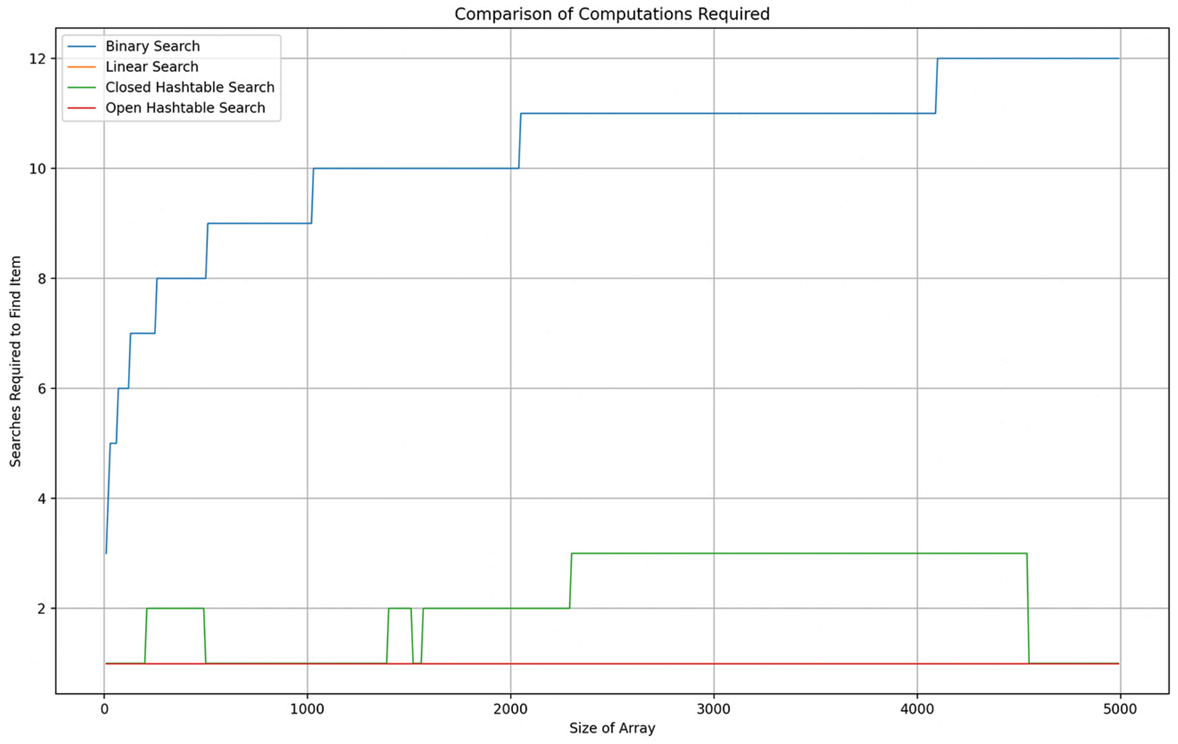


```
Benchmarking with problem size of 4990
Linear search time: 0.000001
Linear Search Comparisons: 1

Binary search time: 0.000000
Binary Search Comparisons: 12

Open Hash search time: 0.000000
Open Hash Search Comparisons: 1

Closed Hash search time: 0.000001
Closed Hash Search Comparisons: 1
```

Item at front

When searching for an item at the front of an array, the linear search algorithm will always perform at O(1) constant time since this is the best case scenario for this algo. Binary search will perform at its average case, O(log(N)), as shown by its logarithmic curve, here, in blue. Ideally, both maps will perform near O(1). My open map's algorithm seems to always perform well in terms of hashing strings of digits that are shorter as shown in this graph, performing at O(1) constant time with items at 'front' (position does not play a part in the map search function, but the items that would be at the front of an ordered array are smaller by nature).