**CME 2201 - Assignment 1**

**INVERTED INDEX BY USING HASH TABLES**

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **Load Factor** | **Hash Function** | **Collision Handling** | **Collision Count** | **Indexing Time** | **Avg. Search Time** | **Min. Search Time** | **Max. Search Time** |
| α=50% | SSF | LP | 749.828.869 | 157,43 s | 0,48 ms | 0,39 ms | 5,61 ms |
| DH | 32.651.904 | 47,66 s | 0,04 ms | 0,0043ms | 4,98 ms |
| PAF | LP | 2.282.097 | 46,09 s | 0,01 ms | 0,0002ms | 4,84 ms |
| DH | 1.441.919 | 53,07 s | 0,01 ms | 0,0003ms | 4,87 ms |
| α=80% | SSF | LP | 750.914.181 | 159,1 s | 0,64 ms | 0,41 ms | 38,78 ms |
| DH | 32.689.850 | 54,39 s | 0,04 ms | 0,0047ms | 4,97 ms |
| PAF | LP | 2.287.564 | 41,5 s | 0,01 ms | 0,0003ms | 4,85 ms |
| DH | 1.443.435 | 51,49 s | 0,01 ms | 0,0003ms | 4,87 ms |

***Table 1.****Performance matrix*

*The best method is DH/PAF. The worst method is LP/SSF. The PAF faster than SSF, The DH faster than LP and The 0,8 load factor better than 0,5 load factor.*

*The PAF better than SSF because PAF use prime numbers so, words are have more unique key. If the program have got unique keys, the collision will be less.*

*The DH better than LP because when there is collision, the controls is done with prime numbers.*

*The load factor 0.5 better than 0.8 because the collision will be more 0,8 load factor.*

*As a result, 0,5 load factor DH/PAF is best. The collision must be blocked for the best program.*

***CLASS’S NAMES:***

*SingleLinkedList(), Node(), HastEntry(), HashTable(), Management(), Main()*

***FUNCTIONS’S NAMES:***

*ConvetNode(), ReadFile(), Run(), Delimiters(), forSSL(), SSF(), PAF(), hashFunction(),*

*LP(), DH(), Resize(), put(), printhash(), isContainsLP(), isContainsDH(), Search(), Search1000().*