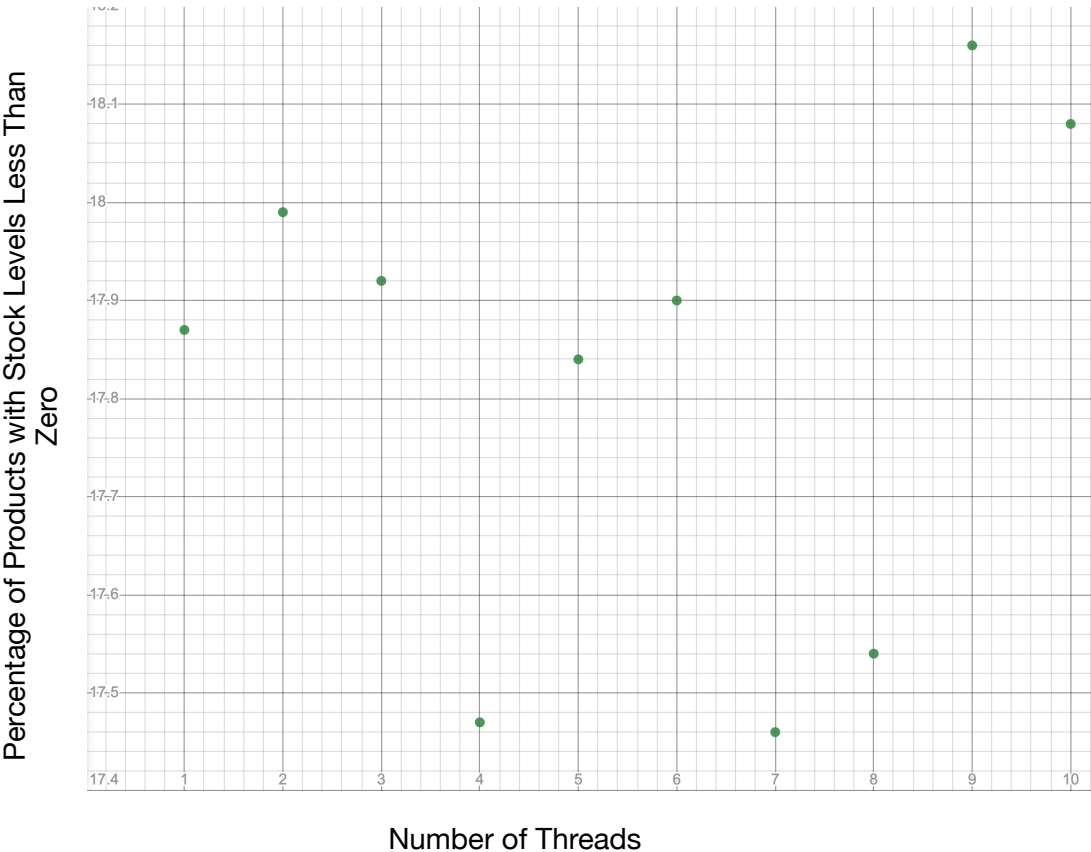
**RESULTS****First Run**

Number of Threads: 1  
Num of threads: 1  
Percentage of Products with Stock Levels Less Than Zero: 18.17%  
Total Number of Operations: 63563  
Number of Threads: 2  
Num of threads: 2  
Percentage of Products with Stock Levels Less Than Zero: 18.06%  
Total Number of Operations: 684859  
Number of Threads: 3  
Num of threads: 3  
Percentage of Products with Stock Levels Less Than Zero: 18.03%  
Total Number of Operations: 631481  
Number of Threads: 4  
Num of threads: 4  
Percentage of Products with Stock Levels Less Than Zero: 18.00%  
Total Number of Operations: 637947  
Number of Threads: 5  
Num of threads: 5  
Percentage of Products with Stock Levels Less Than Zero: 17.98%  
Total Number of Operations: 606117  
Number of Threads: 6  
Num of threads: 6  
Percentage of Products with Stock Levels Less Than Zero: 18.07%  
Total Number of Operations: 584153  
Number of Threads: 7  
Num of threads: 7  
Percentage of Products with Stock Levels Less Than Zero: 17.98%  
Total Number of Operations: 526305  
Number of Threads: 8  
Num of threads: 8  
Percentage of Products with Stock Levels Less Than Zero: 18.04%  
Total Number of Operations: 523813  
Number of Threads: 9  
Num of threads: 9  
Percentage of Products with Stock Levels Less Than Zero: 17.93%  
Total Number of Operations: 363968  
Number of Threads: 10  
Num of threads: 10  
Percentage of Products with Stock Levels Less Than Zero: 17.95%  
Total Number of Operations: 550191



**Second Run**

Number of Threads: 1  
Num of threads: 1  
Percentage of Products with Stock Levels Less Than Zero: 17.87%  
Total Number of Operations: 105011  
Number of Threads: 2  
Num of threads: 2  
Percentage of Products with Stock Levels Less Than Zero: 17.99%  
Total Number of Operations: 378093  
Number of Threads: 3  
Num of threads: 3  
Percentage of Products with Stock Levels Less Than Zero: 17.92%  
Total Number of Operations: 346729  
Number of Threads: 4  
Num of threads: 4  
Percentage of Products with Stock Levels Less Than Zero: 17.47%  
Total Number of Operations: 10295  
Number of Threads: 5  
Num of threads: 5  
Percentage of Products with Stock Levels Less Than Zero: 17.84%  
Total Number of Operations: 16235  
Number of Threads: 6  
Num of threads: 6  
Percentage of Products with Stock Levels Less Than Zero: 17.90%  
Total Number of Operations: 493249  
Number of Threads: 7  
Num of threads: 7  
Percentage of Products with Stock Levels Less Than Zero: 17.46%  
Total Number of Operations: 13800  
Number of Threads: 8  
Num of threads: 8  
Percentage of Products with Stock Levels Less Than Zero: 17.54%  
Total Number of Operations: 21808  
Number of Threads: 9  
Num of threads: 9  
Percentage of Products with Stock Levels Less Than Zero: 18.16%  
Total Number of Operations: 37608  
Number of Threads: 10  
Num of threads: 10  
Percentage of Products with Stock Levels Less Than Zero: 18.08%  
Total Number of Operations: 20969



Despite the anomalies on the 9 and 10 thread runs in the second test run, the general trend seems to show that the Percentage of Products with Stock Levels Less Than Zero and the Total Number of Operations performed - both show a decreasing over increasing number of concurrent threads. This seems to be in contrast the results presented for Assignment 1, where the trends tended to increase and plateau after a while.

MongoDB's design allows for concurrent writes without strong consistency guarantees between documents, which may lead to a decrease in the percentage of products with stock levels less than zero and the total number of operations. In contrast, a Relational Database enforces stronger consistency through transactions, leading to potential contention and more operations failing, resulting in an increase in the percentage of products with stock levels less than zero and the total number of operations.