

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, *YourIslandID*lab7.out, and makefile).
- The zipped file will be called: *YourIslandIDLab7.zip*