// CPP program to implement hashing with chaining

#include<bits/stdc++.h>

using namespace std;

class Hash

{

int BUCKET; // No. of buckets

// Pointer to an array containing buckets

list<int> \*table;

public:

Hash(int V); // Constructor

// inserts a key into hash table

void insertItem(int x);

// deletes a key from hash table

void deleteItem(int key);

// hash function to map values to key

int hashFunction(int x) {

return (x % BUCKET);

}

void displayHash();

};

Hash::Hash(int b)

{

this->BUCKET = b;

table = new list<int>[BUCKET];

}

void Hash::insertItem(int key)

{

int index = hashFunction(key);

table[index].push\_back(key);

}

void Hash::deleteItem(int key)

{

// get the hash index of key

int index = hashFunction(key);

// find the key in (index)th list

list <int> :: iterator i;

for (i = table[index].begin();

i != table[index].end(); i++) {

if (\*i == key)

break;

}

// if key is found in hash table, remove it

if (i != table[index].end())

table[index].erase(i);

}

// function to display hash table

void Hash::displayHash() {

for (int i = 0; i < BUCKET; i++) {

cout << i;

for (auto x : table[i])

cout << " --> " << x;

cout << endl;

}

}

// Driver program

int main()

{

// array that contains keys to be mapped

int a[] = {15, 11, 27, 8, 12};

int n = sizeof(a)/sizeof(a[0]);

// insert the keys into the hash table

Hash h(7); // 7 is count of buckets in

// hash table

for (int i = 0; i < n; i++)

h.insertItem(a[i]);

// delete 12 from hash table

h.deleteItem(12);

// display the Hash table

h.displayHash();

return 0;

}