

TEXAS A&M UNIVERSITY-CORPUS CHRISTI  
Computer Science Program

**COURSE:** COSC 2437 and COSC 5321  
**Lab #7:** Hashing Practice  
**ASSIGNED:** Apr 09, 2015  
**DUE:** Apr 15, 2015, 11:59pm  
**LATE DUE:** Apr 17, 2015, 11:59pm  
**OBJECTIVE:** Create a hashed list (array) then search for given values.

**Preliminary task:**

Write a program that creates a list that can be searched quickly. To do so, create a hashed list (an array of size 13) using a modulo-division hash function with a linear probe to resolve collisions (Utilize the Hashing implementation on page 521 or create your own class).

Use the input from lab7.dat file and search data from lab7srch.dat file.

Direct the output to the external file *YourIslandIDlab7.out*.

Sample Output:

```
HASH METHOD: modulo-division
COLLISION RESOLUTION: linear probe
HASHED LIST:
SUB      KEY
 0       5876
 1       1314
 2       5343
 3       -1
 4       -1
 5       2735
 6       -1
 7       7222
 8       6248
 9       9901
10      -1
11      -1
12      -1
```

```

HASHED LIST SEARCH RESULTS:
  KEY   FOUND   HOME ADDRESS   #COLLISIONS
  5876  YES      0              0
  6248  YES      8              0
  4477  NO       5              1
  7451  NO       2              1
  2818  NO       10             0
  9901  YES      9              1
  1000  NO       12             0
  9999  NO       2              1
  4567  NO       4              0
  8398  NO       0              3
Total Number of Collisions: 7

```

***Postliminary task:***

Format your output so that the user of your program understands the values that were input and what was output for each calculation. Your program should have a user-friendly interface.

Make sure your program is properly documented and good programming standards are followed. You are required to follow C++ Style guide, which is available on Blackboard.

Try your program with a variety of input values, to determine it works properly.

***Submission:***

You can use any kind of compiler or text editor for source code creation and testing; however, your program will be graded through Penguin and g++ compiler on Penguin. Therefore, please make sure that your program works on Penguin before you will submit your lab assignment.

You will be submitting this lab zipped in 1 file via Blackboard. Prepare the 1 file with the following:

- Your program source codes (Required implementation documents [depends on design], lab7.dat, lab7srch.dat, *YourIslandIDlab7.out*, and *makefile*).
- The zipped file will be called: *YourIslandIDLab7.zip*