

// Group A Question 1

```
#include <iostream>
using namespace std;
```

// Class to store contact details

```
class telebook {
    string name;
    long int tel;

public:
    telebook()
    {
        tel = 0;
    }
    friend class hashing;
};
```

```
class hashing {
```

```
    telebook data[100];           // Maximum size of directory is
100
    string nm;
    long int t;
    int index,size;
```

```
public:
    hashing()
    {
```

```
t = 0;
size=100;
}
```

// This method takes details from the user like Name and Telephone number

// and create new record in the hashtable.

```
void create_record()
```

```
{
    cout << "\nEnter name of customer :";
    cin>> nm;
    cout<<endl<<" Enter telephone number (10digit)";
    cin>>t;
    index = t % size;

    // Inserting record using linear probing in case of collision
    for (int j = 0; j < size; j++) {
        if (data[index].tel == 0) {
            data[index].name = nm;
            data[index].tel = t;
            break;
        }
        else
            index = (index + 1) % size;
    }
}
```

// This method takes the key of the record to be searched.

// Then, it traverses the hash table, if record id matches

// with the key it displays the record detail.

```

void search_record()
{
    int index1, flag = 0;
    long int key;
    cout << "\n telephone number to search : ";
    cin >> key;
    index1 = key % size;

    // Traversing the directory linearly inorder to search record
detail
    for (int a = 0; a < size; a++) {
        if (data[index1].tel == key) {
            flag = 1;
            cout << "\nRecord found:";

            cout << "\tNAME ";
            cout << "\t\tTELEPHONE ";
            cout << data[index1].name << " \t" <<
data[index1].tel;
            break;
        }
        else
            index1 = (index1 + 1) % size;
    }
    if (flag == 0)
        cout << "\n.....Record not found";
}

// This function is created to display all the record of the diary.
void display_record()

```

```

{
    cout << "\n\tNAME";
    cout << " \t\tTELEPHONE ";
    // Displaying the details of all records of the directory.
    for (int a = 0; a < size; a++) {
        if (data[a].tel != 0) {
            cout << "\n\t" << data[a].name << " \t" <<
data[a].tel;
        }
    }
}
};

```

// Driver code

```

int main()
{
    hashing s;           // creating object of hashing class
    int cho=0;

    while(cho<4)
    {
        cout<<endl<<" Enter 1 : Create new Client record ";
        cout<<endl<<"Enter 2 : Display all record";
        cout<<endl<<"Enter 3 : Search ";
        cout<<endl<<" Enter 4: Exit";
        cout<<endl<<" Enter your choice ";
        cin>>cho;
        switch(cho)
        {
            case 1 :

```

```
    cout << "\n1.CREATE Record ";
    s.create_record(); break;

    case 2 :
        cout << "\n\n\n\n2.DISPLAY Record ";
        s.display_record();
        break;

    case 3:
        cout << "\n\n\n\n3.SEARCH Record";
        s.search_record();
        break;
    }

}

return 0;

}
```