Size of hashArray[] = 3

Search ValueS Time Taken

Abell 1573541 nanoseconds (0.001573541 seconds)

Kennedy 877042 nanoseconds (0.000877042 seconds)

Mercado. 2294916 nanoseconds (0.002294916 seconds)

Steel 3575917 nanoseconds (0.003575917 seconds)

Rose 2371875 nanoseconds (0.002371875 seconds)

Wells 1954042 nanoseconds (0.001954042 seconds).

Zook 1853125 nanoseconds (0.001853125 seconds)

West. 2171791 nanoseconds (0.002171791 seconds)

Tamayo 1363333 nanoseconds (0.001363333 seconds)

Size of hashArray[] = 10

Search Values Time Taken

Abell 475291 nanoseconds (0.000475291 seconds)

Kennedy 473125 nanoseconds (0.000473125 seconds)

Mercado. 370584 nanoseconds (0.000370584 seconds)

Steel 374583 nanoseconds (0.000374583 seconds)

Rose 143917 nanoseconds (0.000143917 seconds)

Wells 392375 nanoseconds (0.000392375 seconds)

Zook 468250 nanoseconds (0.000468250 seconds)

West. 164791 nanoseconds (0.000164791 seconds)

Tamayo 474334 nanoseconds (0.000474334 seconds)

Size of hashArray[] = 100

Search Values Time Taken

Abell 16167 nanoseconds (0.000016167 seconds)

Kennedy 59250 nanoseconds (0.000059250 seconds)

Mercado. 38166 nanoseconds (0.000038166 seconds)

Steel 51958 nanoseconds (0.000051958 seconds)

Rose 33291 nanoseconds (0.000033291 seconds)

Wells 31625 nanoseconds (0.000031625 seconds)

Zook 27792 nanoseconds (0.000027792 seconds)

West. 27167 nanoseconds (0.000027167 seconds)

**Conjecture:**

Based on the above record, it looks like the larger the hashArray[] size the faster the search will be. I think between 100 and 1000 is the optimal size for my hashArray[] for 4500 records.

if the data set size was much larger, say, 4,500,000. we need hashArray[] of bigger size to perform fast operation. I would say the hashArray[] of size between 100000 and 1000000 would be optimal for this scenario.