# 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
void insertKeyValuePair(Dictionary *dict, const char *key, const char *value) {
    //Type your code here
    if(dict->size>=dict->capacity){
        dict->capacity*=2;
        dict->pairs=(KeyValuePair*)realloc(dict->pairs,dict->capacity*
sizeof(KeyValuePair));
```

```
    }
    strcpy(dict->pairs[dict->size].key,key);
    strcpy(dict->pairs[dict->size].value,value);dict->size++;

}
void removeKeyValuePair(Dictionary *dict, const char *key) {
    //Type your code here
    for(int i=0;i<dict->size;i++){
        if(strcmp(dict->pairs[i].key,key)==0){
            for(int j=i;j<dict->size-1;j++){
                dict->pairs[j]=dict->pairs[j+1];
            }
            dict->size--;return;
        }
    }
}
int doesKeyExist(Dictionary *dict, const char *key) {
    //Type your code here
    for(int i=0;i<dict->size;i++){
        if(strcmp(dict->pairs[i].key,key)==0){
            return 1;
        }
    }
    return 0;
}
void printDictionary(Dictionary *dict) {
    //Type your code here
    for(int i=0;i<dict->size;i++){
        printf("Key: %s; Value: %s\n",dict->pairs[i].key,dict->pairs[i].value);
    }
}
```

***Status :*** Correct **Marks : 10/10**