

# Rajalakshmi Engineering College

Name: SASHTIGAN M

Email: 241501190@rajalakshmi.edu.in

Roll no: 241501190

Phone: 6381207853

Branch: REC

Department: I AIML AD

Batch: 2028

Degree: B.E - AI & ML

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## NeoColab\_REC\_CS23231\_DATA STRUCTURES

### REC\_DS using C\_Week 7\_COD\_Question 3

Attempt : 1

Total Mark : 10

Marks Obtained : 10

### Section 1 : Coding

#### 1. Problem Statement

In a messaging application, users maintain a contact list with names and corresponding phone numbers. Develop a program to manage this contact list using a dictionary implemented with hashing.

The program allows users to add contacts, delete contacts, and check if a specific contact exists. Additionally, it provides an option to print the contact list in the order of insertion.

#### ***Input Format***

The first line consists of an integer  $n$ , representing the number of contact pairs to be inserted.

Each of the next  $n$  lines consists of two strings separated by a space: the name of the contact (key) and the corresponding phone number (value).

The last line contains a string *k*, representing the contact to be checked or removed.

### ***Output Format***

If the given contact exists in the dictionary:

1. The first line prints "The given key is removed!" after removing it.
2. The next *n* - 1 lines print the updated contact list in the format: "Key: *X*; Value: *Y*" where *X* represents the contact's name and *Y* represents the phone number.

If the given contact does not exist in the dictionary:

1. The first line prints "The given key is not found!".
2. The next *n* lines print the original contact list in the format: "Key: *X*; Value: *Y*" where *X* represents the contact's name and *Y* represents the phone number.

Refer to the sample outputs for the formatting specifications.

### ***Sample Test Case***

Input: 3

Alice 1234567890

Bob 9876543210

Charlie 4567890123

Bob

Output: The given key is removed!

Key: Alice; Value: 1234567890

Key: Charlie; Value: 4567890123

### ***Answer***

```
// You are using GCC
```

```
#include <stdio.h>
```

```
#include <string.h>
```

```
#define MAX_CONTACTS 50
```

```
#define MAX_LEN 20
```

```

int main() {
    int n, index = -1;
    char names[MAX_CONTACTS][MAX_LEN];
    char phones[MAX_CONTACTS][MAX_LEN];
    char key[MAX_LEN];

    scanf("%d", &n);

    for (int i = 0; i < n; i++) {
        scanf("%s %s", names[i], phones[i]);
    }

    scanf("%s", key);

    for (int i = 0; i < n; i++) {
        if (strcmp(names[i], key) == 0) {
            index = i;
            break;
        }
    }

    if (index != -1) {
        printf("The given key is removed!\n");
        for (int i = index; i < n - 1; i++) {
            strcpy(names[i], names[i + 1]);
            strcpy(phones[i], phones[i + 1]);
        }
        n--;
    } else {
        printf("The given key is not found!\n");
    }

    for (int i = 0; i < n; i++) {
        printf("Key: %s; Value: %s\n", names[i], phones[i]);
    }

    return 0;
}

```

**Status :** Correct

**Marks :** 10/10