

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 <string.h>
```

```
#define MAX_CONTACTS 50
```

```
typedef struct {
```

```
    char name[11];
```

```
    char phone[11];  
} Contact;  
  
void printContacts(Contact contacts[], int size) {  
    for (int i = 0; i < size; i++)  
        printf("Key: %s; Value: %s\n", contacts[i].name, contacts[i].phone);  
}
```

```
int main() {  
    int n;  
    scanf("%d", &n);  
    Contact contacts[MAX_CONTACTS];  
    for (int i = 0; i < n; i++)  
        scanf("%s %s", contacts[i].name, contacts[i].phone);  
  
    char key[11];  
    scanf("%s", key);
```

```
  
    int found = -1;  
    for (int i = 0; i < n; i++) {  
        if (strcmp(contacts[i].name, key) == 0) {  
            found = i;  
            break;  
        }  
    }  
}
```

```
  
    if (found != -1) {  
        printf("The given key is removed!\n");  
        for (int i = found; i < n - 1; i++) {  
            strcpy(contacts[i].name, contacts[i + 1].name);  
            strcpy(contacts[i].phone, contacts[i + 1].phone);  
        }  
        n--;  
    } else {  
        printf("The given key is not found!\n");  
    }  
}
```

```
    printContacts(contacts, n);
```

```
    return 0;
```

```
}
```

Status : Correct

Marks : 10/10