import java.util.Hashtable;

public class CLC4Hash {

Hashtable<Integer, Client> table = new Hashtable<Integer, Client>(11);

private void addClients (){

Client person = new Client (1234567, "Adam");

addToTable(person);

person = new Client (3455352, "Brenda");

addToTable(person);

person = new Client (9837373, "Brendon");

addToTable(person);

person = new Client (9871122, "Charles");

addToTable(person);

person = new Client (7894563, "Jeremiah");

addToTable(person);

person = new Client (8231573, "Katherine");

addToTable(person);

person = new Client (7574532, "Patrick");

addToTable(person);

person = new Client (1909383, "Raymond");

addToTable(person);

person = new Client (9296632, "Thorsten");

addToTable(person);

}

private void addToTable (Client name){

int key, number = name.getPhoneNumber();

int salt = name.getClientName().length();

key = hash(number, salt);

do {

if (table.get(key) == null){

table.put(key, name);

break;

}

key++;

if (key > table.size()){key = 0;}

} while (table.get(key) != null && key <= table.size());

}

private int convertNumber (int number){

char [] space = Integer.toString(number).toCharArray();

int temp = 0;

for (int x = 0; x < 7; x++){

temp += Character.getNumericValue(space[x]);

}

return temp;

}

private int hash (int num, int salt){

int temp = convertNumber(num);

int key = (temp + salt) % 11;

return key;

}

private void displayTable (){

for (int x = 0; x < 11; x++){

if (table.get(x) != null)

System.out.println(table.get(x).getClientName() + " " + table.get(x).getPhoneNumber());

}

}

private void searchTable (int key, int salt){

System.out.println(table.get(hash(key, salt)).getClientName());

}

public static void main(String[] args) {

CLC4Hash example = new CLC4Hash();

example.addClients();

example.displayTable();

example.searchTable(1234567, 4);

}

}

class Client {

private int phoneNumber;

private String clientName;

public Client (int number, String name){

phoneNumber = number;

clientName = name;

}

public int getPhoneNumber (){

return phoneNumber;

}

public String getClientName (){

return clientName;

}

}