***PERFORMANCE REPORT***

N = 1M

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| **Load Factor** | **Trial 1** | **Trial 2** | **Trial 3** |
| 0.5 | Cuckoo Hashing Results:  Time: 1776 msec.  Memory: 89 MB / 241 MB.  Java HashSet Results:  Time: 244 msec.  Memory: 55 MB / 123 MB. | Cuckoo Hashing Results:  Time: 1055 msec.  Memory: 125 MB / 316 MB.  Java HashSet Results:  Time: 744 msec.  Memory: 52 MB / 303 MB. | Cuckoo Hashing Results:  Time: 1064 msec.  Memory: 231 MB / 392 MB.  Java HashSet Results:  Time: 172 msec.  Memory: 176 MB / 316 MB. |
| 0.75 | Cuckoo Hashing Results:  Time: 592 msec.  Memory: 96 MB / 155 MB.  Java HashSet Results:  Time: 252 msec.  Memory: 47 MB / 123 MB. | Cuckoo Hashing Results:  Time: 444 msec.  Memory: 89 MB / 227 MB.  Java HashSet Results:  Time: 180 msec.  Memory: 54 MB / 208 MB. | Cuckoo Hashing Results:  Time: 944 msec.  Memory: 91 MB / 299 MB.  Java HashSet Results:  Time: 136 msec.  Memory: 131 MB / 227 MB. |
| 0.9 | Cuckoo Hashing Results:  Time: 612 msec.  Memory: 97 MB / 155 MB.  Java HashSet Results:  Time: 256 msec.  Memory: 47 MB / 123 MB. | Cuckoo Hashing Results:  Time: 427 msec.  Memory: 100 MB / 226 MB.  Java HashSet Results:  Time: 168 msec.  Memory: 58 MB / 208 MB. | Cuckoo Hashing Results:  Time: 480 msec.  Memory: 114 MB / 330 MB.  Java HashSet Results:  Time: 716 msec.  Memory: 43 MB / 330 MB. |

N = 5M

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| **Load Factor** | **Trial 1** | **Trial 2** | **Trial 3** |
| 0.5 | Cuckoo Hashing Results:  Time: 19442 msec.  Memory: 570 MB / 919 MB.  Java HashSet Results:  Time: 5819 msec.  Memory: 261 MB / 368 MB. | Cuckoo Hashing Results:  Time: 15884 msec.  Memory: 500 MB / 1351 MB.  Java HashSet Results:  Time: 7650 msec.  Memory: 261 MB / 828 MB. | Cuckoo Hashing Results:  Time: 16648 msec.  Memory: 499 MB / 1475 MB.  Java HashSet Results:  Time: 1951 msec.  Memory: 736 MB / 1362 MB. |
| 0.75 | Cuckoo Hashing Results:  Time: 5992 msec.  Memory: 489 MB / 907 MB.  Java HashSet Results:  Time: 4606 msec.  Memory: 253 MB / 871 MB. | Cuckoo Hashing Results:  Time: 3247 msec.  Memory: 458 MB / 762 MB.  Java HashSet Results:  Time: 1124 msec.  Memory: 286 MB / 713 MB. | Cuckoo Hashing Results:  Time: 5263 msec.  Memory: 398 MB / 569 MB.  Java HashSet Results:  Time: 5542 msec.  Memory: 261 MB / 376 MB. |
| 0.9 | Memory: 229 MB / 372 MB.  Cuckoo Hashing Results:  Time: 6514 msec.  Java HashSet Results:  Time: 2404 msec.  Memory: 395 MB / 895 MB. | Cuckoo Hashing Results:  Time: 4426 msec.  Memory: 803 MB / 974 MB.  Java HashSet Results:  Time: 5259 msec.  Memory: 600 MB / 921 MB. | Cuckoo Hashing Results:  Time: 5966 msec.  Memory: 428 MB / 833 MB.  Java HashSet Results:  Time: 3235 msec.  Memory: 257 MB / 801 MB. |

N = 10M

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| **Load Factor** | **Trial 1** | **Trial 2** | **Trial 3** |
| 0.5 | Cuckoo Hashing Results:  Time: 36183 msec.  Memory: 999 MB / 1694 MB.  Java HashSet Results:  Time: 8861 msec.  Memory: 465 MB / 655 MB. | Cuckoo Hashing Results:  Time: 25539 msec.  Memory: 1138 MB / 1756 MB.  Java HashSet Results:  Time: 13932 msec.  Memory: 545 MB / 1340 MB. | Cuckoo Hashing Results:  Time: 29336 msec.  Memory: 1138 MB / 1797 MB.  Java HashSet Results:  Time: 12857 msec.  Memory: 532 MB / 1572 MB. |
| 0.75 | Cuckoo Hashing Results:  Time: 17832 msec.  Memory: 789 MB / 1263 MB.  Java HashSet Results:  Time: 9002 msec.  Memory: 529 MB / 663 MB. | Cuckoo Hashing Results:  Time: 14077 msec.  Memory: 791 MB / 1593 MB.  Java HashSet Results:  Time: 12213 msec.  Memory: 521 MB / 1080 MB. | Cuckoo Hashing Results:  Time: 17152 msec.  Memory: 886 MB / 1575 MB.  Java HashSet Results:  Time: 4556 msec.  Memory: 1265 MB / 1613 MB. |
| 0.9 | Cuckoo Hashing Results:  Time: 16165 msec.  Memory: 824 MB / 1318 MB.  Java HashSet Results:  Time: 8099 msec.  Memory: 602 MB / 925 MB. | Cuckoo Hashing Results:  Time: 16877 msec.  Memory: 789 MB / 1795 MB.  Java HashSet Results:  Time: 13406 msec.  Memory: 433 MB / 1308 MB. | Cuckoo Hashing Results:  Time: 15624 msec.  Memory: 792 MB / 1790 MB.  Java HashSet Results:  Time: 12029 msec.  Memory: 453 MB / 1262 MB. |

Conclusion:

1. We did 3 trials with different load factors and number of keys and found out that most times LF 0.75 more efficient than 0.5 and 0.9.
2. Java’s Hashset is much more efficient than Cuckoo hashing.