# Objectives: Lab 05

The purpose of this lab of BTP500 is to familiarize yourself with the linked list concepts and hash tables. By the end of this lab, you should be able to:

* Successfully ran Hash table algorithm using linked list.

# 

Explore the linked list options for hash tables in C++.

1. Write a C++ program for **hash tables using linked list** that adds the following list with its own hash index.
   1. Directors:
      * Rob Minkoff
      * Bill Condon
      * Josh Cooley
      * Brad Bird
      * Lake Bell
   2. Movie Titles:
      * The Lion King
      * Beauty and the Beast
      * Toy Story 4
      * Mission Impossible
      * The Secret Life of Pets
   3. Released year:
      * 2019
      * 2017
      * 2019
      * 2018
      * 2016
   4. Scores:
      * 3.50
      * 4.20
      * 4.50
      * 5.00
      * 3.90
2. Paste the screenshot of each of the 5 functions of hash table implemented using linked list here below.

 initialize - Table is initialized to an empty table.

A screenshot of a computer

Description automatically generated

 insert - add a new item with key: value to the table.

* Insert the directors, movie titles, released year, scores given above.

A screenshot of a computer

Description automatically generated

 delete - given a key remove the record with a matching key.

* + - Delete “The Secret Life of Pets” movie title.
    - Delete “3.90” score.
    - Delete 2016 release year.
    - Delete Lake Bell director.

A screenshot of a computer

Description automatically generated

 update - given a key: value pair change the record in table with matching key to the value.

* + - Update movie title “Toy Story 4” to “Toy Story 3”
    - Update release year 2019 to 2010
    - Update director Josh Cooley to Lee Unkrich
    - Update score 4.50 to 5

A screenshot of a computer

Description automatically generated

 find - given a key find the record.

* Find Mission Impossible movie title.
* Find Bill Condon director.
* Find 2018 released year.
* Find a 3.5 score.

A screenshot of a computer

Description automatically generated

 enumerate - process/list/count all items in the table.

Display all movie titles, directors, released year, score.

# LAB 05 – SUBMISSION

# **2 files.**

# **1.   Word document BTP500-LAB5-NAME.DOCX filled with screenshots for each functions asked for hash table implementation**

# **2.   BTP500-LAB5-STUDENTNAME-hashtable-linkedlist.cpp**

Do not submit a .zip or RAR file.