CS41 Assignment4

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**Assignment 4 Readme**

**This assignment include the following files:**

1. Assignment4.cpp--- source file
2. Assignment4.exe--- executable compiled in VS 2010 64 bit
3. “BORG.txt”--- original BORG source txt
4. “CustomizedBORG.txt”--- customized BORG source txt on my own
5. Assignment4 Readme.docx--- description file

**Comment:**

1. Extra credit features:
   1. “TIME”: when include just this line on txt file, it will output today’s date
   2. “HASHINDEX” (VARNAME): when include “HASHINDEX” followed by a space followed by a variable name, the program will print the hash table index where the variable is supposed to be stored
2. Sample Program (“BORG.txt”)
   1. All actual output matches sample output
3. Customized Program (“CustomizedBORG.txt”)
   1. The variable “ME”, “XE”, and “NJ” all share the hash index of 6 given a hash table size 11, which means they are chained one after another.
   2. This program verify the program perform separate chaining as collision resolution mechanism.

**Program Output:**

Sample program (“BORG.txt”) and its actual output:

|  |  |
| --- | --- |
| Input | Actual Output |
| COM HERE IS OUR FIRST BORG PROGRAM |  |
| COM WHAT A ROBUST LANGUAGE IT IS |  |
| START |  |
| VAR BORAMIR = 25 |  |
| VAR LEGOLAS = 101 |  |
| PRINT BORAMIR | BORAMIR IS 25 |
| BORAMIR ++ |  |
| PRINT LEGOLAS | LEGOLAS IS 101 |
| PRINT GANDALF | GANDALF IS UNDEFINED |
| PRINT BORAMIR \* 2 | BOARAMIR \* 2 IS 52 |
| COM |  |
| COM NESTED BLOCK |  |
| COM |  |
| START |  |
| VAR GANDALF = 49 |  |
| PRINT GANDALF | GANDALF IS 49 |
| PRINT BORAMIR | BORAMIR IS 26 |
| FINISH |  |
| PRINT GANDALF | GANDALF IS UNDEFINED |
| START |  |
| LEGOLAS = 1000 |  |
| PRINT LEGOLAS | LEGOLAS IS 1000 |
| FINISH |  |
| PRINT LEGOLAS | LEGOLAS IS 1000 |
| LEGOLAS -- |  |
| PRINT LEGOLAS | LEGOLAS IS 999 |
| FINISH |  |

Customized BORG program (“CustomizedBORG.txt”) and its actual output

|  |  |
| --- | --- |
| Input | Actual Output |
| TIME | Today is 2014-12-7 |
| COM HERE IS OUR FIRST BORG PROGRAM |  |
| COM WHAT A ROBUST LANGUAGE IT IS |  |
| START |  |
| VAR ME = 25 |  |
| VAR XE = 101 |  |
| VAR NJ = 33 |  |
| HASHINDEX ME | ME is supposed to be at index# 6 |
| PRINT ME | ME IS 25 |
| PRINT XE | XE IS 101 |
| ME ++ |  |
| PRINT GANDALF | GANDALF IS UNDEFINED |
| PRINT ME \* 2 | ME \* 2 IS 52 |
| PRINT NJ | NJ IS 33 |
| COM |  |
| COM NESTED BLOCK |  |
| COM |  |
| START |  |
| VAR ME = 122 |  |
| PRINT ME | ME IS 122 |
| PRINT XE | XE IS 101 |
| FINISH |  |
| PRINT ME | ME IS 122 |
| PRINT XE | XE IS 101 |
| PRINT NJ | NJ IS 33 |
| FINISH |  |
| TIME | Today is 2014-12-7 |