

# Rajalakshmi Engineering College

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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 <stdlib.h>
```

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

```
#define MAX 50
```

```

#define NAME_LEN 11
#define PHONE_LEN 15
typedef struct {
    char name[NAME_LEN];
    char phone[PHONE_LEN];
    int is_active;
} Contact;

int main() {
    int n;
    Contact contacts[MAX];

    printf("");
    scanf("%d", &n);
    getchar();
    for (int i = 0; i < n; i++) {
        scanf("%s %s", contacts[i].name, contacts[i].phone);
        contacts[i].is_active = 1;
    }

    char key[NAME_LEN];
    scanf("%s", key);
    int found = 0;
    for (int i = 0; i < n; i++) {
        if (contacts[i].is_active && strcmp(contacts[i].name, key) == 0) {
            contacts[i].is_active = 0;
            found = 1;
            break;
        }
    }

    if (found) {
        printf("The given key is removed!\n");
    } else {
        printf("The given key is not found!\n");
    }

    for (int i = 0; i < n; i++) {
        if (contacts[i].is_active) {
            printf("Key: %s; Value: %s\n", contacts[i].name, contacts[i].phone);
        }
    }
}

```

```
} return 0;
```

**Status :** Correct

**Marks :** 10/10