# Department of Computing

**CS250: Data Structure and Algorithms**

**Class: BSCS 5AB**

# Lab 13: Hash Tables

**Date: 3rd January, 2017**

**Time: 9am- 12pm / 2pm – 5pm**

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# Lab 13: Hash Tables

**Introduction**

Hash tables implement associative arrays that allow for a different kind of index than the location of elements within the array. Hash tables use a hash function that is usually calculated from the key of the data that is to be stored in the Hash tables. There are many applications of Hash tables.

**Objectives**

In this lab we will implement a Hash Table

**Tools/Software Requirement**

Visual Studio c++ / Java / Python

**Lab Tasks**

You are required to upload the lab tasks on LMS and the name of that tasks must be in this format YourFullName\_reg#.cpp

Remember to comment your code properly.

**Task 1**

Implement a Hash table with the following requirements

* Implement Insert, remove and search functions for the hash table
* Implement a hash function based on your data
* Data can be simple numbers in this task

**Task 2**

Use the Hash table implemented in Task 1 to store information about students that contains information that is usually required in a Student Management System e.g.

* Registration number
* Bio-data
* Other relevant information

**Deliverable**

Source code of Task 1 and 2